



SCIENTIFIC REPORT submitted to EFSA

Pest risk assessment in the European Community: inventory of data sources

CFP/EFSA/PLH/2007/01¹

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ABSTRACT

The purpose of the Prassis project (acronym of Pest risk assessment in the European Community: inventory of data sources) is to review and to produce an inventory of international and national key information and data sources, necessary to conduct the risk assessment of harmful organisms. A protocol was developed for inventorying the sources available in literature, in web-sites, in databases, and in software, in a structured, transparent, and efficient manner. The protocol was designed in such a way that the data sources inventoried could also be useful for future risk assessments in other fields and / or connected with other databases. About 250 descriptors (metadata) were defined for describing the data sources. Metadata for evaluation of data quality (strengths and weaknesses), accessibility for EFSA, and suitability for pest risk assessment were also included. International standards and codes were used whenever possible. The protocol was implemented in a user-friendly web-portal. The web-portal was designed to facilitate on-line entry of new data sources and on-line modification or updating of the existing ones. The web-portal also makes it possible to search the data sources within the inventory by using both basic and advanced search procedures, and to summarize results in a clear and concise way. A database was developed containing international and national information and data sources. The inventory covers the 27 European Member States and 34 third Countries. About 500 sources were entered in the web-based portal; because some sources contain information on different aspects of pest risk analysis, there are more than 600 records of interest. The project has three main weaknesses: i) although very large, the database is incomplete; ii) procedures for evaluating the quality of the sources included in the inventory can be improved; iii) the practical use of web-portal functionalities has not been thoroughly tested. Possible solutions are provided.

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Key words: pest risk assessment, quarantine pests, data sources, inventory, web-portal

SUMMARY

The purpose of the Prassis project is to review and to produce an exhaustive inventory of international and national key information and data sources necessary for conducting the risk assessment of harmful organisms for the EC according to guidance provided in the ISPM No. 11. This inventory should support the EFSA Panel on Plant Health in providing independent scientific advice on the risk posed by plant pests, i.e., organisms that can be considered harmful to plants and plant products or can affect biodiversity in the EU. This work requires a very large amount of information and data that are not easily obtained.

Project results have met the objectives indicated in the project call and in the amendments requested by EFSA at the beginning of the project. A protocol was developed for inventorying the information and data sources (available in literature, web-sites, databases, and software) required for performing the three steps of the pest risk assessment process for quarantine pests (according to guidance provided in the ISPM No. 11) in a structured, transparent, and efficient manner. The protocol was designed in such a way that the inventoried data sources can also be used in the future for risk assessment in other fields and / or connected with other databases. About 250 descriptors (metadata) were defined for describing the data sources; some of these metadata are mandatory while others are optional. Metadata were also included for evaluating data quality (strengths and weaknesses), accessibility for EFSA, and suitability for pest risk assessment. International standards and codes were used whenever possible.

The protocol was implemented in a user-friendly web-portal. The portal was designed for on-line entry of new data sources and for the on-line modification or updating of the existing sources. The web-portal also makes it possible to search the data sources within the inventory by using both basic and advanced search procedures, and to summarize results in a clear and concise way. Oracle was used as the Data Base Management System, and Oracle Application Express (Apex) was the programming language. The Prassis web-portal is accessible to authorized users by any computer equipped with a web browser. Two types of users can access the web-portal: Standard Users and Power Users, the latter being authorised to perform all the typical actions of a database management administrator. A User's Manual was developed that describes every functionality of the Prassis web-portal.

A database was developed containing international and national information and data sources. The inventory covers the 27 European Member States and third Countries, when relevant. Relevance of a third Country as a possible source for pest introduction was evaluated based on flows of the plant-related commodities imported into Europe, including wood and articles of wood, as well as total merchandise as a proxy for the exchange of packaging materials. A total of 34 third Countries were selected. Sources were searched in the literature (scientific and technical publications, proceedings of workshops/ congresses/ seminars), web-sites, databases, and the software available on the market. Four domains were accessed: i) the World Wide Web, using Google as the web search engine; ii) the Library System of the Università Cattolica del Sacro Cuore; iii) questionnaires sent to the representatives at the EFSA Special Advisory Forum on Plant Health and to competent institutions of the 27 EU

Member States; and iv) the inventory shared with Pratique. About 500 sources were entered in the web-based portal; because some sources contain information on different aspects of pest risk assessment, there are more than 600 records of interest.

In spite of the success of the Prassis project in producing the above-mentioned tools, it shows three main weaknesses: i) although very large, the database is incomplete; ii) procedures for evaluating the quality of the sources included in the inventory can be improved; iii) the practical use of web-portal functionalities has not been thoroughly tested. Possible solutions are provided.

TABLE OF CONTENTS

Abstract	1
Summary	2
Table of Contents	4
Background	5
Terms of reference.....	6
Acknowledgements	7
Introduction and Objectives	8
1.The inventory protocol.....	9
2.The web-based portal	9
2.1.Web vs. desktop application.....	10
2.2.Portal architecture.....	10
2.3.Database design.....	11
2.4.Web-portal development	11
2.5.Performances of the web-based portal	13
3.The User's Manual for the web-based portal	16
4.The relevant Third Countries	16
5.The national information sources	17
6.The inventory of the information sources	21
7.Quality evaluation of the information sources	27
8.Suitability evaluation of the information sources.....	29
8.1.Knowledge gaps for PRA.....	31
Conclusions and Recommendations.....	35
1.Points of strength.....	36
1.1.The inventory protocol.....	36
1.2.The web-portal	36
1.3.The database.....	37
2.Points of weakness	37
2.1.Database size and completeness.....	37
2.2.Quality evaluation of sources	39
2.3.In-practice evaluation.....	39
3.Perspectives.....	39
References	40
Glossary and abbreviations	41
Annexes.....	42
Annex I – Inventory protocol.....	43
Annex II – Criteria for evaluating documents with emphasis for Web pages.....	56
Annex III – Database: summary information.....	59

BACKGROUND

The European Food Safety Authority (EFSA) is the keystone of European Union (EU) risk assessment regarding food and feed safety. EFSA's mandate covers food and feed safety, nutrition, animal health and welfare, plant protection, and plant health. In all these fields, EFSA's most critical responsibility is to provide objective and independent science-based advice and clear communication grounded in the most up-to-date scientific information and knowledge.

The EFSA Panel on Plant Health (PLH) provides independent scientific advice on the risk posed by pests that can harm plants, plant products, or biodiversity in the EU. The Panel reviews and assesses those risks with regard to the safety and security of the food chain.

Protective measures against pest introduction and spread within the Community are established by the Council Directive 2000/29/EC. The framework for conduction of risk analysis for phytosanitary purposes outlined by the International Plant Protection Convention (IPPC) includes the following International Standards for Phytosanitary Measures (ISPM): No. 2 (Framework for pest risk analysis), No. 5 (Glossary of phytosanitary terms), and No. 11 (Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms).

Pest risk analysis is defined, in the ISPM No. 5, as the process of evaluating biological or other scientific and economic evidence to determine whether a pest should be regulated and to determine the strength of any phytosanitary measures to be taken against it. According to ISPM No. 2, the pest risk analysis follows a process of three stages: i) initiating the pest risk analysis; ii) pest risk assessment; and iii) pest risk management. ISPM No. 11 provides details for conducting pest risk analysis. In EFSA, risk assessment is carried out independently from risk management. As the risk assessor, EFSA and thus the PLH Panel produces scientific opinions and advice to provide a sound foundation for the European decision makers. The Panel's risk assessment work is based on reviewing scientific information and data to evaluate the risks posed by a given issue. By request from the EC, the Panel currently reviews pest risk assessments made by third parties about pests that have been claimed by the original risk assessors to be harmful in the meaning of the Council Directive 2000/29/EC.

In this context, the PLH Unit has identified the need to assemble information on critical data inputs, data quality, and data sources required for assessments of risks posed by organisms considered harmful to plants and plant products (as defined in the Council Directive 2000/29/EC) and therefore eligible for risk management. Data inputs are decisive throughout the process of the pest risk assessment, from categorisation to assessment of: the probability of introduction and spread; the potential economic consequences of pest impacts on the crop yields, quality of plant products, or export markets; and the potential impacts on biodiversity and even human and animal health. Although EFSA does not consider economical values eligible for evaluation, EFSA does consider the critical effects of pests on crop plants, biodiversity, and human needs.

The key data and information sources for pest risk assessment may not always be available or accessible. Data gaps resulting in uncertainties may have important effects on the decision making. Uncertainties in pest risk assessment may stem from gaps in current information,

imprecise information, errors in the assessment procedure or in the assumptions, and unpredictable changes in the situation of the pest, the host, or the trade.

TERMS OF REFERENCE

EFSA launched the call for proposals CFP/EFSA/PLH/2007/01, “Inventory of data sources for phytosanitary pest risk assessment in the European Community”, with the aim of reviewing and thoroughly inventorying international and national key information and data sources necessary to conduct the risk assessment of organisms considered harmful to plants and plant products for the EC; included in this review and inventory are: the evaluation of data quality and data accessibility for EFSA and the identification of significant knowledge gaps.

According to the EFSA call, the inventory must include all key data sources necessary for performing pest categorization, assessment of the probability of introduction and spread, and assessment of potential economic consequences, including environmental impacts, of the pest risk assessment process for quarantine pests, according to guidance provided in the ISPM No. 11. For each step, the main elements to be addressed in the proposal were specified in a table included in the call. Data sources on taxonomy and biological characteristics of the pests were not required by the EFSA call.

After the key data sources for each element of the risk assessment steps have been identified, the accessibility of the data must be reviewed and the data quality (in terms of accuracy and suitability for the use in the risk assessment process) must be assessed. For each data source, the following information should be obtained: a detailed description of the content; the format (printed or electronic); the contact institutional address and/or the website address of the database; the data accessibility for the EFSA (e.g., free or restricted access, with registration or subjected to fees); the possibility of downloading and using the data (e.g., free or restricted usage, subjected to limitations or copyrights); whether the data have been reviewed and/or referenced, and the frequency of updating; the format used for data storage; the language used in the data set; and the coding/categorization used for countries, crop groups, etc., including whether that coding is standardized and can be compared/linked with other data sets. The strengths and the weaknesses of each data source, including suggestions for overcoming the identified weaknesses, must be highlighted. The results and conclusions must be summarized clearly and concisely.

Information and data must cover all European Member States (MSs) and also third Countries when relevant for the above-mentioned pest risk assessment steps. An exhaustive list must be included of the key data and information required for assessments of risks posed by organisms considered harmful to plants and plant products as defined in the Council Directive 2000/29/EC and therefore eligible for risk management. The criteria that will be used for evaluating the quality and accessibility of the data sources must also be presented, and examples must be provided.

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INTRODUCTION AND OBJECTIVES

INTRODUCTION

Pest risk analysis (PRA) is the process of evaluating biological or other scientific and economic evidence to determine whether a pest should be regulated and the strength of any phytosanitary measures to be taken against it (ISPM No. 5). PRA includes i) initiation of the pest risk analysis, ii) pest risk assessment, and iii) pest risk management (ISPM No. 2).

In EFSA, risk assessment is carried out independently from risk management. The PLH Panel provides independent scientific advice on the risk posed by plant pests that can harm plants and plant products or can affect biodiversity in the EU. The Panel produces scientific opinions and advice to provide a sound foundation for the European decision makers. By request from the European Commission (EC), the Panel currently reviews pest risk assessments made by third parties about pests that have been claimed by the original risk assessors to be harmful in the meaning of the Council Directive 2000/29/EC.

This work requires a very large amount of information about the pest itself; the situation in the pest's current area of distribution; the pathways of movement across the world; the factors affecting its establishment, spread, and impacts in the area under threat; and the measures available for its management. Therefore, the Panel's experts must have access to all the data necessary for this evaluation and for expanding their analysis to cover the whole EU, so that regulations are based on PRAs relevant to every EU MS.

Unfortunately, there is currently no unique, readily available repository where all the necessary information and data are described and evaluated according to their use in and relevance for PRA. For this reason, it is difficult to select this information based on its relevance, and it is also difficult to readily access it. Furthermore, there is lack of homogeneity between several long-standing and new EU MSs in collecting and making available relevant national data.

OBJECTIVES

The main objective of the Prassis project (acronym of Pest risk assessment in the European Community: inventory of data sources) was to review and inventory those key information and data sources, both international and national, required for conducting the risk assessment of harmful organisms for the European Community according to guidance provided in the ISPM No. 11. This risk assessment involves: i) pest categorization, ii) assessment of the probability of introduction and spread, iii) assessment of potential economic consequences, including environmental impacts.

The main requisites of this inventory were to: i) identify the information and data sources available in the literature (scientific and technical publications, proceedings of workshops /congresses/seminars), web-sites, databases, and software; ii) cover all European MSs and third Countries, when relevant; iii) include metadata for accurate description of the data source, evaluation of data quality (strengths and the weaknesses), accessibility for EFSA, and suitability for pest risk assessment by the Panel's experts; iv) provide suggestions for overcoming possible problems and identify significant knowledge gaps; and v) clearly and concisely summarize results and conclusions.

PROJECT RESULTS

To meet the objectives indicated in the project call, three main tools were developed within the Prassis project. In particular,: i) a structured, flexible, and transparent protocol for inventorying the information sources for PRA; ii) a user-friendly web-portal for storing, updating, evaluating, and searching the data sources within the inventory via the Internet; and iii) a database containing all the metadata of the information and data sources inventoried.

1. The inventory protocol

The inventory concerns international and national key information and data sources required for performing the three steps of the pest risk assessment for quarantine pests, according to guidance provided in the ISPM No. 11. This includes information and data sources available in the literature (scientific and technical publications, proceedings of workshops/ congresses/ seminars), web-sites, databases, and software available on the market.

Criteria and priorities for searching the sources were defined, as were the corresponding metadata to be used for describing the data sources inventoried. These metadata were organised in a specific protocol. The protocol was designed so that the data sources inventoried could also be useful in the future for risk assessment in other fields and / or could be connected with other databases. Some of these metadata must always be documented (are mandatory) while others are optional. About 250 descriptors (metadata) were defined for describing the data sources. International standards and codes were searched, acquired, modified (when necessary), and used for defining metadata contents. When multiple options were available, the best standard to be used was agreed upon by the PLH Unit. Specific metadata were included for evaluating data quality (strengths and weaknesses) and accessibility for EFSA. Some aspects with no or minor relevance for PRA were considered with greater detail than strictly necessary to meet the above-mentioned general purposes.

The protocol has a double-level structure: a general section and six specific sections (Annex I). The general section (A) contains the set of information necessary to clearly identify the source, and this general section must be completed for any data source. The specific sections contain the sets of specific information concerning pests (section B), crops and vegetation (C), climate (D), soil (E), trade (F), and tourism (G), and filling out these sections may or may not be required depending on the subject of each data source. A further section (H) contains specific information about those data sets with geographical coordinates or location information (points).

2. The web-based portal

The Prassis web-portal was designed to facilitate the on-line inventorying of information and data sources retrieved during the project, the adding of new sources after the end of the project, the modifying or updating of the existing ones by the EFSA staff, EFSA Panel members, or external authorised experts.

2.1. Web vs. desktop application

The choice of building a web application resulted from a preliminary comparison of the advantages and disadvantages of creating a web application vs. choosing a desktop application. The term “web application” refers to an application hosted on a web server that is accessible by final users through a web browser (so called thin client) and an Internet connection. A “desktop application” is a self-contained (stand-alone) program that runs from a local drive and does not require a network or connectivity to operate. This comparison led to the decision to develop a web application. Advantages and disadvantages of a web application can be summarized as follows.

Single installation (server side only): no installation is required for each client because only a web browser is needed to access the application; in this way, compatibility problems with the client platform are avoided.

Easy maintenance and upgrading: no need to maintain and upgrade several installations.

24 hours x 7 days accessibility: application is accessible all the time and everywhere an Internet connection is available.

Connectivity: an Internet connection is required to access the application; nevertheless, most potential users have access to an Internet connection.

Speed: working online can be slower than working on a local machine. This disadvantage will be taken into account during the entire development cycle with the final goal of improving performance as much as possible.

Security: working online can involve security risks. This is why the network infrastructure that will host the web application should be properly protected (e.g., through the adoption of a firewall or an IDS).

2.2. Portal architecture

The EFSA’s standards for the on-line procedures were adopted in designing the web-portal architecture. Oracle was used as the DBMS (Data Base Management System), and the Oracle Application Express (also called Oracle Apex) was the software. With Apex, which is a free software development environment based on the Oracle database, complex web-based applications can be created relatively rapidly. In this application, Apex runs in every web server thanks to an embedded PL/SQL gateway. The embedded PL/SQL gateway runs in the XML DB HTTP server in the Oracle database and includes the core features of `mod_plsql`. Figure 1 shows the Oracle Application Express architecture using the Embedded PL/SQL Gateway. No client software is required to develop, deploy, or run Application Express applications. On the final user side, the Prassis application is accessible by any computer equipped with a web browser.

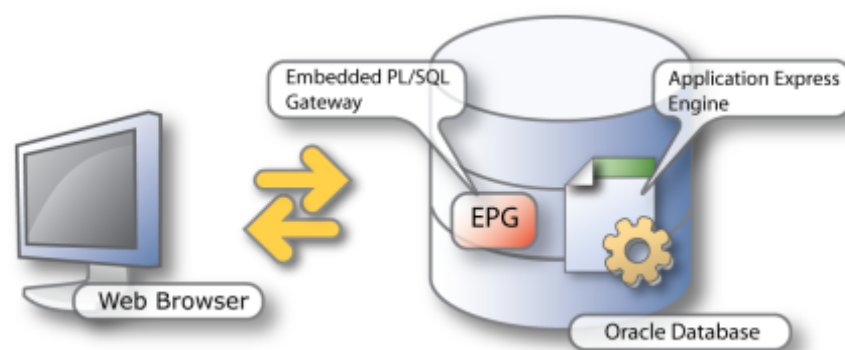


Figure 1: Oracle Application Express architecture

2.3. Database design

The Oracle database needed to run the web-portal was created using the metadata of the inventory protocol.

2.4. Web-portal development

After the portal architecture was defined and the database was designed, the effective application was developed by using Apex. As agreed upon by EFSA, the Prassis final application is still hosted on the web server of “Università Cattolica del Sacro Cuore” (UCSC) at the time of this report. The application is accessible only to authorized users through username and password (Figure 2).

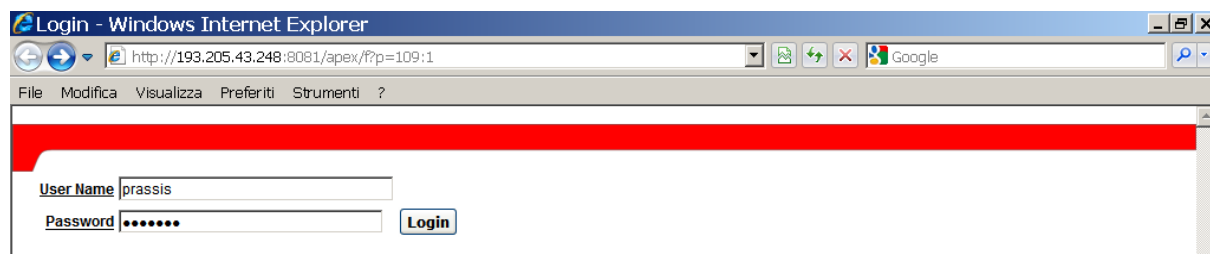


Figure 2: Login screen for accessing the Prassis web-portal

Several screenshots of the web-portal are presented in Figures 3 to 7. As shown in these figures, the application was organized in different “sheets” accessible through the labels (from “General information” to “Advanced search”) on the upper right corner of the screen. This presentation format was selected for two reasons: to increase the usability of the application by logically separating the information related to the various types of data sources (pests, crops, soil, etc.);

to avoid the need for long scrolling on a single page and to guarantee that each page is loaded quickly.

The web-based portal was designed to offer the typical functionalities of a database management tool: authorized users can enter, update, and delete information about sources, and can search within the inventory by keywords (either through a basic or an advanced search feature).

The screenshot displays the 'General information' input form within the Prassis web-portal. The interface features a red header bar with navigation tabs: 'General information' (active), 'Pests', 'Crops and vegetation', 'Climate', 'Soil', 'Trade', 'Tourism', 'GIS', 'Suitability', and 'Advanced search'. A 'Logout' link is visible in the top right corner. The main form area is titled 'General information' and includes a 'Back' button and a 'Create' button. The form fields are as follows:

- Id source:** A text input field.
- Source name (complete):** A text input field with a red asterisk indicating it is required.
- User:** A dropdown menu with a red asterisk.
- Acronym:** A text input field with a red asterisk.
- Summary:** A large text area with a vertical scrollbar.
- Keywords:** A text input field.
- Type of source:** A dropdown menu.
- Type of source (Other):** A text input field.
- English language:** A checkbox.
- German language:** A checkbox.
- French language:** A checkbox.
- Address in EFSA library:** A large text area with a vertical scrollbar.

Below the main form is a 'Subject' section containing several sub-sections, each with a 'Yes/No' radio button and a 'Comments' text area:

- About Pests:** Radio buttons for 'Yes' and 'No'; 'Comments' text area.
- About Trade:** Radio buttons for 'Yes' and 'No'; 'Comments' text area.
- About Soil:** Radio buttons for 'Yes' and 'No'; 'Comments' text area.
- About Climate:** Radio buttons for 'Yes' and 'No'; 'Comments' text area.
- About Tourism:** Radio buttons for 'Yes' and 'No'; 'Comments' text area.
- About Crops and Vegetation:** Radio buttons for 'Yes' and 'No'; 'Comments' text area.

The bottom of the page shows a red footer bar with the year '2020' on the left and navigation arrows on the right.

Figure 3: Input template of the general section of the Prassis web-portal

Figure 4: Example of how a record detail is displayed in the Prassis web-portal

2.5. Performances of the web-based portal

The Prassis web-based portal was mainly intended to be used to search for relevant information in order to perform a PRA. Therefore, the crucial feature that must be assessed is the search procedure.

Maximizing the web-portal performances was one of the main tasks since the initial stages of the development cycle: the database was structured and the web application was designed to minimize the time needed to perform each action (e.g., entering a new source, searching for a source, browsing among sheets, etc.). Obviously, because the web application is accessed through the Internet, the application performances are strongly affected by two factors that are not under the direct control of the developers: i) the Internet connection speed of the client machine (a typical xDSL connection is recommended); ii) the hardware equipment of the client machine (only standard hardware is needed).

As mentioned before, attention was paid to the performance of the search operations. The web-based portal offers two kinds of searches: basic and advanced. In the basic search, the user can enter a string (one or a few keywords) that will be searched within all the fields of the sheet. Figure 5 shows the result screen for a search performed using the keyword “pest”. The following fields are displayed: ID (identification number) and name of the source;

summary and keywords; URL for websites; source details for journals, books, etc; and type of source. The term searched for is highlighted in red.

ID	Source ID	Summary	Keywords	URL	Source	Type of source
641	Department for Environment, Food and Rural Affairs.	DEFRA is UK government department responsible for the environment, for food and farming, and for rural matters. Its priorities are to secure a healthy natural environment, a sustainable, bioeconomy, a thriving farming sector and a sustainable, healthy and secure food supply.	UK; pest; management	http://www.defra.gov.uk/		Website
264	AFSCA - Agence fédérale pour la sécurité de la chaîne alimentaire	Belgian Plant Health Control regulates and specific control measures which have to be taken against various pests. Belgian Plant Health Control regulates: Plant production, animal production for the annual surveys of C-pests.	Belgium; food safety; phytosanitary control	http://www.farv-afscas.be/eng/phyto/eng_phyto_21.asp		Website
701	APHIS Required Plant List	The Required Plant List (RPL) provides focus to APHIS regulatory activities, including inspection of commodities for pests in its quarantine program and U.S. port-of-entry, border-to-border, and methods for pest risk mitigation, and pest eradication programs. The list is updated from time to time. The list is updated to reflect recent economic importance and pest status. APHIS continually updates the Required Plant List through its inspection and survey activities. In addition, due to changes in pest status or new information, certain pests are added through inspection or surveys, no longer be regulated. The pest on the list, unless a phytolith, is the only pest that is listed on the RPL. Therefore, the RPL does not include all pests for which APHIS could regulate. See action.	USA; regulatory	http://www.aphis.usda.gov/plant/required/		Website
654	Advice Service Agronomy of Sicily	Agronomical service is a structured system that, through the combined use of meteorological knowledge, climatic and agronomic, and based on the availability of modern technological means, provides complete and economic crop protection and support for the management of agriculture, forestry and horticulture. The management and operation of services of agronomy have been encouraged and fostered by the European Union, as the agronomical service for the agricultural sector. The economic goal, in agriculture, is to create a rural environment that, among other things, provides: diversification of production and diversification of quality products; good management of natural resources and environmental protection; sustainable production, including the reduction of pesticide residues in production systems. Agronomy, as a discipline, is therefore an essential tool for both production and environmental protection. From the scientific and technical point of view, therefore, the development and the operational start of the meteorological service information service (MSIS).	Italy; Sicily; agronomical service	http://www.asa.regione.sicilia.it/		Website
621	Agricultural Services and Rural Development. Plant Health Department. Croatia	This is the official web site of the Government of Vukovar, Ministry for Resources & Rural Affairs. It contains various information about agriculture in Vukovar, and the section Plant Health Department, and contains and updates several data sheets regarding the most frequent disease pests in Vukovar.	Malta; pests	http://www.agric.gov.mt/pub/afscas/afscas1/		Website
101	Agronomic Change/Widerent Research Station ADW	Agronomic Change/Widerent Research Station conducts applied research in plant sciences. Areas of study include field crops, pastures, viticulture, arboriculture, horticulture, berries and ornamental plants. It is also engaged with carrying out research and technical assistance in the area of description of current situation of quarantine pests in Switzerland.		http://www.adw.admin.ch/themen/0276/0254/0254/0254/index.htm?lang=en	http://www.adw.admin.ch/themen/0276/0254/0254/0254/index.htm?lang=en	Website
651	An Integrated Pest Management System in Germany for the Control of Fungal Leaf Diseases in Sugar Beet	The IPM Sugar Beet Model	pest management; primary; sugar; beet	http://agribusiness.apnl.org/doi/pdf/10.1084/PDS.2002.05.4.287	Plant Diseases, 2002, 35, 4, 287-344, 22 ref.	Journal article
111	Australian Government - Department of Agriculture, Fisheries and Forestry	The page of the site of the Department of Agriculture of Australia regarding pest, diseases and weeds, has links to some of the more high profile pests and diseases that are known to Australia: avian (including avian), marine and open health. You will also find information on how we respond to pest and disease outbreaks, and how these incidents can be prevented in the first place.	pest control; plant disease; quarantine	www.daff.gov.au/	www.daff.gov.au/	Website
611	Australian Plant Pest Database	The APPO is an online-based, pest, weed and fungi database associated with plant pest collections in Australia. The APPO can be used to support decisions made with respect to agricultural trade and emergency pest management.	Pest Collections; Distributed Databases; Australian Plant Pest Database; Plant health status	www.panthealthafrica.com.au	www.panthealthafrica.com.au/APPO	Database
622	Book: diseases	This database (part of 1112 individual plant records, and the other of 2300 individual animal records) searchable by Latin name, Russian name, order, family, country of origin, and region of introduction. Information provided for species includes Latin name, Russian name, region, order, family, and the plant protection program within the region of acquisition, name of introduction, date of introduction, date of introduction, year of introduction, purpose of introduction, larger organisms, and other information. Information includes: year and scientific institution, (from the National Institute of Invasive Species Services).	quarantine; pest; Russia; Invasive Species; Russia	www.bood.ru	www.bood.ru/zhivotnoyevn_nim	Database
101	Bioversity International	With effect from 1 December 2008, IPDS and IIS&P operate under the name 'Bioversity International'. However, for short, the new name applies to new entries, which focus on improving production through biodiversity research.	Guatemala; Plant diseases; pest risk	www.biovintl.org	www.biovintl.org	Website
261	British Columbia Plant Health Strategy	A strategic science-based approach is needed to protect and address the plant health and forest health and agricultural crop in British Columbia (BC). This document outlines the Plant Health Strategy developed by and for the Plant Health Unit, Food Safety and Quality Branch of the British Columbia Ministry of Agriculture and Lands (BCOMAL). Plant health management contributes to the protection of human health and the environment by promoting best management practices that include the application of integrated Pest Management principles and the reduction of risks from invasive species on agriculture and biodiversity.		www.agric.bc.ca/strategic/index.htm	www.agric.bc.ca/strategic/index.htm	Website
651	Canadian Food Inspection Agency	CFIA's core and mandate are directly to the Government of Canada's priorities for ensuring economic prosperity, strengthening security at the border and the safety of the food supply, protecting the environment and contributing to the health of Canadians. The objective of the pest protection program within the CFIA are to prevent the introduction and spread within Canada of pest species of quarantine significance, to detect and control or eradicate designated plant pests in Canada, and to certify plant and pest products for domestic and export trade.	plant pathology; safety of the food supply; identification of pests	http://www.inspection.gc.ca/english/agen/agen.html	http://www.inspection.gc.ca/english/agen/agen.html	Website
21	Classificatore degli agenti patogeni per gli animali e vegetali	This document was edited on request of the Italian Government and provides a wide list of pests known to be harmful for animals or plants. Pests are associated to a risk index, criteria for classification are explained in the introduction and are specific for plants or animals and based on the general conditions present on the Italian territory.	list of pests; risk; classification			Other
201	Comité de Sanidad Vegetal de Cono Sur	State of Chile's Comité de Sanidad Vegetal de Cono Sur is an organization between governments of Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay, which contains list sheets of quarantine pests and the their diagnostic methods.	Quarantine; pest; Argentina; Bolivia; Brazil; Chile; Paraguay; Uruguay	http://www.covsa.org/index.php		Website

Figure 5: Example of the results obtained for a basic search performed for the keyword “pest”

In the advanced search, the user can enter several keywords by specifying the fields to be searched for each term. The main advantage of this feature is that it enables the user to combine different search criteria at the same time. Some key metadata were selected to be used as search parameters for the advanced search. These metadata include: i) source name; ii) summary; iii) keywords; iv) type of source; v) topic; vi) language; vii) publication year; viii) geographical coverage; ix) pest/crop/commodity considered; x) meteorological variables; xi) all the fields considered for the suitability evaluation (section 8).

The template for performing the advanced search is shown in Figure 6. This mask is accessible through the “Advanced search” folder in the upper right corner of the Prassis

screen. The result of a search is a list of sources that meet the search requirements, which are displayed in a table showing the most informative metadata of each source (Figure 7).

The screenshot shows the 'Advanced search' interface. At the top, there are navigation tabs: 'General information', 'Pests', 'Crops and vegetation', 'Climate', 'Soil', 'Trade', 'Tourism', 'GIS', 'Suitability', and 'Advanced search'. Below these is a search bar with a 'Search' button. The search criteria section includes:

- Source name: [text input]
- Summary: [text input]
- Keywords: [text input]
- Type of source: [dropdown menu]
- Publication year: [range selector with '<' and '>' symbols]

 There are two sections of checkboxes:

- Topic:** About Pests, About Trade, About Soil, About Climate, About Tourism, About Crops and Vegetation.
- Language:** English, German, French, Other languages.

Figure 6: Part of the Advanced search form

ID	Name	Country	Keywords	URL	Source	Type of source
7001	APHIS Required Pest List	USA	USA regulatory	http://www.invasivepecies.org/invasive.htm		Website
3001	Alien Plant Invaders of Natural Areas			http://www.rpa.gov/parts/alienvet.htm		Website
3001	British Columbia Plant Health Strategy			www2.gov.bc.ca/govprod/indus.htm	www2.gov.bc.ca/govprod/indus.htm	Website
5041	California Invasive Plant Council		Invasive plants, California, ecology	http://www.cal-ipc.org/		Website
6003	Canadian Food Inspection Agency		pest (pathology, safety of the food supply), identification of pests	http://www.inspection.gc.ca/english/epet/epet.html	http://www.inspection.gc.ca/english/epet/epet.html	Website
7001	Center for Invasive Plant Management		Invasive plants USA	http://www.cimcenter.org/		Website
8002	Early Detection & Distribution Mapping System		distribution alien species, alien species Florida	www.fedaps.org/Florida	www.fedaps.org/databases/early_data.htm	Website
8004	Florida department of agriculture and consumer services		pest pathology, pest nursery, pest identification of pests	http://www.doacs.state.fl.us/plr/epet/epet/index.htm	http://www.doacs.state.fl.us/plr/epet/epet/index.htm	Website

Figure 7: Example of how the results are displayed for an Advanced search for pests in North America

15

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Both the basic and the advanced search procedures were tested using different machines with different hardware configurations (the oldest one was a 4-year-old personal computer) and Internet connections (xDSL, T1, T3). In every case, the registered response time was between 5 and 10 seconds, which is acceptable given the size of the database (number of fields and records).

3. The User's Manual for the web-based portal

A User's Manual was prepared that describes every functionality of the Prassis web-portal. Functionalities accessible by two types of users are described: Standard User and Power User. Both Standard and Power Users can view the database content, search the sources within the database (either through a basic or an advanced search feature), and perform a suitability evaluation of the sources. Power Users also can perform all the typical actions of a database management administrator (they can enter, modify, update, and delete sources).

4. The relevant Third Countries

Analyses concerning the Third Countries were particularly accurate for those Countries that are possible sources for pest introduction. For this reason, selecting the relevant Third Countries to be considered in the inventory was one of the priority tasks of the project. Relevant third Countries were determined based on the analysis of the flows of the commodities imported into Europe, i.e., a Country is relevant if it accounts for a significant proportion of the total amount of import into the EU of a commodity type.

Data on commodity flows were extracted from EUROSTAT as an average of the 5-year period 2003-2007 for the following four aggregates of interest for PRA: i) live trees and other plants, ii) edible vegetables, iii) wood and wood articles, and iv) total merchandise (as a proxy for the exchange of packaging materials). Data were collected as both 'quantity' (in Kg) and 'value' (in Euros). Based on these aggregates of interest, four lists of Third Countries were prepared. The first 15 Countries on each of lists were then selected based on the 'quantity' data. Although Iran, Iraq, Hong Kong, Kazakhstan, South Korea, and Libya were among the 15 major traders for total commodities, these Countries were not among the first 15 traders for the other categories; they therefore were not included in the final list because in these cases "total merchandise" would overestimate the import of wooden packaging material (unless the trade in petrol, oil, and minerals could be disaggregated from the EUROSTAT data).

For a better geographic coverage of the Pacific region, New Zealand, which was among the first 20 traders for edible vegetables and certain roots and tubers, was included. Also, Liechtenstein and Iceland were added to the list of Third Countries to complete the information on the EFTA-EEA countries.

A total of 34 Countries were finally selected by merging the four lists into one common list (Figure 8) and were considered for inventorying the relevant information sources.

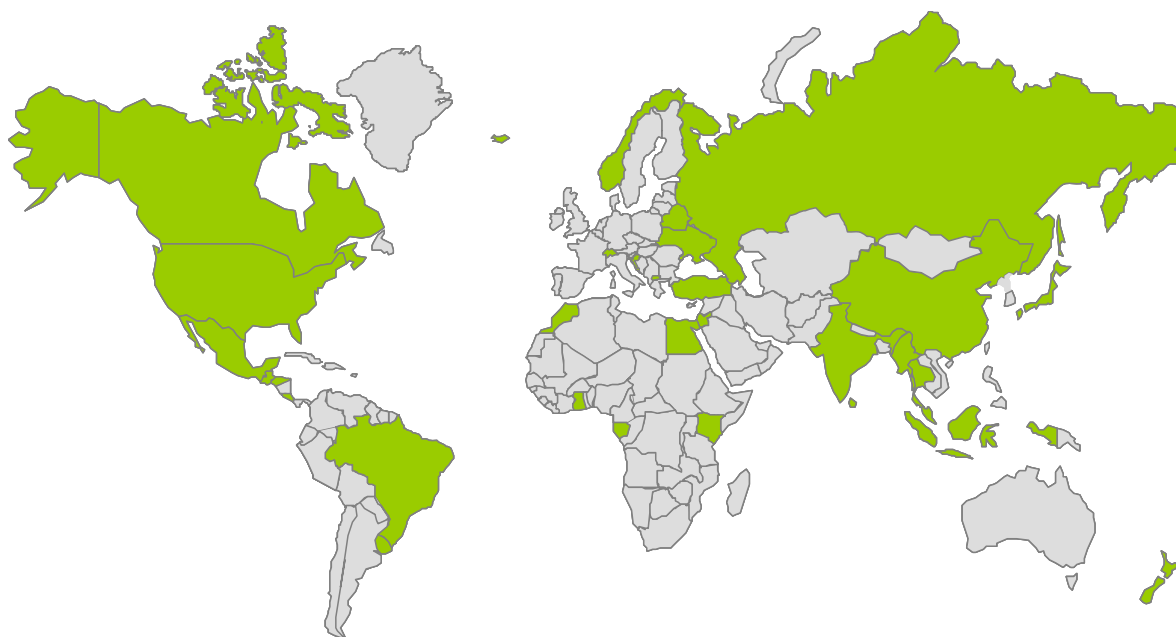


Figure 8: Map of the Third Countries considered in Prassis (in green)

5. The national information sources

To obtain all relevant information from national information sources, a structured questionnaire was prepared and sent officially, also on behalf of EFSA itself, to competent national institutions in all EU MSs. This questionnaire asked for information and databases potentially useful for the project and available at the national level (and even in the national language).

For this activity, a collaboration with the project Pratique was established. Pratique (acronym of Enhancements of Pest Risk Analysis Techniques) is a project supported by the European Commission's 7th Framework Programme for Research and Technological Development. Pratique addresses the three major challenges of PRA: i) to correct the lack of sufficient data for effective analysis of the risks posed by pests to the EU MSs; ii) to assess risk and management options in meaningful and reliable ways, taking into account uncertainty; iii) to ensure that the PRA process is efficient and practical for end-users (<https://secure.csl.gov.uk/pratique/index.cfm>). One activity of the Pratique project is to assemble the data sets required to construct PRAs valid for the EU by creating a detailed inventory structured according to each stage of the PRA procedure. Therefore, both projects aim to identify data sources needed for PRA in plant health, although with different targets, structures, and levels of details. To maximise the number of data sources analysed in both projects, Pratique and Prassis exchanged lists and general information on data sources.

A questionnaire was prepared that included all the information necessary for both projects. The information required by the questionnaire included scientific, statistic, and bibliographic sources with reference to pests, trade, tourism, crop, vegetation, soil, and climate, and also with reference to agricultural production (quantities and values). The questionnaire was sent by EFSA to the MS representatives at the EFSA Special Advisory Forum on Plant Health (PLH AF), while the applicant sent the questionnaire to the Ministries of Agriculture and Statistical Institutes of the EU MSs; 87 questionnaires were sent (Figure 9). The recipient institution sometimes signalled specific persons or other institutions to be contacted directly; in these cases, the questionnaire was sent again to the new contacts.

Ten Countries replied to the questionnaires sent by the EFSA PLH (Cyprus, Belgium, Denmark, Estonia, France, Greece, Ireland, Poland, Slovak Republic, and The Netherlands) and all 27 EU MSs replied to the questionnaires sent by Prassis; no information came from Switzerland, Norway, or Iceland (Figure 11), and 465 sources were collected in total. Germany, Sweden, Belgium, Poland, Slovak Republic, Finland, Denmark, and Estonia sent more than 20 sources each; Austria, Malta, Portugal, Spain, and UK sent two sources each (Figure 10).

Information sources concerning the European Countries were also obtained from the previously mentioned collaboration with Pratique. A total of 462 sources came from the 27 EU MSs, and 27 sources came from Switzerland (Figure 11). Several sources retrieved by Prassis were also found by Pratique, and vice versa, so that the total sources available for each Country was much lower than the sum of the data shown in Figures 10 and 11.

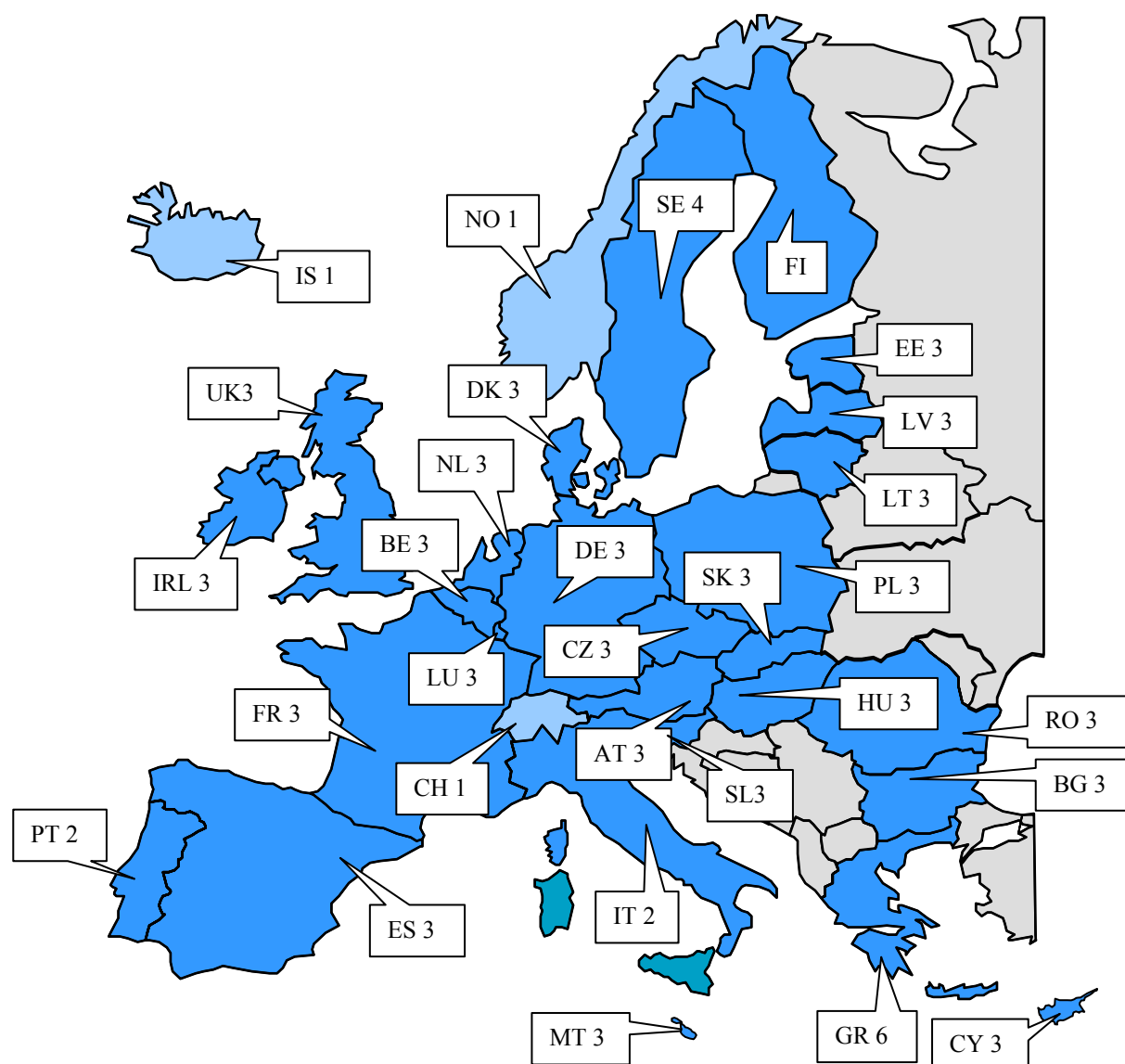


Figure 9: Number of questionnaire sent to the EU Member States (in blue) and other European Countries (in light blue)

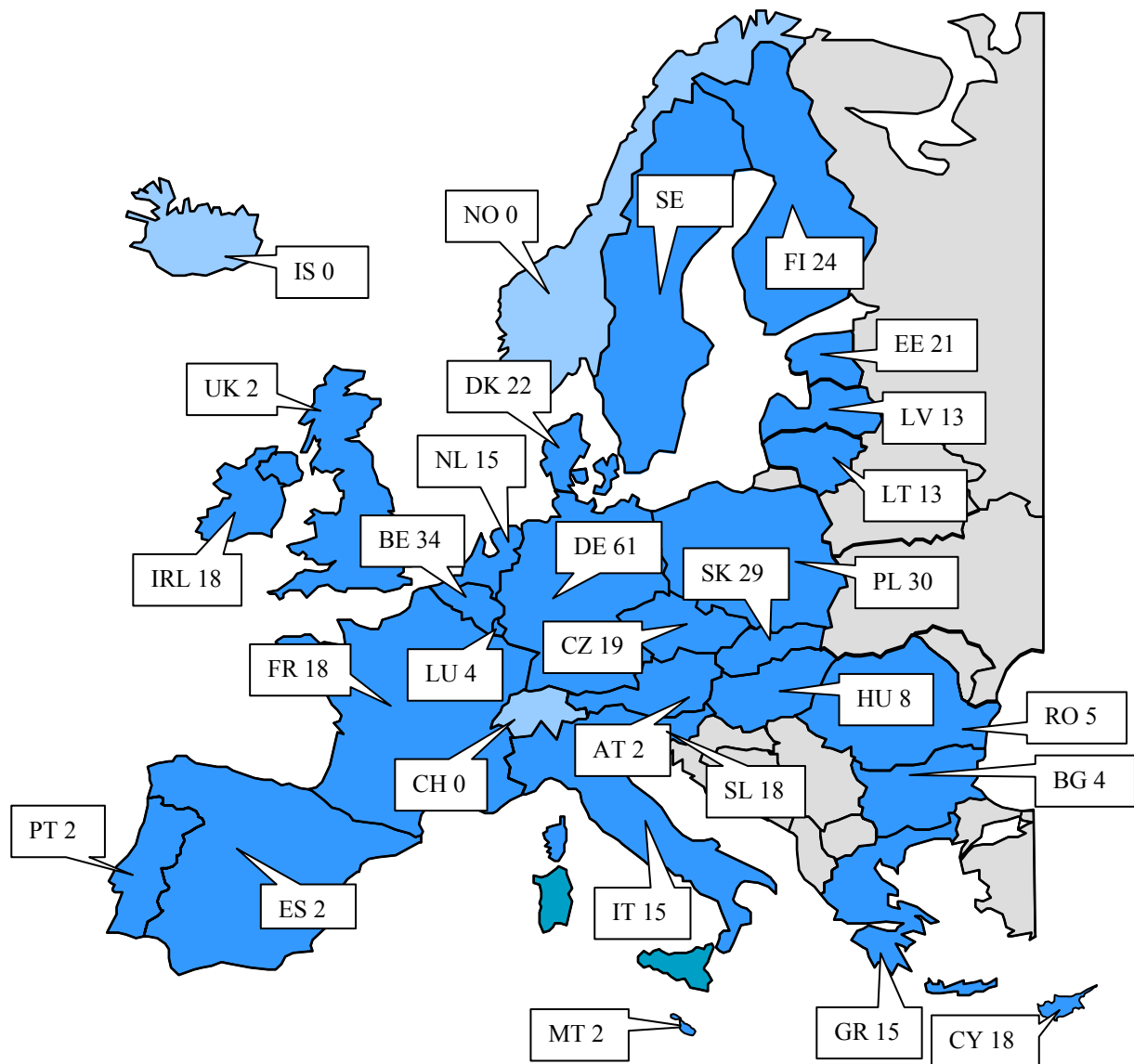


Figure 10: Number of information sources signalled by the EU Member States (in blue) and other European Countries (in light blue)

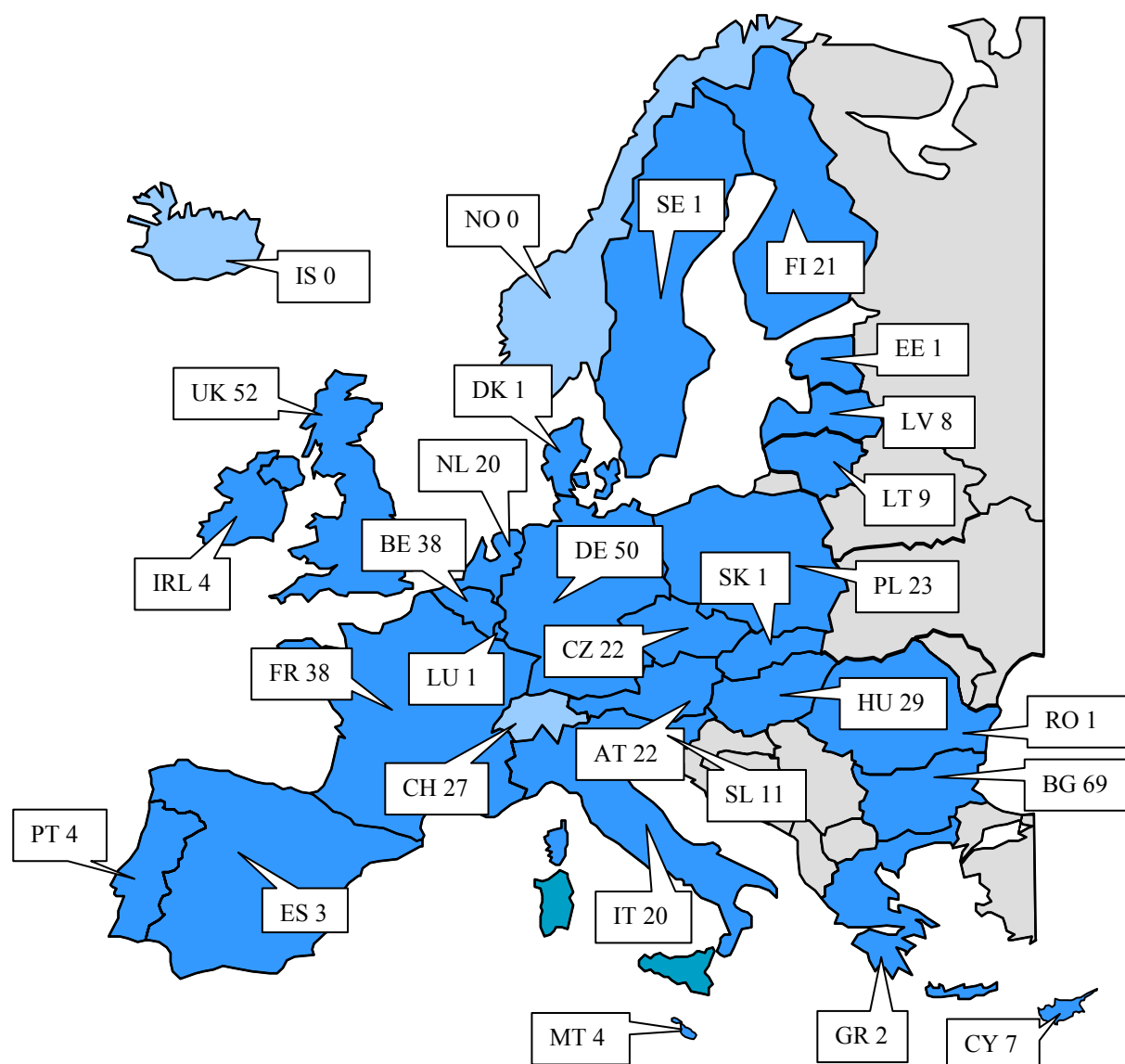


Figure 11: Number of information sources received from Pratique for the EU Member States (in blue) and other European Countries (in light blue)

6. The inventory of the information sources

The inventory concerns international and national key information and data sources necessary for performing the three steps of the pest risk assessment process for quarantine pests, according to guidance provided in the ISPM 11. As indicated by the project call, data sources on taxonomy and biological characteristics of the pests were not considered. The process of searching, selecting, and including these sources in the web-portal of Prassis is summarised in Figure 12.

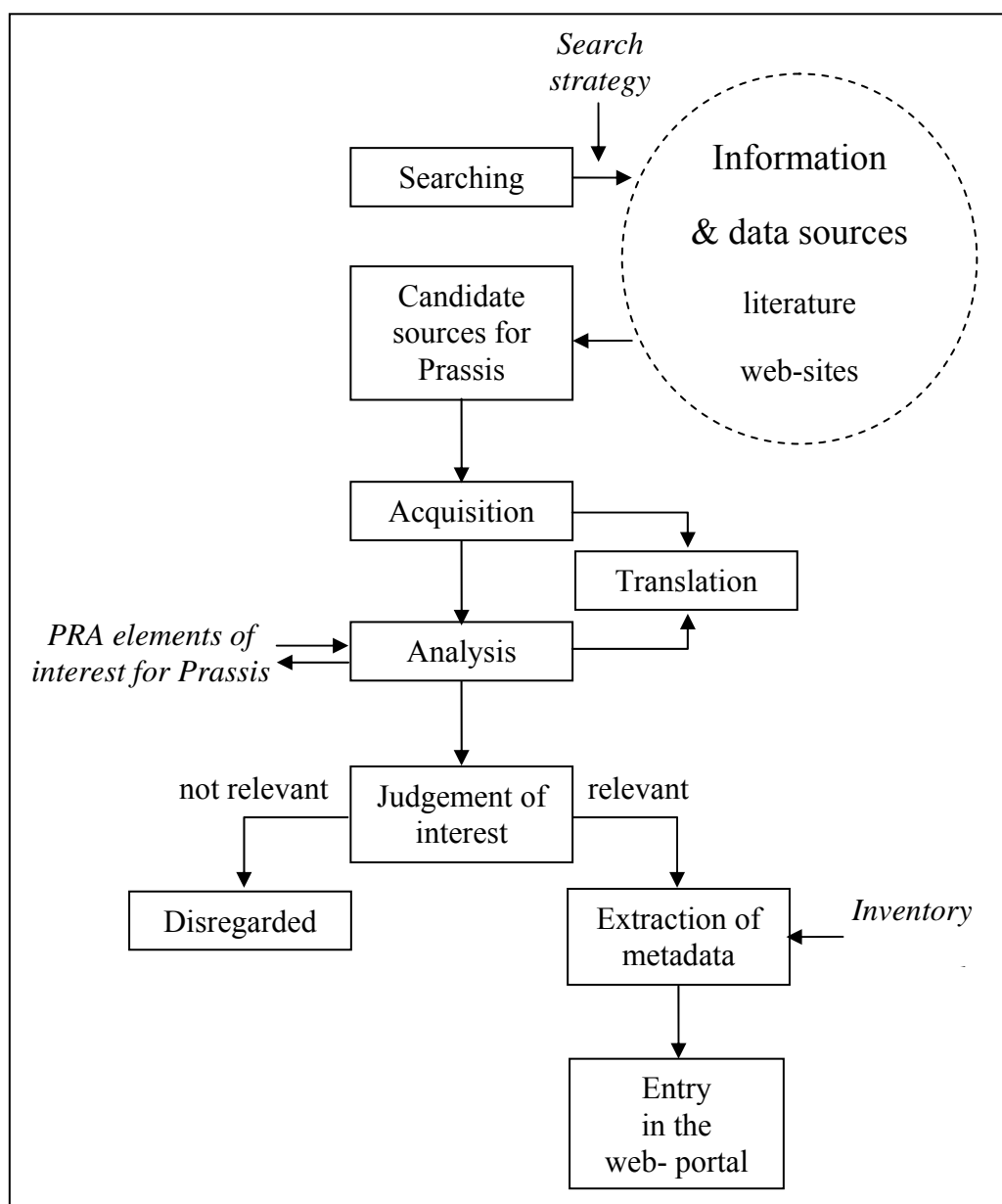


Figure 12: Process of searching, selecting, and including the relevant information sources in the Prassis web-portal

Information and data to be searched are listed in Table 1; these data were grouped in four categories: i) pests; ii) trade and tourism; iii) crops, vegetation, and soil; and iv) climate.

Table 1: PRA elements to be addressed in each WP

Elements of PRA	Data type	Area covered
Presence or absence in the PRA area	Pest status, distribution, and prevalence	EU MSs
Identification of pathways	Trade toward and within EU of plants and plant products. Trade toward and within EU of plant propagation material. Interceptions of illegal trade of plants and plant products. Tourist and passenger flows toward and within EU	EU MSs 3 rd Countries
Probability of the pest being associated with the pathway at origin	Pest status, distribution, and prevalence. Pest management and cultural techniques at place of origin Commercial techniques at place of origin	3 rd Countries 3 rd Countries
Probability of survival during transport or storage	Transport and storage conditions for different commodities (plants and plant products)	EU MSs 3 rd Countries
Probability of pest surviving existing management procedures	Interceptions of pests of plants and plant products	EU MSs 3 rd Countries
Probability of transfer to a suitable host	Intended use of commodities (plants and plant products) Crops and vegetation	EU MSs
Availability of suitable hosts, alternate hosts, and vectors in the PRA area	Crops and vegetation Presence and distribution of vectors	EU MSs
Suitability of environment	Climate Soil	EU MSs 3 rd Countries
Cultural practices and control measures	Cultural and crop protection practices	EU MSs
Spread after establishment	Presence and distribution of vectors Soil, crops, and vegetation	EU MSs

The domains for searching the sources were the literature (scientific and technical publications, proceedings of workshops/ congresses/ seminars), web-sites, databases, and the software available on the market. The following four facilities were used for searching the candidate sources for Prassis within these domains.

1. The World Wide Web (www), a system of interlinked hypertext documents accessed via the Internet. With a web browser (i.e., a software application that, on a user's prompt, retrieves and collects information resources and arranges and displays the resources on the user's computer screen), the user can view web pages that may contain text, images, videos, and other multimedia, and navigate between them using hyperlinks. When information is found using one of the search engines available on the Internet (such as AltaVista or InfoSeek), a directory of the Internet (such as Yahoo), or any of the services that rate www pages, it is necessary to know:
 - how the search engine decides the order in which it returns information requested;
 - that Internet search engines are not like the databases found in libraries: library databases include subject headings, abstracts, and other evaluative information

created by information professionals to make searching more accurate; in addition, library databases index more permanent and reliable information;

- how that search engine looks for information, and how often their information is updated.

For the Prassis inventory, we used Google as the web search engine. Reasons for using Google are listed below.

- **Web crawling:** Google, as well as other web search engines, stores information about many web pages, which it retrieves from the www itself. These pages are retrieved by a web crawler, an automated web browser that follows every link it sees.
- **Indexing:** the contents of each page are analyzed and indexed; data about web pages are then stored in an index database for use in later queries. Google not only indexes and caches web pages but also takes "snapshots" of other file types, which include PDF, Word documents, Excel spreadsheets, Flash SWF, plain text files, and others. Google stores all or part of the source page (referred to as a cache) as well as information about the web pages.
- **Searching:** the user queries the search engine by using key words, and the engine examines its index and provides a listing of best-matching web pages according to its criteria. Google supports the use of the boolean operators AND, OR, and NOT to narrow specify the search query. Google's search engine accepts queries as a simple text, and breaks up the user's text into a sequence of search terms, which will usually be words that are to occur in the results, but may also be phrases delimited by quotations marks (") or terms qualified with a prefix such as "+" (i.e., force inclusion of a word), "-" (i.e., search while excluding a word), "*" (i.e., wildcard operator to match any words between other specific words). Words, phrases, or terms may also be qualified one of several advanced operators, such as "site:" (an operator that restricts the results to those websites in the given domain; for instance the option "site:com" will search all domain URLs named with ".com"). Google searches the HTML coding inside a web page, not the screen appearance.
- **Search results:** the search results are presented in a list of hits (a result set). In general, the usefulness of a search engine depends on the relevance of the result sets it provides. While there may be millions of web pages that include a particular word or phrase, some pages will be more relevant or authoritative than others. Google achieves better results for many searches with an iterative algorithm called PageRank, which is patented and kept secret to avoid spammers from forcing their pages to the top. Google's algorithm produces a priority ranking of the web pages that match a given search string through a recursive score for web pages, based on the weighted sum of the PageRanks of the pages linking to them, on the premise that good or desirable pages are linked to more pages than are less desirable pages. The PageRank derives from human-generated links, and is thought to correlate well with human concepts of importance. In addition to PageRank, Google also uses other secret criteria for determining the ranking of pages on result lists.

2. The Library System of the UCSC, which includes the Libraries of Milan, Brescia, Piacenza, and Rome, and which has an efficient, centralized structure. The Library System is rich in books, pamphlets, and periodicals, and is constantly updated with collections of monographs and journals that are also in photographic and electronic form and are therefore accessible online (<http://www.unicatt.it/biblioteca/rivisteelettroniche>). The library has a collective electronic catalogue (OPAC, OnLine Public Access Catalogue, http://millennium.unicatt.it/search*eng) and a network system with other libraries that ensures: i) access and links to literature worldwide, ii) exchange of information and documents with other libraries, and iii) document delivery and electronic document delivery. The Library also has access to databanks on CD-ROM or online, through the Databank catalogue (<http://millennium.unicatt.it/search/y>). Since 1998, the University Library has been the trustee for the FAO (Food and Agriculture Organization of the United Nations) publications regarding Agricultural Sciences.
3. Replies to the questionnaires sent to the 27 EU MSs, as described in section 5. A total of 465 sources were retrieved; 41% of these sources concerned pests; 17% concerned crop, vegetation, and soils; 11% concerned climate; and 31% concerned statistics for trade, tourism, and crops (Figure 13).

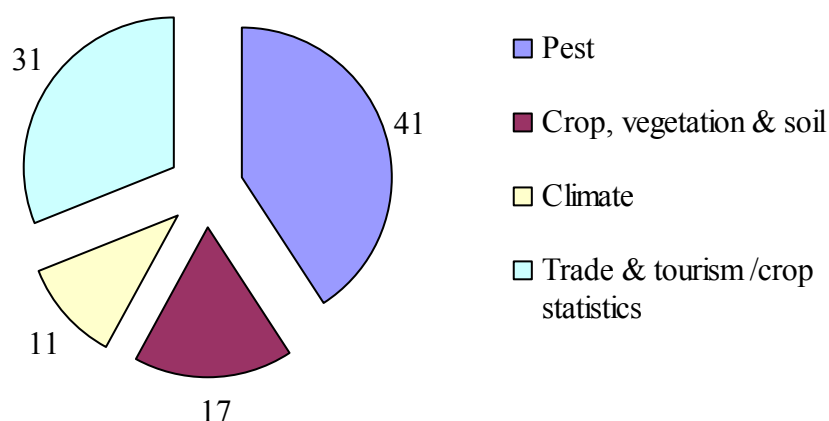


Figure 13: Subdivision of the information sources retrieved through the questionnaires sent to PLH Advisory Forum and institutions of the EU Member States

4. The list of information sources received within the collaboration established with Pratique, as described in section 2.5. This list was received on 14 July 2009 and included 867 sources in aggregate: 46% concerned pests, 27% crop and vegetation, 4% climate, 20% trade data, and 3% other miscellaneous sources (Figure 14).

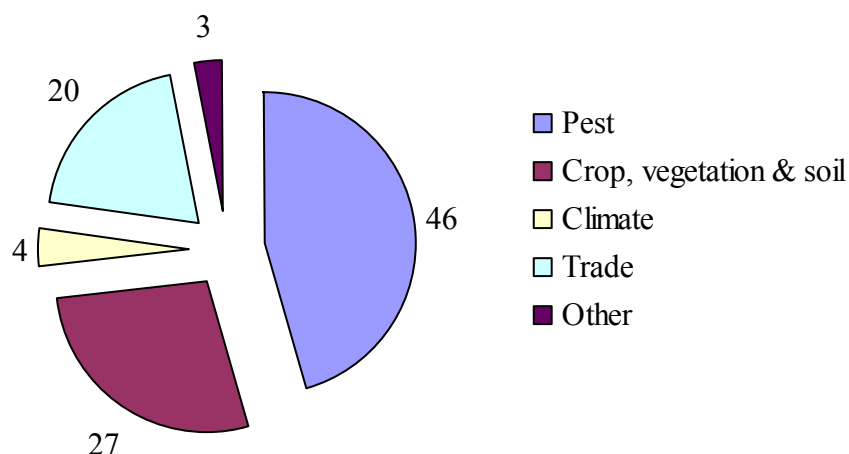


Figure 14: Subdivision of the information sources received from Pratique

Candidate sources were searched within these domains using different searching strategies. For the www and the electronic catalogues, the search was made through key words; different key words were used (usually in combination with the geographic area of interest) depending on the elements to be found. The information sources retrieved with this searching activity were considered as candidate sources when they met the arguments listed in Table 3 (based on what was inferred from a first analysis of the web pages or from abstracts of books, articles, etc.). All the sources coming from questionnaires or from Pratique were considered as candidate sources. All the candidate sources were:

- acquired or accessed via the www, depending on their nature;
- translated into English if written in languages other than English, France, Spanish, or Italian;
- carefully analysed for their relevance in relation to the elements listed in Table 3;
- re-analysed for extracting the metadata listed in the inventory protocol (see section 1) when considered of substantial interest for Prassis;
- entered into the web-portal.

In total, 533 sources were inserted into the web-based portal (Annex II). Because some sources contain information on different aspects of interest for PRA, there are more than 600 records of interest. An extract of the list of entries is shown in Figure 15 as an example.

ID	Source	Summary	Keywords	URL	Source	Type of source
633	La portal Agriculture	Begin data on crop (type, seed use, animal husbandry), broad agriculture, price and other agriculture topics	Bagum, crop inventory, crop production, agriculture	http://www.statbel.fgov.be/portal/agr/1.asp		Website
4581	WRI's Global Soil Map	This map illustrates the Common World Reference Soil Group as based on the FAO-Unesco Soil Map of the World	soil maps, World Reference Base	http://www.fao.org/ag/soag/soilinfo/soilmap.htm		Other
841	Department for Environment, Food and Rural Affairs	DEFRA is UK government department responsible for the environment, for food and farming, and for rural matters. Its profiles are to secure a healthy nature environment, a sustainable low-carbon economy, a thriving farming sector and a sustainable, healthy and secure food supply	UK, pest, management	http://www.defra.gov.uk/		Website
2381	A catalogue of alien plants in Ireland	The Catalogue is the first annotated checklist of the approximately 320 alien plant taxa recorded in Ireland, past and present.	alien invasive plants, Ireland		A CATALOGUE OF ALIEN PLANTS IN IRELAND, 2002. Occasional Papers No. 14. pp. 476	Book
2381	AFDUI - Agricultural land use in 2000	The dataset is part of the Information System of the JRC Project On the Impact of Greenhouse Gases in Agriculture, Forestry and Other Land Uses in Europe. The purpose of the agricultural land use map 2000 is to provide a series of homogeneous 1:100,000 scale maps of crop shares (percentage of area) for a time frame centered in the year 2000. Percentage of areas reported to the collection of different crops (crop shares) are estimated for clusters of 1 km ² pixels which are defined with respect to four characteristics: COORDINATE, Land Use Cover Map 2000 Class, Slope class, Soil (topsoil) class of the European Soil Database administrative regions (NUTS2). To improve environmental characteristics were used to develop a dynamic crop-share mode.		http://ou.jrc.ec.europa.eu/afdui/afdui.php		Database
121	AFDUI - Tree species distribution	The dataset is part of the Information System of the JRC Project On the Impact of Greenhouse Gases in Agriculture, Forestry and Other Land Uses in Europe. The data is composed of 27 maps with a resolution of 10m by 10m. 17 maps are giving the percentage of single tree species in a pixel over the forest area of Europe. 10 maps about the forest area where no species distribution was possible and 21 maps are giving the percentage of different non-forest classes in the single grid cells. To assess the accuracy of the tree species information the results were compared with national forest statistics. This information is provided with online maps or with a CD-Rom.	Europe, forest cover, tree species	http://ou.jrc.ec.europa.eu/afdui/afdui/afdui.asp		Database
2641	AFSCA - Agence fédérale pour la sécurité de la chaîne alimentaire	Begin Part Health Control regulations and specific control measures which have to be taken against vehicle cases. Begin with Health Control regulations. Pest production, service responsible for the control of pests.	Bagum food safety, phytosecurity control	http://www.favon.be/afscat/afscat/afscat/afscat.asp		Website
7581	APHIS Required Pest List	The Required Pest List (RPL) provides focus to APHIS in developing and evaluating the impact of commodities for pests and quarantine programs in the US. (partially) services for assist pests, methods for pest risk mitigation and pest eradication programs. The list may also include Commodity and the Title of Code of Federal Regulations, Parts 200-209. The list was updated to reflect latest economic commodities and pest status. APHIS continually detects (incoming) new pests through its inspection and survey activities. In addition, calls to change to pest status or new information, certain pests detected through inspection or survey may no longer be regulated. The pests on the list, unless a determination is made that they are no longer regulated. Therefore, the RPL does not include all pests for which APHIS would necessarily issue a permit.	USA, regulatory	http://www.aphis.usda.gov/wh/infotitles.htm		Website
6543	Advice Service Agronomy of Sely	Agronomy is a structural system that, through the combined use of meteorological, climatic and agronomic data, helps to the new availability of modern technological means (electronic, computer and electronic) can provide useful support for the management, agriculture, forestry and stockbreeding. The establishment and operation of services of agronomy have been encouraged and fostered by the European Union, since the economic progress fully in the new type of the new EU countries (CIS), in agriculture, areas one environment that, among other things, the development of production and dissemination of quality products, good management of natural resources and environmental protection, consumer protection, including through the reduction of pesticide residues in products (agro). Agronomy is therefore an essential tool for both production and economic quality products. From the perspective above, therefore be considered the establishment and the operational start of the meteorological Services Information Service (SIS).	Italy, Sely, agronomy service	http://www.ass.regione.sicilia.it/		Website
1401	Aerial Dispersal of Pathogens on the Global and Continental Scales and Its Impact on Plant Diseases	The article describe the mobility of diffusion of some pathogens with aerial way.	Phytophthora infestans, Crypthosporium graminicola, Helminthosporium, Fusarium, meteorological, phytochemical, pests		SCIENCE, VOL. 27, 20, JULY 2002	Journal article
5581	Agencia Estatal de Meteorología de España	With the entry into force of Law 22/2002 of July 18, from state agencies to improve public services, authorized the government to the creation of the State Meteorological Agency, whose Statute was approved by Royal Decree 1051 / 2003 of February 2, 2003 published in the Official Gazette of February 14. Agency under the Ministry of Environment and Rural and Marine Affairs through the Secretary of State for Climate Change, included in the scope of the Spanish National Meteorological Institute (INM), former manager of the general meteorological service. The Agency has the purpose of the State Agency of Meteorology is the development, organization and provision of meteorological services to the State and support the pursuit of other public policies and private activities, contributing to the safety of persons and property, and welfare and sustainable development of Spanish society.	Spain, climatological services, forecasts	http://www.aemet.es/en/portal		Website
6713	Agency of the Republic of Slovenia for Agricultural Markets and Rural Development	AAJRD is the only specialized service agency in Slovenia. It is fully accredited to program the most complex procedures at regards the accession of Europe in the field of agriculture, food-processing industry and rural development. The AAJRD ensures proper and timely payment of the approved funds to the beneficiaries and reports upon to governments and European institutions.		http://www.aarjrd.gov.si/		Database
8381	Agreement Austria (AMA)	Information to producer, farmer, consumer		http://www.ama.at/		Database
1221	Agreement Informations-Gesellschaft mbH (Germany)	Go ZMP. Data from commodities markets		http://www.markundgras.de		Website
874	Agricultural Institute of Slovenia	Agricultural Institute of Slovenia is a public research institution founded in 1958. The number of persons employed at the Institute is 150, of whom 72 are researchers.		http://www.iia.slovenska.si/		Website

Figure 15: Example of the list of the information sources entered into the Prassis web-portal

7. Quality evaluation of the information sources

Evaluation of the quality of the information contained in each source mainly concerned accuracy and reliability of the source itself (and of the information it contains), while appropriateness for the PRA process was evaluated in WP6 as suitability (section 8).

The search process included many types of resources, including books, articles, websites, and commercial software. Most print resources such as journals and books have usually been subjected to a filtering process (e.g., editing, peer review, library selection) and have already been evaluated. In contrast, information on the Internet is mostly unfiltered. The www offers information and data from all over the world. Because anyone can write a web page, documents with a wide range of quality, written by authors with a wide range of authority, are available on an even playing field. In addition, the popularity of the Internet makes it the perfect venue for commercial and socio-political publishing that frequently lacks objectivity.

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Because so much information is available, and because the creator of the information is often unknown, it is necessary to develop skills to evaluate information obtained from the www. Most of the literature on evaluating the reliability of the information found on the Internet recommends that Internet users: i) determine the origin of information: discover the author and the publisher and their credentials; ii) discover the date of the writing; iii) when possible, verify the information by finding another reputable source that provides similar information. EFSA members agreed, however, to simply include in the inventory protocol specific descriptive fields for comments on strengths and weaknesses of each data source (Figure 16). Examples are given in Figures 17 to 19.

Figure 16: Section of the web-portal for inserting comments on weaknesses and strengths of any source

Figure 17: Example of comments on weaknesses and strengths of a source on pests

Figure 18: Example of comments on weaknesses and strengths for a source on crop & vegetation

Figure 19: Example of comments on weaknesses and strengths for a source on climate

8. Suitability evaluation of the information sources

Suitability of the data sources included in the Prassis web-portal for the use in the risk assessment process by EFSA was evaluated based on the usefulness of the source in supporting the process. For this purpose, each step of PRA was considered separately. In particular, steps 2.1 to 2.3 (with the corresponding sub-steps) were considered, following the ISPM No. 11. For each of these steps, the web-portal makes possible the assignment of a subjective judgement, based on the following rating: 0 not useful, 1 useful, or 2 very useful. The web-portal also permits the entry of a comment (Figure 20).

Figure 20: Part of the section of the web-portal for suitability evaluation

These data are stored in a specific database, and a general index of judgement of any source is calculated as average, minimum, and maximum ratings; the number of records over which these statistics are calculated is also displayed. Suitability data can be accessed through the “Advanced search” procedure. The item of interest can be chosen from a menu (Figure 21), and the web-portal shows the list of sources that have been indicated as suitable for the specific item. The general index of judgement of any source of the list can be accessed as shown in Figure 22.

Figure 21: Part of the "Advanced search" procedure for accessing the suitability data

General information | Pests | Crops and vegetation | Climate | Soil | Trade | Tourism | GIS | Suitability | Advanced search

Logout

General information [Back] [Delete] [Apply Changes]

Suitability data

Average
2.2.2.2 Suitability of environment: 1.00

Min
2.2.2.2 Suitability of environment: 1

Max
2.2.2.2 Suitability of environment: 1

Number votes
2.2.2.2 Suitability of environment: 1

Comments
2.2.2.2 Suitability of environment: A global map of dominant WRB soils, useful for small scale analysis

ROSSI

Figure 22: Example of suitability judgement visualization

8.1. Knowledge gaps for PRA

Information sources entered into the web-portal were analysed to identify possible knowledge gaps for PRA. This analysis made it possible to detect gaps in the information presently included into the inventory, which partially covers all the information that could be potentially retrieved (see section 1.3 of Conclusions for a critical evaluation of the Prassis database).

Suitability for PRA of the information sources included in the Prassis database was evaluated by an advanced search concerning the five steps of the PRA listed by EFSA in the project call: i) pest categorization; ii) probability of entry of the pest; iii) probability of establishment; iv) probability of spread after establishment; v) assessment of potential consequences. Results are shown in Figure 23. Most information sources were judged suitable for pest categorization (469 sources); more than 300 sources were considered of interest for evaluating probabilities of entry and establishment, while a smaller number of sources were useful for assessing probability of spread and pests effects. In particular, data for analysing the direct and indirect pest effects (commercial, non-commercial, and environmental consequences) seem to be inadequate.

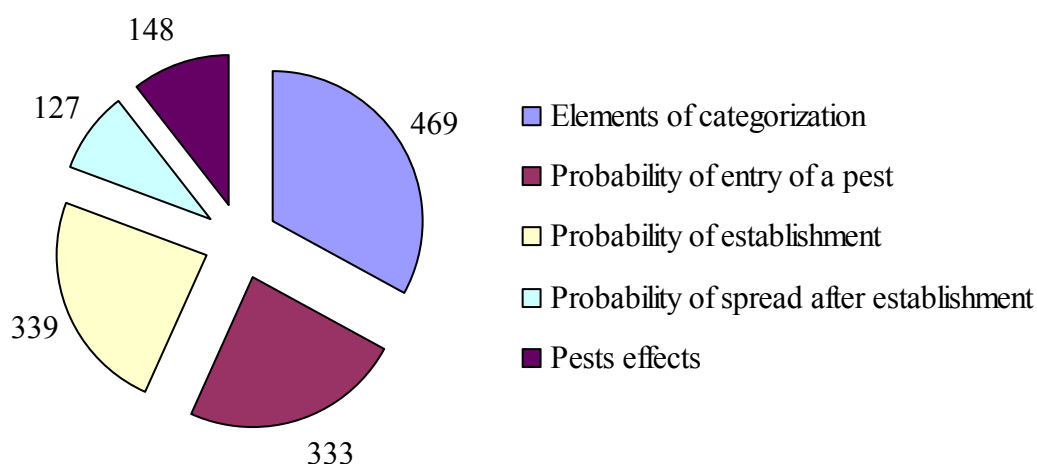


Figure 23: Numbers of information sources that have been considered suitable for performing five steps of PRA

The geographical coverage was evaluated by using the corresponding item in the advanced search procedure of the web-portal. National information sources in the 27 EU MSs are shown in Figure 24. The number of sources ranges from 19 (for Italy) to 1 (for Luxembourg) (Figure 25); 10 Countries have at least 10 sources and only five Countries have fewer than five sources; these Countries are Hungary, Lithuania, Malta, Romania, and Luxembourg. In general, there is no clear difference between long-standing and new EU MSs in the number of national sources retrieved; for instance, there are 10 sources for Estonia and five for The Netherlands. When these data are evaluated, it must be considered that sources that cover all the EU MSs or all the European Countries are not considered in this analysis, even though they are included in the database. The database includes 29 national sources for the other European Countries and 114 for third Countries. Variability among national information sources of third Countries is high (Figure 26). For instance, there are 37 sources for USA while no sources for Guatemala and Ghana; Egypt has 16 sources while all the other Countries have less than 10 sources. Also in this analysis, the sources that have worldwide coverage are not considered.

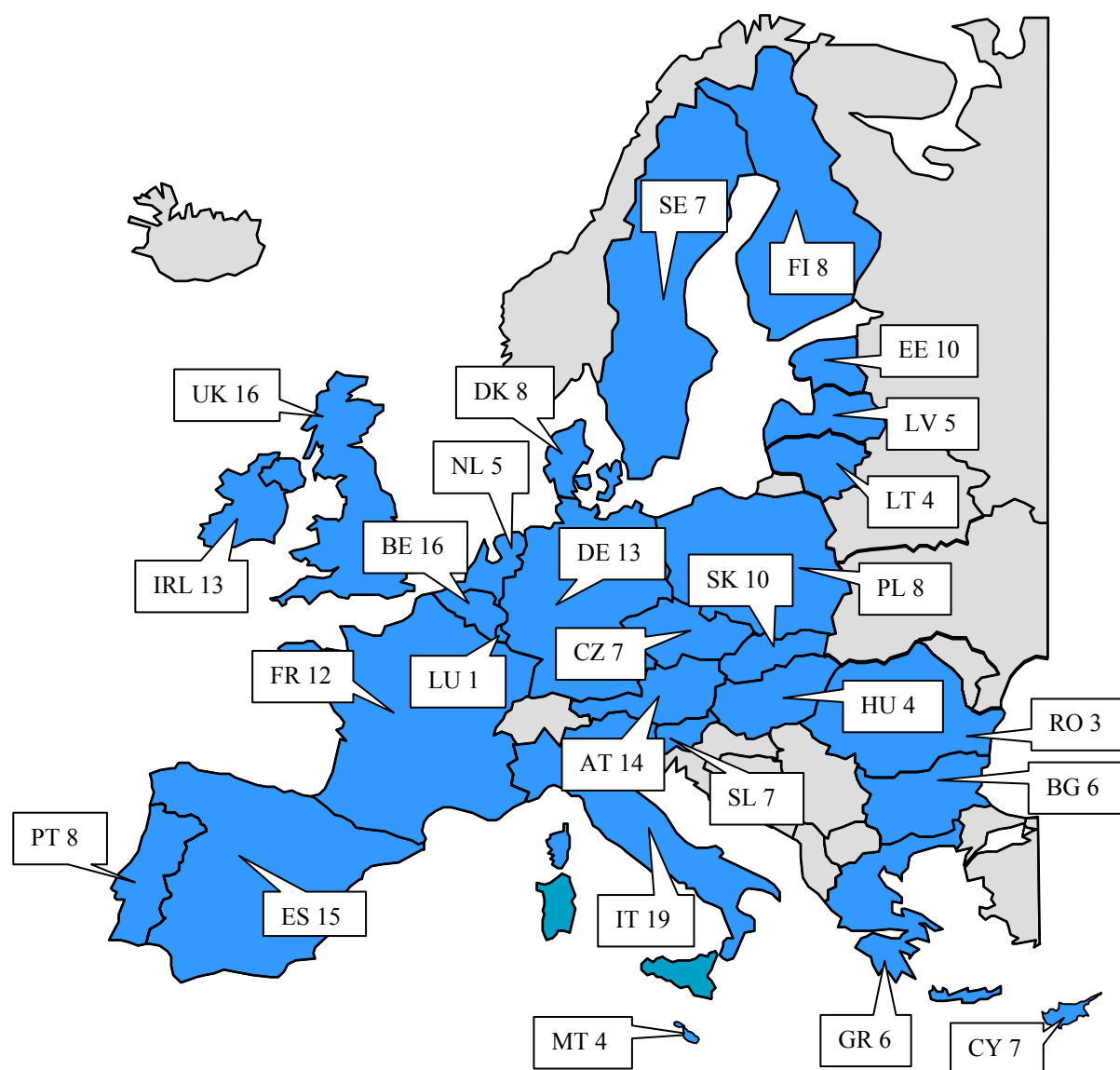


Figure 24: Numbers of information sources included into the Prassis database for the EU Member States (in blue)

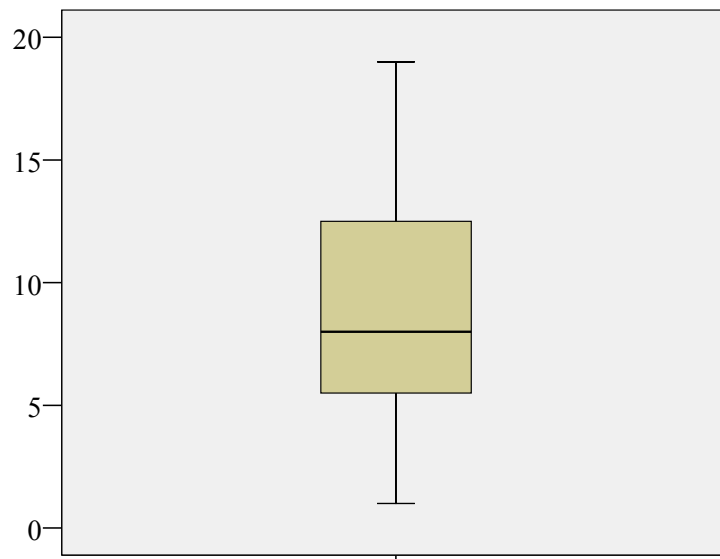


Figure 25: Frequency distribution of numbers of the national information sources in the 27 EU Member States

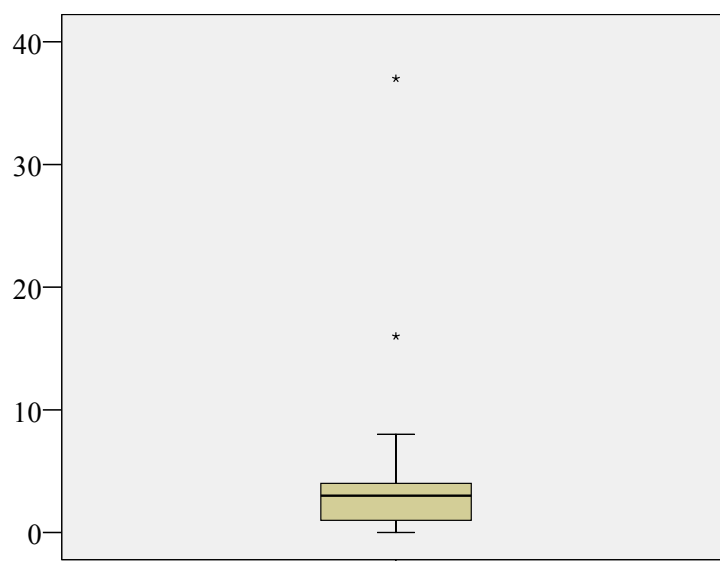


Figure 26: Frequency distribution of numbers of the national information sources in the third Countries considered

Topic coverage was evaluated by using the corresponding items in the advanced search procedure of the web-portal. Data sources on Pests cover 37% of total sources; other well-represented topics are Crops & vegetation (26% of sources), Trade (16%), and Climate (14%); Tourism and Soil are represented by 4% of sources each (Figure 27). When these data are evaluated, it must be considered that sources on trade, tourism, and soils frequently have a wide coverage (Europe or world); this is also true for some sources with vegetation data. In contrast, sources containing climate and weather data mainly concern single Countries, and all the considered Countries have at least one entry, with the exception of Finland, Poland, Latvia, Malta, Luxembourg, Guatemala, and Ghana. Sources concerning third Countries are mainly focused on Pests.

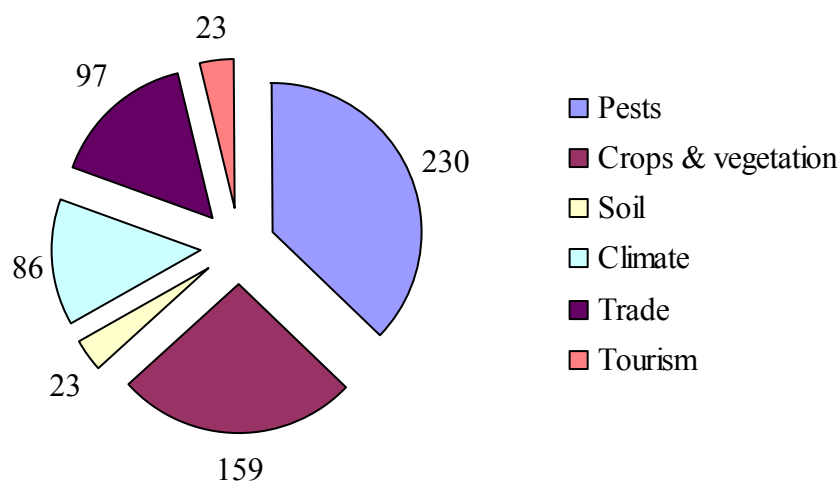


Figure 27: Distribution of numbers of the information sources included in the Prassis web-portal

CONCLUSIONS AND RECOMMENDATIONS

The aim of the Prassis project was to review and thoroughly inventory all international and national key information and data sources necessary to conduct the risk assessment of harmful organisms for the EC according to guidance provided in the ISPM No. 11.

This inventory should support the EFSA PLH Panel in providing independent scientific advice on the risk posed by those plant pests that can be considered harmful to plants and plant products or that can affect biodiversity in the EU. This work requires a very large amount of information on the pest itself, the situation in its current area of distribution, the pathways of movement across the world, the factors affecting its establishment, spread and impacts in the area under threat, and the measures available for its management. This information has not been readily available, in part because EU MSs still differ in how they collect and make available relevant national data.

The inventory should also provide suggestions for overcoming possible problems. For this purpose, the project results were critically evaluated so as to outline point of strength and of

weakness, as described in sections 1 and 2 below. Possible solutions are also provided in section 3.

1. Points of strength

Project results meet the objectives indicated in the project call and in the amendments requested by EFSA at the beginning of the project (see section 1). In particular, three points of strength of the project can be outlined: i) development of a structured, flexible, and transparent protocol for inventorying the information sources for PRA; ii) development of a user-friendly web-portal for storing, updating, evaluating, and searching the data sources within the inventory via the Internet; iii) production of a database containing more than 500 information sources.

1.1. The inventory protocol

A protocol was developed for inventorying the information and data sources (available in the literature, web-sites, databases, and software) that are required for performing the three steps of the pest risk assessment process for quarantine pests (according to guidance provided in the ISPM No. 11). The protocol supports a structured, transparent, and efficient inventorying. The protocol was designed so that the data sources inventoried can also be used in the future for risk assessment in other fields and / or with other databases. About 250 descriptors (metadata) were defined for describing the data sources; some of these metadata are mandatory while others are optional. Metadata for evaluation of data quality (strengths and weaknesses), accessibility for EFSA, and suitability for pest risk assessment were also included. For meeting the above-mentioned general purposes, some aspects with no or only minor relevance for PRA were considered with greater detail than strictly necessary. In addition, international standards and codes were used whenever possible.

1.2. The web-portal

The protocol was implemented in a user-friendly web-portal. The portal was designed for on-line entry of new data sources and for on-line modification or updating of the existing ones after the end of the project. The web-portal also makes it possible to search the data sources within the inventory by using both basic and advanced search procedures, and to summarize results in a clear and concise way. Technical requirements from EFSA IT were satisfied by using Oracle as the Data Base Management System and Oracle Application Express (Apex) as the programming language. The Prassis web-portal is accessible to authorized users by any computer equipped with a web browser. Two types of users can access the web-portal: Standard and Power Users. Both Standard and Power Users can view the database content, search sources, and perform a suitability evaluation of the sources. Power users can also perform all the typical actions of a database management administrator, i.e., they can enter, modify, update, and delete sources. A User's Manual was written that describes the functionality of the Prassis web-portal.

1.3. The database

A database was created containing international and national information and data sources. The inventory covers the 27 European MSs and third Countries, when relevant. Relevance of a third Country as a possible source for pest introduction was evaluated based on the quantity of plant-related commodities imported into Europe between 2003 and 2007 (EUROSTAT). These plant-related commodities included wood and articles of wood, as well as total merchandise as a proxy for the exchange of packaging materials. A total of 34 Countries were selected; for better geographic coverage of the Pacific region and of the EFTA-EEA countries, New Zealand, Liechtenstein, and Iceland were also included. Data sources were grouped into the following main categories: pests (i.e., any species, strain, or biotype of plant, animal, or pathogenic agent injurious to plants or plant products, ISPM No 5); crops and vegetation; soil; climate; and trade and tourism. Sources were searched in the literature (scientific and technical publications, proceedings of workshops/ congresses/ seminars), websites, databases, and the software available on the market. Four domains were accessed: i) the World Wide Web, using Google as the web search engine; ii) the Library System of the UCSC; iii) questionnaires sent to the representatives at the EFSA Special Advisory Forum on Plant Health and to competent institutions of the 27 EU MSs; and iv) the inventory shared with Pratique. About 500 sources were entered into the web-based portal; because some sources contain information on different aspects of PRA, there are more than 600 records of interest.

2. Points of weakness

In spite of the success of the Prassis project in producing an inventory protocol, a database and a web-portal, there are three main points of weakness. The first point concerns size and completeness of the database produced; the second point concerns the quality evaluation of the sources included into the inventory; the third point involves verification of the web-portal functionalities for practical use.

2.1. Database size and completeness

Based on the experience gained during the Prassis project, searching of information and data sources must be considered a “never-ending task”. Although more than 600 records of potential interest for PRA were entered into the inventory, the work is far from complete. The four main reasons why the Prassis inventory cannot be considered complete are listed below.

- 1) Many sources are very difficult (or nearly impossible) to find for an “external searcher”, i.e., a person not directly involved in solving a particular problem in a particular context or country. This is particularly true for those sources available at national or local levels, written in foreign languages, printed in reports not indexed by or available in international libraries (like journals, books, or conference papers), or not implemented in the www. The same is true for those databases without public access. In addition, a “general searching strategy” (i.e., one that is not focused on a well-defined topic) is time consuming and therefore expensive. For instance, on average less than 5% of the hits obtained from

Prassis searches of the www were considered candidate sources; after these candidate sources were analyzed, less than 1% were considered to be entries of interest for Prassis.

- 2) Information from competent institutions and experts directly involved in pest risk assessment should overcome the previous cited difficulties. The Prassis questionnaires sent to the Advisory Forum of EFSA and to several competent authorities in Europe provide some of this information. The strategy used by Pratique (Pratique obtains information from experts involved in this EU-funded research project) should also be useful. The time employed collecting national information sources made it impossible to analyze all the source received within the time frame of the project. In fact, the analysis of these information sources is also time consuming. These three lists must first be compared to eliminate the common sources. The remaining sources must be analysed based on the summary information provided by the expert who sent the source in order to eliminate the non pertinent sources. The resulting candidate sources must be acquired or accessed via the www, translated into English when written in foreign languages, carefully analysed for relevance in relation to the elements listed in the EFSA call, re-analysed for extracting the metadata listed in the inventory protocol, and finally entered into the web-portal. Although the time required for this process is highly variable but often substantial, the time used for entering the source into the web-portal metadata is relatively insignificant. An expert who is familiar with an information source requires only a short time to enter the source into the web-portal.
- 3) The inventory focused on the information sources concerning the 27 EU MSs and 34 relevant third Countries. Although the third Countries were selected based on their relevance as possible sources for pest introduction in Europe, a great number of Countries were not considered at all, especially Countries in South America, Africa, western and central Asia, and in the Pacific area.
- 4) The search strategy used in Prassis focused on retrieving information sources that cover an argument in a general way rather than on searching for sources about particular pests or host plants. For instance, information sources on invasive plants were searched using keywords like “invasive plants” or “alien plants” rather than searching for common or Latin names of the potential invasive plants for a particular area. This search strategy failed to find specific sources that may be of interest for performing a PRA on a particular invasive plant for a particular geographic area. As a consequence, a very large number of sources of potential interest for Prassis were not considered at all; this is particularly true for the literature sources in journals that are inventoried in the bibliographic databases like CAB Abstracts or Agris. On the other hand, following a target-specific search strategy would have been unmanageable given the time frame and resources allocated for the Prassis project. It should be noted, however, that as previously indicated for more general information sources, an expert who is performing a PRA for a particular pest and who has collected specific information and data for this purpose requires only a short time to enter these sources in the web-portal.

2.2. Quality evaluation of sources

Based on the experience gained during this project, evaluation of both accuracy and reliability of the sources included in the Prassis inventory (and of the information they contain) by simply describing “points of strength and weaknesses” seems to be too generic and vague; as a consequence, objectively filling in the correspondent fields is difficult .

Criteria and guidelines for overcoming this problem, which were presented to EFSA in a separate annex (Annex III), are based on the following elements : i) accuracy of the source information; ii) authority of the source; iii) objectivity of the source and the information; iv) timeliness or currency of the source information; and v) completeness of the source information. Acceptance of this proposal by EFSA would involve modifications of both inventory protocol and web-portal.

2.3. In-practice evaluation

Some functionalities of the web-portal were extensively evaluated during development of the project. In particular, procedures for entering new items and for modifying, updating, and deleting the existing ones were widely used and tested during the creation of the database. The ease-of-use of these procedures was also successfully tested by asking new users to use them either after a short training with an expert user or after reading the User’s Manual. Searching procedures (both basic and advanced) were tested for correctness, i.e., for the ability of the procedures to select all the items that fulfil the requests, as well as for the wait necessary for obtaining results.

In contrast, the web-portals ability to respond effectively to a wide range of practical searching strategies was not sufficiently tested. This kind of test is only possible by collecting judgements from a panel of external users involved in performing PRAs with the web-portal over time. Procedures for suitability evaluation also need to be tested.

3. Perspectives

The Prassis web-portal and connected database are useful and potent tools for finding the information and data required for pest risk assessment by EFSA. Nevertheless, the database should be enlarged and regularly updated. This need was recognized at the outset, and the web-portal was designed to facilitate the entry of new sources and the modification of previously entered ones by authorized users via the Internet. EFSA should identify people capable of increasing and maintaining the database, train these people in using the inventory protocol and the portal functionalities, and then give them a password for accessing the portal as power users.

On the other hand, some functionalities of the web-portal must be verified for practical use. For this purpose, it is recommended to EFSA to identify a panel of experts to simulate the use of the portal for some specific purposes (i.e., simulating some searches of information sources for particular pest risk assessments). EFSA should collect the comments of these experts (preferably by a structured questionnaire) and then modify the web-portal accordingly to improve its practical performance. The web-portal also needs maintenance and probably periodical revisions for meeting new needs or adding new functionalities; for this reason the

application was has been developed using the EFSA IT standards for databases and software to allow maintenance and revisions by the EFSA staff.

REFERENCES

- Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community, OJL 169, 10.7.2000, 112 pp.
- FAO (Food and Agriculture Organisation of the United Nations) 2007a. International standards for phytosanitary measures 1 to 29 (2007 edition). ISPM No. 2 Framework for pest risk analysis (2007), Rome, 27–41.
- FAO 2007b. International standards for phytosanitary measures 1 to 29 (2007 edition). ISPM No. 11 Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms (2004), Rome, 135–160.
- FAO 2009. International standards for phytosanitary measures 1 to 29 (2009 edition). ISPM No. 5 Glossary on phytosanitary terms (2009), Rome, 63–86.

GLOSSARY AND ABBREVIATIONS

Apex	Oracle Application Express
EFTA	European Free Trade Association
EC	European Commission
EEA	European Economic Area
EFSA	European Food Safety Authority
EU	European Union
IPPC	International Plant Protection Convention
ISPM	International Standards for Phytosanitary Measures
MS	Member State
PLH	Panel on Plant Health
PLH AF	EFSA Special Advisory Forum on Plant Health
PRA	Pest risk analysis
Prassis	Pest risk assessment in the European Community: inventory of data sources
Pratique	Enhancements of Pest Risk Analysis Techniques
UCSC	Università Cattolica del Sacro Cuore
www	World Wide Web

ANNEXES

- **ANNEX I – INVENTORY PROTOCOL**
- **ANNEX II – CRITERIA FOR EVALUATING DOCUMENTS WITH EMPHASIS FOR WEB PAGES**
- **ANNEX III – DATABASE: SUMMARY INFORMATION**

ANNEX I – INVENTORY PROTOCOL

A. Source information sheet

A.1 Source descriptors

This section is devoted to the complete reference of the source. Reference details are drawn following the standards defined by Commonwealth Agricultural Bureaux International (CABI) for the CAB Abstracts (<http://www.cabi.org/datapage.asp?iDocID=165>). Details are listed the following fields.

Source name: contains the complete original name of the source.

Acronym: a short acronym from the source or chosen by the operator who review the source.

ID Source: the identification number automatically associated with the reference by the web-portal.

Summary: a general presentation of the source entered by the operator.

Keywords / Descriptors: a list of keywords from the source as well as additional keywords, to be entered as words, comma delimited (e.g., *Xylella fastidiosa*, *Pierce disease*, *grapevine*, *distribution in USA*).

Type of source: the description of the type of source. Each source is assigned to one of the following categories (to be selected from a window menu).

Language of text: the language(s) of the original item (maximum five languages admitted). Languages are selected from a window menu containing items from ISO639-2.

Title: full title of the original item.

Abstract from the source: the original abstract from the source, if there is any.

Source (bibliographic citation): book title, conference title, date and location, journal title, year of publication, volume, issue and page numbers. These titles must be entered in full.

International Standard Book Number (ISBN): to be included only where applicable or available.

International Standard Serial Number (ISSN): to be included only where applicable or available.

Availability: if the source is readily available (yes or not) (see also Section A.6).

A.2 Chronology

This section contains information about relevant dates of the inventory activities, with the following fields.

Last access date: the date on which the source was contacted the last time (YYYY-MM-DD, according to ISO 8601).

Profile creation: the date on which the profile was completed (YYYY-MM-DD, automatically updated).

Profile modification: the date on which the profile was modified (YYYY-MM-DD, automatically updated).

A.3 Author/creator information

This part contains the full address of the author(s)/creator(s) of the book, article, website, software, database, etc. or the person to be contacted for any need about the source (i.e., corresponding author, creator of the website, responsible party for the database, etc.). Address details are drawn following WMO Core Metadata Profile ver. 0.3 and ISO11180.

Details are listed the following fields.

Author(s): lists the name(s) of all personal authors of the original item. To be entered as family name, initials of the name, comma delimited (e.g., *Rossi A, Bianchi B, Verdi C*).

Address of author: the organization and address where the work was done, not the author's present address if he or she has moved. If more than one organization was involved in the work, that of the first named author will be given.

Institution: name or official initials of organization.

City: city of the location.

Administrative area: state, province of the location.

Postal code: postal code (ZIP or other).

Country: country (ISO3166-1, -2).

Phone: telephone numbers at which the organization or individual may be contacted.

Fax: fax numbers at which the organization or individual may be contacted.

Email: email address at which the organization or individual may be contacted.

Online contact: on-line information that can be used to contact the individual or organization.

Hours service: time period when individuals can contact the organization or individual.

Contact instructions: supplemental instructions on how or when to contact the organization or individual.

A.4 Publisher/supplier information

This part contains the full address of the publisher/supplier of the source. Address details are drawn following WMO Core Metadata Profile ver. 0.3 and ISO11180. Details are listed for the following fields.

Publisher: lists the name(s) of the publisher (of a book, journal article, proceeding, report) or supplier (of a website, database, software) of the original item. To be entered as family name, initials of the name, comma delimited (e.g., *Rossi A, Bianchi B, Verdi C*).

Publisher type: indicate the kind of publisher/supplier of the source. Select the appropriate field from a window menu: institutional international, institutional national, institutional local, educational, private, other. If other then specify.

Address of publisher/supplier: the organization and address where the item was published.

Institution: name or official initials of organization.

City: city of the location.

Administrative area: state, province of the location.

Postal code: postal code (ZIP or other).

Country: country (ISO3166-1, -2).

Phone: telephone numbers at which the organization or individual may be contacted.

Fax: fax numbers at which the organization or individual may be contacted.

Email: email address at which the organization or individual may be contacted.

Online contact: on-line information that can be used to contact the individual or organization.

Hours service: time period when individuals can contact the organization or individual.

Contact instructions: supplemental instructions on how or when to contact the organization or individual.

A.5 Website/database/software descriptors

In this section further information on sources like websites, databases and software is listed. Details are drawn following ROR (Resources of a Resource) (<http://www.rorweb.com/spec.htm>) and refer to properties of the Dublin Core vocabulary (<http://dublincore.org/>).

Uniform Resource Locator (URL): URL of the source if applicable.

Documentation URL: URL of documentation about the source.

Format: mime format of the source (e.g., text/html, video/mpeg, etc.).

Size (website): size of the source if applicable (in kilobytes).

Size (database): number of records in the database if applicable.

Creation date: creation date of the source, to be entered as YYYY-MM-DD according to ISO8601.

Last update: last update date of the resource to be entered as YYYY-MM-DD.

Updating: frequency with which modifications and deletions are made to the data after it is produced. The timing of updating must be selected in a window menu created according to WMO Core Metadata Profile ver. 0.3.

A.6 Accessibility of information

This section contains details on the availability of the source.

Free: the source is freely accessible or not (yes/no)

Registration: a free registration to accede the source is requested (yes/no).

Subscription: a subscription to accede the source is requested (yes/no).

Purchase: the source must be purchased (yes/no).

Other: specify any other form of availability.

Details on accessibility: specify order number, price or other information that help to retrieve the original item.

In EFSA library: if the source is present in the EFSA's library (yes/no).

Address in the EFSA library: specify the address or the link to the document in the EFSA's library, if available.

A.7 Subject

This section contains a list of the subject(s) of the source. The operator must indicate the subject(s) the source refers to, with possible comments.

Pests: the source contains information about pests (yes/no; if yes go to section B).

Crops and vegetation: the source contains information about host plants, both as crops and natural vegetation (yes/no; if yes go to section C).

Climate: the source concerns weather and / or climate (yes/no; if yes go to section D).

Soil: the source contain information about soils (yes/no; if yes go to section E).

Trade: the source contains information about import and / or export trade (yes/no; if yes go to section F).

Tourism: the source contains information about tourism flows (yes/no; if yes go to section G).

B. Pest information sheet

B.1 Coverage

This section contains information about geographical and temporal coverage of the data source, with the following details.

Geographical coverage: the geographic area covered by the data source; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

Spatial resolution: the details on the spatial resolution of the data; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

GIS data: the source contains or not GIS data (if yes go to Section H).

Temporal coverage: temporal coverage of the data contained into the source, from the date of first record to the last update or release date (for sources that are not regularly updated). Dates are entered as YYYY-MM-DD.

B.2 Pest(s) considered

This section contains information about the pest(s) considered in the source. Pests are grouped as follows:

alien invasive plants,

insects,

mites,

nematodes,

fungi / chromista,

bacteria / fastidious bacteria,

phytoplasmas / MLOs (Mycoplasma Like Organisms),

viruses / viroids / VLOs (Virus Like Organisms),

other (specify).

When the source is specific for one or few pests (or botanical groups of pests), these pests are listed using the EPPO codes.

B.3 Pest(s) descriptors

This section contains the detail on the pest's data contained in the source, grouped in the following main arguments.

Presence / absence: the source contains data on whether the pest is present or absent in the covered area; a field makes it possible to insert whether the data are official or not.

Prevalence: the source contains quantitative data on the presence of the pest in the covered area (*e.g., the surface area interested by the presence of a pest, frequency of the crops affected, etc.*).

Density / incidence / severity: the source contains quantitative data on the abundance of the pest in the covered area (*e.g., dimension of the pest population, incidence or severity of the pest in the affected crops, etc.*).

Other: specify any other aspect different from the previous ones.

B.4 Pest(s) damages

This section contains the detail on data about the damages caused by the pest(s) considered in the source, grouped in the following main arguments.

Yield losses: the source contains quantitative data on yield losses caused by the pest(s) considered (*e.g., tons of crop product lost, percent reduction in crop yield, etc.*).

Quality losses: the source contains quantitative data on quality losses caused by the pest(s) considered (*e.g., reduction in the protein content, reduction in technological properties, etc.*).

Economic losses: the source contains quantitative data on economic losses caused by the pest(s) considered (*e.g., reduction of income for the growers, reduction of total crop value, etc.*).

Environmental impact: the source contains quantitative data on the environmental impact of the pest(s) considered (*e.g., reduction of biodiversity, changes in the ecosystem, etc.*).

Social impact: the source contains quantitative data on the social impact of the pest(s) considered (*e.g., reduction in job units, etc.*).

Impact on exports: the source contains quantitative data on the impact of the pest(s) considered on the export of plants or plant products.

Other: specify any other aspect different from the previous ones.

B.5 Pest(s) management

This section contains the detail on information / data about pest management actions, grouped in the following main arguments.

Regulatory status: whether the pest is considered or not a regulated pest according to the ISPM No. 5.

Good agricultural practices: the source contains protocols / standards concerning agricultural practices applied to control the pest(s) considered.

IPM guidelines: the source contains guidelines for Integrated Pest Management applied to control the pest(s) considered.

Control measures: the source contains data / information on type and efficacy of the control measures used against the pest(s) considered.

Biological control: the source contains data / information on type and efficacy of the biocontrol agents / natural products used against the pest(s) considered, or guidelines for organic agriculture.

Control costs: the source contains quantitative data on direct / indirect costs for controlling the pest(s) considered.

Other: specify any other aspect different from the previous ones.

B.6 Comments and remarks

This section contain free fields for inserting:

how data are shown (*e.g., fact sheets, tables, graph, maps, etc.*),

comments or remarks, additional information,

points of weakness of the source,

points of strength of the source.

C. Crop and vegetation information sheet

C.1 Coverage

This section contains information about geographical and temporal coverage of the data source, with the following details.

Geographical coverage: the geographic area covered by the data source; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

Spatial resolution: the details on the spatial resolution of the data; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

GIS data: the source contains or not GIS data (if yes go to Section H).

Temporal coverage: temporal coverage of the data contained into the source, from the date of first record to last update or release date (for sources that are not regularly updated). Dates are entered as YYYY-MM-DD.

C.2 Crop(s) and vegetation type(s) considered

This section contains information about plant(s) and / or vegetation type(s) considered in the source.

Crops are grouped based on the land cover nomenclature of the LUCAS project concerning CROPLAND, as follows:

- cereals,
- root crops,
- non permanent industrial crops,
- dry pulses, vegetables, and flowers,
- temporary, artificial pastures,
- fallow lands,
- permanent crops: fruit trees, berries,
- other permanent crops,
- forests,
- other (specify).

Each category contains the appropriate crop plants, following the LUCAS codification with the correspondent EPPO codes.

Land use: the function and the actual purpose for which the land is currently being used (<http://www.unec.org/stats/documents/1999/10/env/13.e.pdf>); specify the land use classification system used.

Land cover: the observed (bio)physical cover on the earth's surface irrespective of its uses (<http://www.unec.org/stats/documents/1999/10/env/13.e.pdf>); specify the land cover classification system used.

(Agro)Ecological zones: the land resource units, defined in terms of climate, landform and soils, and/or land cover, and having a specific range of potentials and constraints for land use (<http://www.fao.org/ag/agl/agll/prtaez.stm>); specify the classification system used.

C.3 Crop(s) and vegetation type(s) descriptors

This section contains the detail on the kind of data contained in the source, grouped in the following main arguments.

Presence / absence: the source contains data on whether the plant or the vegetation type is present or absent in the covered area.

Distribution: the source contains quantitative data on the distribution of the plant in the covered area.

Other: specify any other aspect different from the previous ones.

C.4 Comments and remarks

This section contain free fields for inserting:

how data are shown (e.g., *fact sheets, tables, graph, maps, etc.*),

comments or remarks, additional information,

points of weakness of the source,

points of strength of the source.

D. Climate information sheet

D.1 Coverage

This section contains information about geographical and temporal coverage of the data source, with the following details.

Geographical coverage: the geographic area covered by the data source; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

Spatial resolution: the details on the spatial resolution of the data; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

GIS data: the source contains or not GIS data (if yes go to Section H).

Temporal coverage: temporal coverage of the data contained into the source, from the date of first record to last update or release date (for sources that are not regularly updated). Dates are entered as YYYY-MM-DD.

D.2 Kind of items

This section contains information about the kind of station(s) used for collecting weather data available in the source. Items are grouped as follows:

synoptic,

agrometeorological,

hydrological,

meteo radar,

satellite,

other (specify)

For each kind of item the following information has to be entered, when available.

Number of stations: the total number of station for which data are available.

Temporal coverage: the period of time over which data are available, from YYYY to YYYY or today.

Completeness of the data: a judgement by visual inspection of how complete is the whole data set, using the following scale: 1 = sporadic (<50% of data); 2 = incomplete (<90%); 3 = complete (≥90%)

Steadiness of the data: a judgement by visual inspection of discontinuity found in the data time series (e.g., *discontinuity for some years or months*), using the following scale: 1 = sporadic (<50% of period covered); 2 = incomplete (<90%); 3 = complete (≥90%)

D.3 Meteo variables

This section contains information about the meteorological variables for which data are available, with the following options:

air temperature,
soil temperature,
air humidity,
soil humidity,
precipitation,
leaf wetness,
atmospheric pressure,
sun radiation,
wind speed,
wind direction,
snow presence,
other (to be specified).

For each variable, the following information has to be entered, when available.

Measurement time: the time step at which the variable is available, according to WMO Data Frequency Code.

Sensor type(s): the kind of sensor(s) used, the unit of measure, any other available information.

D.4 Comments and remarks

This section contain free fields for inserting:

how data are shown (*e.g., fact sheets, tables, graph, maps, etc.*),
comments or remarks, additional information,
points of weakness of the source,
points of strength of the source.

E. Soil information sheet

E.1 Coverage

This section contains information about geographical and temporal coverage of the data source, with the following details.

Geographical coverage: the geographic area covered by the data source; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

Spatial resolution: the details on the spatial resolution of the data; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

GIS data: the source contains or not GIS data (if yes go to Section H).

Temporal coverage: temporal coverage of the data contained into the source, from the date of first record to last update or release date (for sources that are not regularly updated). Dates are entered as YYYY-MM-DD.

E.2 Soil descriptors

This section contains information about the soil descriptors considered in the source. Many soil attributes can be considered (*e.g., morphology, texture, water regime, degradation, land capability, etc.*) (Guidelines for soil description, FAO 2006) and many types of classification systems are available (http://clic.cses.vt.edu/icomanth/02-AS_Classification.pdf).

The following field is considered, to be filled taking into account this variability:

Soil classification: the soil classification criterion used in the data source; specify the classification system used (*e.g., USDA Soil Taxonomy, World Reference Base for Soil Resources (FAO), Soil Geographical Data Base of Europe, etc.*) and specify the classes considered, when appropriate.

E.3 Soil distribution

This section contains the detail on how the soil distribution data are shown. The following field is considered:

Distribution: the source contains data (*e.g., tables, ARC/Info Export files, etc.*) or maps on the surface area occupied by each type of soil.

E.4 Comments and remarks

This section contain free fields for inserting:

how data are shown (*e.g., fact sheets, tables, graph, maps, etc.*),
comments or remarks, additional information,
points of weakness of the source,
points of strength of the source.

F. Trade information sheet

F.1 Coverage

This section contains information about geographical and temporal coverage of the data source, with the following details.

Geographical coverage: the geographic area covered by the data source; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

Spatial resolution (declaring subject): the details on the spatial resolution of the data in the Country of the declaring subject; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

Spatial resolution (trading partner): the details on the spatial resolution of the data in the trading Country; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

GIS data: the source contains or not GIS data (if yes go to Section H).

Temporal coverage: temporal coverage of the data contained into the source, from the date of first record to last update or release date (for sources that are not regularly updated). Dates are entered as YYYY-MM-DD.

F.2 Commodity(ies) considered

This section contains information about the commodities considered in the source. The following fields are considered:

Commodity(ies): the commodities are listed based on the Eurostat codification.

Trade flows: the details on the import – export flows of the commodities, with the following fields:

Import – quantity

Import – value (specify the currency)

Export – quantity

Export – value (specify the currency)

Periodicity of data: the time step at which the trade flows are available (use the appropriate codes of the WMO Data Frequency Code).

F.3 Comments and remarks

This section contain free fields for inserting:

how data are shown (e.g., *fact sheets, tables, graph, maps, etc.*),

comments or remarks, additional information,

points of weakness of the source,

points of strength of the source.

G. Tourism information sheet

G.1 Coverage

This section contains information about geographical and temporal coverage of the data source, with the following details.

Geographical coverage: the geographic area covered by the data source; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

Spatial resolution (declaring subject): the details on the spatial resolution of the data in the country of the declaring subject; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

Spatial resolution (country of origin): the details on the spatial resolution of the data in the country of origin of the incoming people; names of the geographic areas are listed using the ISO3166-1 and 3166-2 codes, when appropriate.

GIS data: the source contains or not GIS data (if yes go to Section H).

Temporal coverage: temporal coverage of the data contained into the source, from the date of first record to last update or release date (for sources that are not regularly updated). Dates are entered as YYYY-MM-DD.

G.2 Flows available

This section contains quantitative information about the flows of the incoming people. The following fields are considered:

Flows:

Total number of incoming people,

Total number of incoming people by origin,

Total number of incoming people by kind of transportation,

Total number of incoming people by kind of transportation AND origin.

Periodicity of data: the time step at which the tourism flows are available (use the appropriate codes of the WMO Data Frequency Code).

G.3 Comments and remarks

This section contain free fields for inserting:

how data are shown (e.g., *fact sheets, tables, graph, maps, etc.*),

comments or remarks, additional information,

points of weakness of the source,

points of strength of the source.

H. GIS information sheet

This section contains information about GIS-data or original geodata, in this context all data sets containing geographical coordinates. Firstly commonly know GIS data formats e.g. shapefile, Arc Coverage, Geodatabase, SDE database, geotiff file, imagine-file and vpf; secondly other files which can contain location information (points) such as xls, dBASE file, access database, text files.

Metadata form mapped to ISO19115 are used as indicated in EEA metadata form for spatial datasets (GIS data) & EEA Metadata Standard for Geographic Information (EEA-MSGI v.1.1) (http://www.eionet.europa.eu/gis/docs/EEA_metadataform_GISv1.2.doc)

The following fields are considered.

Reference system: the definition of the reference system used for the dataset

Name: name of reference system

Datum: identity of the datum

Name: name of datum

Ellipsoid: identity of the ellipsoid

Name: name of ellipsoid

Semi-major axis: radius of the equatorial axis of the ellipsoid

Axis units: units of the semi-major axis

Flattening ratio: ratio of the difference between the equatorial and polar radii of the ellipsoid to the equatorial radius when the numerator is set to 1

Projection: identity of the projection

Name: name of projection

Zone: unique identifier for grid zone

Standard parallel: line of constant latitude at which the surface of Earth and the plane or developable surface intersect

Longitude of central meridian: line of longitude at the centre of a map projection generally used as the basis for constructing the projection

Latitude of projection origin: latitude chosen as the origin of rectangular coordinates for a map projection

False easting: value added to all “x” values in the rectangular coordinates for a map projection. This value frequently is assigned to eliminate negative numbers. Expressed in the unit of measure identified in planar coordinate units

False northing: value added to all “y” values in the rectangular coordinates for a map projection. This value frequently is assigned to eliminate negative numbers. Expressed in the unit of measure identified in planar coordinate units

False easting northing units: units of false northing and false easting

Scale factor at equator: ratio between physical distance and corresponding map distance, along the equator

Longitude of projection centre: longitude of the point of projection for azimuthal projections

Latitude of projection centre: latitude of the point of projection for azimuthal projections

Other dataset information: other aspects explaining the dataset

Language: language used within the dataset

Format name: name of the used exchange format for the dataset

Format version: version of the used exchange format for the dataset

Methodology description: general explanation of the data producer’s knowledge about how the geometry was constructed/derived and how the attribute information being part of the dataset was generated.

Changes: description of the changes since last version of the dataset

Process steps: information about the event in the creation process of the dataset

Description: description of the process step including related parameters or tolerance

Source data reference title: name of the resource used in process step

Source data reference date: date of the resource used in process step

Scale: gives a rough value of accuracy of the dataset; e.g. 2500000 means dataset has an accuracy suitable for use at scale 1:2.5 million at best

Geographic accuracy: geographic accuracy of location, ground distance as an value in meters

Geographic box: geographic position bounding box of the dataset

West bound longitude: Western-most coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east)

East bound longitude: Eastern-most coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east)

South bound latitude: Southern-most coordinate of the limit of the dataset extent, expressed in latitude in decimal degrees (positive north)

North bound latitude: Northern-most coordinate of the limit of the dataset extent, expressed in latitude in decimal degrees (positive north).

ANNEX II – CRITERIA FOR EVALUATING DOCUMENTS WITH EMPHASIS FOR WEB PAGES

Criteria	What to consider	Guidelines
<u>Accuracy</u> describes information that is factually irrefutable and complete.	Who is the author of the document? Is the author qualified to write the document? Does the author list his/her occupation, years of experience, position, education, or other credentials? Can the author be contacted? Is the author the original creator of the information?	Analyse credentials listed for the authors. Look for other publications by the author or publisher Make sure author provides e-mail or a contact address/phone number. Try to check accuracy against other resources, or by checking some information about which you have special knowledge. Sometimes it helps to search the author's name in a general web search engine like Google.
<u>Authority</u> refers to the expertise or recognized official status of a source.	What institution (company, organization, government, university, etc.) or Internet provider supports the information? What is the domain of the document? Does this Web page actually reside in an individual's personal Internet account, rather than being part of an official Web site? Can the publisher be contacted? Does the publisher list his/her qualifications? Does publisher appear to exercise quality control over the information appearing under its name? Can the relationship of the author and the publisher/provider be	Check URL domain where document is published. Consider the editing and publishing policy of the source. Establish if it is peer-reviewed or it check information before publishing. Read the "about us" section. Examine links to and from other Web sites. Check if the document resides on the Web server of an organization that has a clear stake in the issue at hand: - if you are looking at a corporate Web site, assume that the information on the corporation will present it in the most positive light; - if you are looking at products produced and sold by that corporation, remember: you are looking at an advertisement; - if you are reading about an organisation that has a political or

	ascertained? Does the author's affiliation with this particular publisher appear to bias the information?	philosophical agenda, be cautious.
<u>Objectivity</u> is the bias or opinion expressed when a writer interprets or analyzes facts.	Who is the intended audience? Why was this information produced? What appears to be the purpose for it? Inform, explain, persuade, ... How detailed is the information? What opinions (if any) are expressed by the author? What does this work/site offer compared to other works, including non-Internet works?	Examine the writing style. Is it trying to influence your opinion? Consider the use of persuasive language, the source's presentation of other viewpoints, it's reason for providing the information and advertising. Examine the advertising. Does it influence the content? Determine if page is a mask for advertising; if so information might be biased. View any Web page as you would an infommercial on television. Ask yourself why was this written and for whom?
<u>Timeliness</u> (or currency) refers to information that is current at the time of publication	When was it created? When was it updated? How up-to-date are the links (if any)?	Consider publication, creation and revision dates. Beware of Web site scripting that automatically reflects the current day's date on a page. Examine links to and from other Web sites. Are there dead links? Are the links current or updated regularly?
<u>Coverage</u> refers to the extent to which a source explores a topic.	Are the links (if any) evaluated and do they complement the documents' theme? Is the information presented cited correctly? Can you find two or more reliable sources that provide the same information?	For determining the appropriateness of the resource, determine whether it is primary source (source that originates information) or secondary source (source that interprets facts). Look for cited references. A bibliography, along with footnotes, indicate that the author has consulted other sources and serves to authenticate the information that he/she is presenting. In websites, expect links or footnotes documenting sources, and referring to additional

resources and other viewpoints.

Look for cited reasons for excluding previously published data and information.

These criteria were re-elaborated from the following sources:

- <http://www.virtualchase.com/index.shtml>
- http://www.vuw.ac.nz/staff/alastair_smith/evaln/index.htm
- <http://www.lib.berkeley.edu/instruct/guides/evaluation.html>
- <http://www.infopeople.org/resources/select.html>
- <http://www.library.cornell.edu/olinuris/ref/research/webcrit.html>
- <http://www.library.jhu.edu/researchhelp/general/evaluating/>

ANNEX III – DATABASE: SUMMARY INFORMATION

ID	Name	Summary	Keywords	URL	Source	Type of source
6503	Le portail Agriculture	Belgian data on crop types, land use, animal husbandry, biological agriculture, prices and other agricultural topics.	crop, crop inventory, agriculture statistics, land use, Belgium	http://www.statbel.fgov.be/port/agr_fr.asp		Website
4581	WRB Dominant Soil Map	This map illustrates the dominant WRB Reference Soil Groups as based on the FAO-Unesco Soil Map of the World	soil, soil maps, soil types, soil properties, FAO, World Reference Base	http://www.fao.org/ag/agl/agll/wrb/wrbmaps/htm/domsoi.htm		Other
6461	Department for Environment, Food and Rural Affairs.	DEFRA is UK government department responsible for the environment, for food and farming, and for rural matters. Its priorities are to secure a healthy natural environment, a sustainable, low-carbon economy, a thriving farming sector and a sustainable, healthy and secure food supply	UK, pest, management	http://www.defra.gov.uk/		Website
9141	1200 Weeds of the 48 States & Adjacent Canada	The DVD contains more than 6,000 images of weeds found throughout North America. With details like the color of the plant juice, height, flower traits, leaf shape, and root characteristics, users may be able to narrow down a weed's ID.	weeds of the 48 states,		XID Services, Inc.	Software
3561	A catalogue of alien plants in Ireland	This Catalogue is the first annotated check-list of the approximately 920 alien plant taxa recorded in Ireland, past and present.	alien invasive plants, Ireland		A CATALOGUE OF ALIEN PLANTS IN IRELAND, 2002, Occasional Papers No. 14 : pp 414	Book
2081	AFOLU - Agricultural land use in 2000	The dataset is part of the Information System of the JRC Project GHG AFOLU: Green House Gases in Agriculture, Forestry, and Other Land Uses in Europe. The purpose of the agricultural land use maps 2000 is to provide a series of high-resolution (1 km ²) maps of crop shares (percentage of area) for a time frame centered in the year 2000.	crops, crop type, land use, Europe	http://ccu.jrc.ec.europa.eu/data_sets.php		Database

The present document has been produced and adopted by the bodies identified above as author(s). In accordance with Article 36 of Regulation (EC) No 178/2002, this task has been carried out exclusively by the author(s) in the context of a grant agreement between the European Food Safety Authority and the author(s). The present document is published complying with the transparency principle to which the European Food Safety Authority is subject. It may not be considered as an output adopted by EFSA. EFSA reserves its rights, view and position as regards the issues addressed and the conclusions reached in the present document, without prejudice to the rights of the authors.

1921	AFOLU - Tree species distribution	The dataset is part of the Information System of the JRC Project GHG AFOLU: Green House Gases in Agriculture, Forestry, and Other Land Uses in Europe. The data set consists of 137 grid maps with a resolution of 1km by 1km . 115 maps are giving the percentage of single tree species in a grid cell in the forest area of Europe, 1 map shows the forest area where no species classification was possible and 21 maps are giving the percentage of different non-forest classes in the single grid cells.	Europe, forest cover, tree species, forest inventory	http://afoludata.jrc.ec.europa.eu/index.php/login/db_err		Database
3641	AFSCA - Agence fédérale pour la sécurité de la chaîne alimentaire	Belgian Plant Health Control regulations and specific control measures which have to be taken against various pests; Belgian Bee Health Control regulations; Plant production, service responsible for the annual surveys of Q-pests;	Belgium food safety phytosanitary control	http://www.favv-afscsa.fgov.be/sp/pv_phyto/asp_phyto_fr.asp		Website
7861	APHIS Regulated Pest List	The Regulated Pest List (RPL) provides focus to APHIS' safeguarding activities, including inspection of commodities for pests in its pre-clearance programs and at US ports-of-entry, surveys for exotic pests, methods for pest risk mitigation, and pest eradication programs. The list largely was derived from pests identified in Title 7, Code of Federal Regulations, Parts 300-399. The list was updated to reflect recent taxonomic nomenclature and pest status. APHIS continually detects threatening new pests through its inspection and survey activities. In addition, due to changes in pest status or new information, certain pests detected through inspection or survey may no longer be regulated. The pests on the list were a known threat at the time the list was posted at this Internet site. Therefore, the RPL does not include all pests for which APHIS would necessarily take action	USA, regulatory	http://www.invasivespecies.org/NewInitiatives.html		Website
6943	Advice Service Agrometeorology of Sicily	Agrometeorological service is a structured system that, through the combined use of meteorological knowledge, climatic and agronomic, and thanks to the new availability of modern technological means (electronic, computer and electronic) can provide useful support for the management agricultural, forestry and zootechnique.L 'establishment and operation of services of agro-meteorology have been encouraged and fostered by the European Union, as the agrometeorology engages fully in the new logic of the new EU economic policy, in agriculture, areas rural environment that, among other things, provides: diversification of production and dissemination of quality products, good management of natural resources and environmental protection, consumer protection, including through the reduction of pesticide residues in products agricoli.L 'Agrometeorology is therefore an essential tool for both production and eco-friendly quality products. From this perspective should therefore be considered the establishment and the operational start of the meteorological Siciliano Information Service (SIAS).	Italy, Sicily, agrometeorological service	http://www.sias.regione.sicilia.it/		Website
1401	Aerial Dispersal of Pathogens on the Global and Continental Scales and Its Impact on Plant Disease	this article describe the modality of diffusion of some pathogens with aerial way	Phytophthora infestans, Cryphonectria parasitica, Hemileia vastatrix, Puccinia melanocephala, Mycosphaerella fijiensis		SCIENCE VOL 297 26 JULY 2002	Journal article

5581	Agencia Estatal de Meteorología de España	With the entry into force of Law 28/2006 of July 18, from state agencies to improve public services, authorized the government to the creation of the State Meteorological Agency, whose Statute was adopted by Royal Decree 186 / 2008 of February 8, 2008 published in the Official Gazette of February 14. Agency under the Ministry of Environment and Rural and Marine Environment through the Secretary of State for Climate Change, assumes all the powers of the former National Meteorological Institute (INM), center manager of the government, with more than 140 years of history. The purpose of the State Agency of Meteorology is the development, implementation, and provision of meteorological services to the State and support the pursuit of other public policies and private activities, contributing to the safety of persons and property, and welfare and sustainable development of Spanish society.	Espana, climatological services,forecasts	http://www.aemet.es/en/portada		Website
8725	Agency of the Republic of Slovenia for Agricultural Markets and Rural Development	AAMRD is the only accredited paying agency in Slovenia. It is fully accredited to implement the most complex procedures as regards the allocation of funds in the field of agriculture, food-processing industry and rural development. The AAMRD ensures proper and timely payment of the approved funds to final beneficiaries and reports upon it to governmental and European institutions.		http://www.arsktrp.gov.si/en/		Database
8361	Agrarmarkt Austria (AMA)	Information for producer, farmer, consumer		http://www.ama.at/		Database
7901	Agrarmarkt Informations-Gesellschaft mbH (Germany)	Ex ZMP. Data from commodities markets		http://www.marktundpreis.de		Website
8604	Agreste	Advanced French agricultural statistics, National, regional and local statistics for all crop productions, freely available online		http://agreste.maapar.lbn.fr/ReportFolders/ReportFolders.aspx		Database
8724	Agricultural Institute of Slovenia	Agricultural Institute of Slovenia is a public research institution founded in 1898. The number of persons employed at the Institute is 150, of whom 73 are researchers.		http://www.kis.si/pls/kis/kis.web?m=0&j=SI		Website
6281	Agricultural Services and Rural Development: Plant Health Department Profile	This is the official web site of the Government of Malta, Ministry for Resources & Rural Affairs. It contains several information about agriculture in Malta, and in the section 'plant health Department' are published and available several data sheets regarding the most frequently observed pests in Malta.	Malta, pests	http://www.agric.gov.mt/pub-articles?l=1		Website
7042	Agricultural Statistics of Belgium	Statistical Office of Belgium. For data, the site refers to the National Bank (http://www.nbb.be/app/cal/E/BelgoHome.htm)	statistics, belgium	http://statbel.fgov.be/indicators/home_en.asp		Website

3962	Agricultural Statistics, Data 1995-2005	The Eurostat pocketbook on EU agricultural statistics 1995-2005	crop, agriculture statistics, land use, Europe, EU	http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-ED-07-001/EN/KS-ED-07-001-EN.PDF	Agricultural Statistics, Data 1995-2005. Office for Official Publications of the European Communities, Luxembourg, 2007.	Book
3941	Agriculture in the European Union - Statistical and economic information 2008	The Commission annual report on the agricultural situation in the European Union. Covers a wide range of subjects: the economic situation in agriculture, structures, trade, markets, land-use (main crops), financial aspects and rural development.	crop, crop inventory, crop map, land use, Europe, EU	http://ec.europa.eu/agriculture/agrista/2008/table_en/2008enfinal.pdf	Agriculture in the European Union - Statistical and economic information 2008. European Union Directorate-General for Agriculture and Rural Development, 2009.	Annual report
4421	Agro-MAPS: Global Spatial Database of Agricultural Land-use Statistics	Interactive map display & data download from FAO of global crop production, area harvested and crop yields aggregated by sub-national administrative districts.	crop, crop inventory, crop maps, land use	http://www.fao.org/landwater/agll/agromaps/interactive/page.jsp		Website
1021	Agroscope Changins-Wädenswil Research Station ACW	Agroscope Changins-Wädenswil Research Station conducts applied research in plant science. Areas of study include field crops, pastures, viticulture, arboriculture, horticulture, berries and aromatic and medicinal herbs. It is also charged with carrying out relevant tasks required by law and gives a description of current situation of quarantine pests in Switzerland.		http://www.acw.admin.ch/themen/00576/00854/00914/index.html?lang=en	http://www.acw.admin.ch/aktuell/index.html?lang=en	Website
7521	Alien Invader Plants	The website is focusing on alien invader plants in South Africa. Contains links and information regarding legislation, eradication, current affairs and more.	invasive plants, South Africa	http://www.geocities.com/wessaaliens/index.htm		Website

3661	Alien Plant Invaders of Natural Areas	Alien Plant Invaders of Natural Areas is a web-based project of the Plant Conservation Alliance's Alien Plant Working Group, that provides information for the general public, land managers, researchers, and others on the serious threat and impacts of invasive alien (exotic, non-native) plants to the native flora, fauna, and natural ecosystems of the United States.		http://www.nps.gov/plants/alien/fact.htm		Website
6221	Alien Species in Poland	A database of 403 alien species of plants, animals and fungi, describing pathways, place and time of introduction to Poland, current distribution, population trends and impact upon native species, habitats and ecosystems. For some species, there are also suggested methods of control. (from the National Institute of invasive species science)	poland invasive species, poland alien species	www.iop.krakow.pl	www.iop.krakow.pl/iop	Database
2701	American Phytopathological Society	The American Phytopathological Society (APS) is the premier society dedicated to high-quality, innovative plant pathology research. For more than a century, members of APS have been making and sharing significant breakthroughs, both for the science and society. APS is driven by a distinctive community of scientists, whose energy and commitment ensure the global advancement of this critical science. APS members represent a broad range of specialties, from pushing frontiers in the accuracy and speed of field diagnosis, to increasing our understanding of plant pathology through laboratory research. Members come from academia, government, industry, and private practice. The diversity of the members and science makes the society pertinent to a multitude of research areas, while the international involvement ensures that the latest innovations from around the world are available to all.	plant diseases, phytopathology, plant management	www.apsnet.org	www.apsnet.org	Website
6581	An Integrated Pest Management System in Germany for the Control of Fungal Leaf Diseases in Sugar Beet	The IPM Sugar Beet Model	pest management germany sugar beet	http://apsjournals.apsnet.org/doi/pdf/10.1094/PDIS.2002.86.4.336?cookieSet=1	Plant Disease. 2002. 86: 4, 336-344. 28 ref.	Journal article
2101	An inventory of tree species in Europe - an essential data input for air pollution modelling.	We present a detailed tree species inventory covering Europe, parts of Africa and parts of Asia. The inventory contains 39 groups of species that are important for biogenic VOCs or pollen emission calculations. For example: oak (Quercus), poplar (Populus), pines (Pinus), spruce (Picea), birch (Betula) and alder (Alnus).	forest, forest inventory, tree species, Europe		Ecological Modelling. 2008. 217: 3/4, 292-304.	Journal article

3201	Annual Reports on plant disease control, Bundesland Baden-Wuerttemberg and Bayern - Germany	Report and data on application of phytosanitary measures (monitoring and testing, control)	plant disease control germany	http://www.lfl.bayern.de/publikationen/pubinstitut.php?context=/lfl/ips/&we r=ips and http://www.landwirtschaft-mlr.baden-wuerttemberg.de/servlet/P B/menu/1042836_pcontent_11/index.html?_IF-MODIFIED-SINCE=Sun,%2023%20Nov%202008%2010:28:03%20GMT&dontcacheme		Website
3861	Anuario de Estadística Ministerio de Medio Ambiente	The agriculture statistics yearbook compiled by the Ministerio de Medio Ambiente to serve as a reference document and a principal source of information on Spain agricultural statistics.	crop, crop inventory, crop map, land use, agriculture statistics, Spain	http://www.mapa.es/estadistica/pags/anuario/2008/Anuario_2008.pdf	Anuario de Estadística Ministerio de Medio Ambiente 2008. Ministerio de Medio Ambiente y Rural y Marino, Madrid, Spain, 2009.	Annual report
6543	Areas Under Crops Census of the Czech Statistical Office	Current areas under cultivation for single crop types in the Czech Republic	crop, crop inventory, agriculture statistics, land use	http://www.czso.cz/csu/2009edicniplan.nsf/engp/2104-09		Database
5861	Asian-Pacific alien species database	<p>In order to establish countermeasures to prevent their invasion and spread, and minimize the economic and environmental damages caused by invasive alien species, it is very important to develop a database on invasive alien species for sharing new information with Asia Pacific countries by the Internet.</p> <p>To develop such a database and make up the network of the specialists for invasive alien species, the International Seminar (Tsukuba in 2003) and the International Workshop (Taichung in 2004) with attendants from Asian-Pacific countries were held, which were organized jointly by NIAES of Japan and FFTC of Taiwan. The database named "Asian-Pacific Alien Species Database (APASD)" was opened on the Internet in 2004.</p> <p>The purposes of the APASD are to help regulate the spread and infestation of invasive alien species, and to minimize economic damage and environmental impacts in the Asia-Pacific region caused by such species, by sharing information on invasive alien plants, insects, microorganisms, et cetera. Through the cooperation of contributors in many countries and regions, the data will become more and more useful for the accomplishment of this purpose.</p>	Japan, invasive species, asia, pacific	www.apasd-niaes.dc.affrc.go.jp	http://apasd-niaes.dc.affrc.go.jp	Database

8981	Assessment and Management of Plant Invasions	Biological invasion of native plant communities is a high-priority problem in the field of environmental management. Resource managers, biologists, and all those involved in plant communities must consider ecological interactions when assessing both the effects of plant invasion and the long-term effects of management.	invaded range, indigenous range, plant management plan,		Springer- Verlag New York, inc.	Book
721	Atlas Florae Europaea Database	Atlas Florae Europaea (AFE) is a project for mapping the distribution of vascular plants in Europe by a collaborative effort of European botanists. The principal aim of the AFE is to offer complementary maps with taxonomic notes of species and subspecies for the published Flora Europaea. Today, the maps cover the families which include over 20% of the vascular plants of Europe.	plants distribution, Europe	http://www.fmnh.helsinki.fi/english/botany/afe/publishing/database.htm		Database
1221	Australasian Plant Disease Notes	Short note on the first record of Appendiculella echinus on Cecropia glaziovii in Brazil.	Appendiculella echinus, Cecropia glaziovii, Meliolales,	http://www.publish.csiro.au/?paper=DN09002	Pereira O.L., Silva B.M., 2009. Black mildew disease on the neotropical tree Cecropia glaziovii in Brazil, caused by Appendiculella echinus. Australasian Plant Disease Notes, 4(1) 44-5.	Other
1781	Australian Government - Departement of Agriculture, Fisheries and Forestry	The page of the site of The Departement of Agriculture of Australia regarding pest, diseases and weeds, has links to some of the more high profile pests and diseases that are a threat to Australia's animal (including aquatic), marine and plant health. You will also find information on how we respond to pest and disease outbreaks, and how these incursions can be prevented in the first place.	pest control, plant disease, quarantine	www.daff.gov.au	www.daff.gov.au	Website
6181	Australian Plant Pest Database	The APPD is an internet-based, plant health tool linking databases associated with plant pest collections in Australia. The APPD can be used to support decisions made with respect to agricultural trade and emergency pest management.	Pest Collections, Distributed Databases, Australian Plant Pest Database, Plant health status	www.planthealthaustralia.com.au	www.planthealthaustralia.com.au/APPD	Database
8301	Austrian Agency for Health and Food Safety	Import statistics on: soil, seed, plants, food etc.. Data are available on request		www.ages.at		Website

3362	Austrian Agency for Health and Food Safety - Institute for plant health	Data on plant health and disease control, official diagnosis laboratory	plant health austria	http://www.ages.at/ages/landwirtschaftliche-sachgebiete/pflanzengesundheit/	Website
8664	BASIC HORTICULTURAL STATISTICS, DEFRA, UK	Statistics on horticultural crops grown in the UK		http://statistics.defra.gov.uk/esg/publications/bhs/default.asp	Database
8401	BMFLUW, Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft (Federal Ministry of Agriculture, Forestry, Environment and Water Management)	Crop production statistics are in the "Grüner Bericht" (Green Report) for Austrian agriculture and forestry		http://www.gruenerbericht.at/cms/index.php	Database
8381	BMFLUW, Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft (Federal Ministry of Agriculture, Forestry, Environment and Water Management)	Federal Ministry of Agriculture, Forestry, Environment and Water Management		http://www.lebensministerium.at/en	Database
6283	Base de Datos de Especies de Fauna Exótica encontrada en Canarias	The database contains lists of alien species in the Canary Islands with known breeding populations; without known breeding populations; of uncertain origin with breeding populations; and translocated native species; and a bibliography. Lists are indexed by scientific and common names, and including taxonomic authority and year.	alien species, Canary Islands	http://www.gobiernodecanarias.org/cmoyot/medioambiente/medionatural/introducidas/especiesinvasoras.html	Database

5781	Beijing Climate Center	<p>To meet the needs of the national economic construction and the changing international environment, with the approval of the State Council, the National Climate Centre (NCC) of China Meteorological Administration (CMA) was founded in January 1995. With the endeavors in the past eight years, NCC has developed into a national operational and research centre of climate in China, involving climate monitoring and diagnosis, climate prediction, climate impact assessment as well as climate change. At present time, NCC had qualified capability and function as a WMO/regional climate centre. Therefore, CMA has made decision to set up Beijing Climate Centre (BCC) in March 2003 so as to fulfill duty best. Main Tasks are:</p> <ul style="list-style-type: none"> o Monitor and diagnose global atmospheric and ocean conditions, especially in East Asia, as well as significant climate events (e.g. ENSO); o To provide global climate predictions and impact assessments at monthly, seasonal and inter-annual timescales, particularly in East Asia; o To carry out research on global and regional climate change, detection development of regional climate scenarios and response strategy options; o To strengthen collaborations between National Meteorological and Hydrological Service (NMHS) on related observation, communication and computing networks for data collection and exchange; o To provide climate data base and archiving services; o To provide relevant climate products services such as interpretation, evaluation, processing, detection and issue etc. 	China, climate research, climate variability	http://bcc.cma.gov.cn/en/		Website
1201	Biocontrol of fungal root rot diseases of crop plants by the use of rhizobia and bradyrhizobia	<p>Twenty-one <i>Rhizobium</i> and <i>Bradyrhizobium</i> strains were tested <i>in vitro</i> against the mycelial growth of three pathogenic fungi on solid and liquid media. All tested rhizobia and bradyrhizobia significantly suppressed the growth of the three soil-borne root-infecting fungi (<i>Fusarium solani</i>, <i>Macrophomina phaseolina</i> and <i>Rhizoctonia solani</i>) either in the absence or presence of iron.</p>	<p><i>Fusarium solani</i>, <i>Macrophomina phaseolina</i>, <i>Rhizoctonia solani</i>, <i>Thanatephorus cucumeris</i>, <i>Bradyrhizobium</i>, <i>Rhizobium</i>. soybean, sunflower, okra.</p>		<p>Folia Microbiologica, Number 4 / August, 1998; Volume 43,431-437.</p>	Journal issue
6202	Biodat database	<p>Two databases (one of 1119 introduced plant records, and the other of 3250 introduced animal records) searchable by latin name, russian name, order, family, country of origin, and region of introduction. Information provided for species includes latin name, russian name, kingdom, order, family, point of exportation, country of exportation, region of exportation, manner of encroachment, detection point, area of introduction, country of introduction, region of introduction, biotype of introduction, year of introduction, population, dispersal dynamics, type of introduction, purpose of introduction, target organism, enemies and competitors, introduction results, economic importance, information source, year and scientific institution. (from the National Institute of Invasive Species science)</p>	quarantine pest Russia; Invasive Species Russia	www.biodat.ru	www.biodat.ru/db/intro/plant_e.htm	Database
8081	Biodiversity - Invasive species	Information on invasive species in Australia for Australian government	Australia, invasive species	http://www.environment.gov.au/biodiversity/invasive/index.html		Website

6741	Biogeographical regions, Europe 2008	The bio-geographic regions dataset contains the official delineations used in the Habitats Directive (92/43/EEC). Available as GIS layer at the 1:1000000 scale.	geospatial data, biogeography, GIS	http://dataservice.eea.europa.eu/dataservice/metadetails.asp?id=1054		Database
1881	Bioversity International	With effect from 1 December 2006, IPGRI and INIBAP operate under the name "Bioversity International", Bioversity for short. This new name echoes our new strategy, which focuses on improving people's lives through biodiversity research.	Guidelines, Plant diseases, pest risk	www.bioversityinternational.org	www.ipgri.cgiar.org	Website
9081	Botrytis: Biology, Pathology and Control	The book is the result of intensive work of 43 authors, all of whom are leading scientists in the Botrytis sciences. Each chapter describes a particular aspect of fungal biology and its impact on disease processes and host response. New technologies have arisen that when applied to long-standing problems or to test new hypotheses have been most rewarding and many of these are covered in this book. The chapters are cross linked so that readers can follow associated material to better understand the practical implications of the advances made in fundamental science. The twenty inter-connected chapters of the book are grouped according to three major themes: the fungus and its pathogenicity factors; plant reactions to infection; and epidemiology and management of important Botrytis-incited diseases. This book adopts a multidisciplinary approach to integrate the state-of-the-art knowledge in all key areas of common interest in the fungi and their plant interactions. The book includes detailed reviews of Botrytis spp. and the diseases they cause in plant systems and provides a comprehensive description of these fungal necrotrophs, including their diversity of response to the environment, their speciation and relatedness, sources of variation for evolution and molecular genetics and genomics. Aspects of Botrytis-host interactions, pathogenicity factors, the plant's reactions to infection, morphology and cellular organization, signaling, key enzymes, reactive oxygen species and oxidative processes in disease on-set, secondary metabolites as plant defense substances and the role of phytohormones in such reactions are emphasized in the book. Several innovative approaches for disease management of this group of destructive pathogens and methods of detection, epidemiological studies and chemical and biological control are also discussed.	botrytis pathology, botrytis biology, botrytis control		www.springer.com	Book
3961	British Columbia Plant Health Strategy	A strategic science-based approach is needed to prioritize and address the plant health risks and issues that affect productivity, environmental sustainability and competitiveness of agricultural crops in British Columbia (B.C.). This document outlines a five-year Plant Health Strategy developed by and for the Plant Health Unit, Food Safety and Quality Branch of the British Columbia Ministry of Agriculture and Lands (BCMAL). Plant health management contributes to the protection of human health and the environment by promoting best management practices that include the application of Integrated Pest Management principles and the reduction of risks from invasive species on agriculture and biodiversity.		www.al.gov.bc.ca/cropprot/index.htm	www.al.gov.bc.ca/cropprot/index.htm	Website
8422	Bundesamt für Wald (Federal Forest Office)	Center of excellence for all monitorings and development of the forest in Austria. expert advice, long-term monitoring programmes		http://bfw.ac.at		Database

8461	Bundesanstalt für Agrarwirtschaft (Federal Institute of Agricultural Economics)	Statistics, analysis, assessment and prognosis of development of the market in agricultural products		http://www.awi.bmlfuw.gv.at/	Database
2501	Bundeswaldinventur (National Forest Inventory of Germany) Website	The National Forest Inventory (Bundeswaldinventur; BWI) is a large-scale survey of forest status and forest production potential conducted using a uniform procedure for the entire territory of the Federal Republic of Germany. Forest areas for single tree species are available.	national forest inventories, forest resources, forest statistics, forest area, growing stock, volume, Germany	http://www.bundeswaldinventur.de/	Website
6641	Bureau of Meteorology of Australian Government	The Bureau was established under the Meteorology Act of 1906 by formally bringing together the individual colonial/State Meteorological Services that had existed prior to that time. It commenced operation as a Commonwealth agency on 1 January 1908. Following the repeal of the Meteorology Act of 1906, the Bureau was formally reestablished, under the charge of the Director of Meteorology, by the Meteorology Act of 1955. This act provides the explicit legal basis and the basic charter for its operation. It is established by the Act as a primarily public interest agency but with the power to make charges for specialised services to individual users and user groups. Regional Offices are located in each State capital and in Darwin. Each Regional Office includes a Regional Forecasting Centre and a Flood Warning Centre, and the Perth, Darwin and Brisbane offices also house Tropical Cyclone Warning Centres. The Darwin office also serves as the Volcanic Ash Advisory Centre. These offices are responsible for all the operational and service activities in the State or Territory concerned. The Bureau maintains a network of field offices across the Australian continent, on neighboring islands and in Antarctica, as well as national networks of some 500 paid cooperative observers and approximately 6000 voluntary rainfall observers.	Australian, forecasts, weather, climate	http://www.bom.gov.au/index.shtml	Website
8670	CAPRI	"CAPRI (Common Agricultural Policy Regional Impact) is an agricultural sector model covering both the whole of EU27 and Norway at regional level (250 regions) and global agricultural markets. The data bases exploit wherever possible well-documented, official and harmonised data sources, especially data from EUROSTAT, FAOSTAT, OECD and extractions from the Farm Accounting Data Network (FADN)2. Specific modules ensure that the data used in CAPRI are mutually compatible and complete in time and space. They cover about 50 agricultural primary and processed products for the EU from farm type to global scale including input and output coefficients."		http://www.ilr1.uni-bonn.de/agpo/rsrch/capri/faq_e.htm	Database
8901	COST E27 Map Database	The map database contains metadata records on available map material for the countries participating in COSTE27, and within pan-European activities of interest (e.g. European forests)	metadata, forest, forest maps, Europe, EU	http://www.efi.int/databases/coste27/maps.php	Database

5941	California Invasive Plant Council	The site contains the California Invasive Plant Inventory, a comprehensive list of invasive plants based on ecological impacts. Each plant is assessed using a transparent criteria system with documentation of sources.	Invasive plants, California, ecology	http://www.cal-ipc.org/		Website
7082	Campania Agrometeorology Regional Center	With L.R. 7 / 85 of the Campania region have established the technical support services which include the Center Agrometeorology Regional (CAR), structure of Se.SIRCA, which heads the Regional meteorological network (RAR). The Center shall include: * Network management Regional Agrometeorology; * Agrofenologica network management, database management and agro-meteorological agrofenologica; * Coordination of activities related to agro-meteorology; * Providing both regional structures to outside users of agrometeorological data and products.	Italy, Campania, agrometeorological network	http://www.sito.regione.campania.it/agricoltura/meteo/agrometeo.htm		Website
6541	Canada's Forest Inventory (Canfi) 2001	Data and maps of the national Canadian forest inventory 2001 from the Canadian Forest Service (CFS).	forest, forest inventory, Canada	http://cfs.nrcan.gc.ca/subsite/canfi/index-canfi		Website
6583	Canadian Food Inspection Agency	CFIA's plans and priorities link directly to the Government of Canada's priorities for bolstering economic prosperity, strengthening security at the border and of the safety of the food supply, protecting the environment and contributing to the health of Canadians. The objectives of the plant protection program within the CFIA are to prevent the introduction and spread within Canada of plant pests of quarantine significance, to detect and control or eradicate designated plant pests in Canada, and to certify plant and plant products for domestic and export trade.	plant pathology, safety of the food supply, identification of pests	http://www.inspection.gc.ca/english/agen/agene.shtml	http://www.inspection.gc.ca/english/agen/agene.shtml	Website
7981	Center for Invasive Plant Management	The Center for Invasive Plant Management (CIPM) promotes the ecological management of invasive plants in the West through education, by facilitating collaboration among researchers, educators, and land managers, and by funding research projects and weed management areas.	invasive plants USA	http://www.weedcenter.org/		Website
6623	Centraal Bureau voor de Statistiek	Statistics Netherlands is responsible for collecting and processing data in order to publish statistics to be used in practice, by policymakers and for scientific research. In addition to its responsibility for (official) national statistics, Statistics Netherlands also has the task of producing European (community) statistics.	agri, trade, population, environment	http://statline.cbs.nl/StatWeb/?LA=en		Website

6861	Central Statistical Office of Poland	Polish Central Statistical Office.	statistics, polish	http://www.stat.gov.pl/gus/index_ENG_HTML.htm		Website
6501	Central Statistics Office Ireland	Central Statistic Office of Ireland. Statistical Information about Agriculture (Livestock and Farm Numbers, Supply Balances, Livestock Slaughtering, Regional Accounts, Agricultural Output, Input and Income, Agricultural Input and Output Price Indices, Agricultural Input and Output Absolute Prices, Milk Production, Labour and Size of Holdings, Area Used and Crop Production, Land Sales, Fishing Industry Production and Other Characteristics, External Trade in Fishing Industry), Tourism and Trade	Area, Crops, Milk production, Price, tourism, trade	http://www.cso.ie/px/eirestat/database/eirestat/eirestat.asp		Website
8669	Central and Testing Institute in agriculture	The Central Controlling and Testing Institute in Agriculture (ÅKSÅŠP) is a national budget organization directly managed by the Ministry of Agriculture of the Slovak Republic. The basic task of the Institute is to execute professional state supervision and testing under the conditions of the agricultural sector, as well as professional state inspection of quality of inputs into agriculture (agrochemicals, feedstuffs and the like). The activities of the Central Controlling and Testing Institute in Agriculture (ÅKSÅŠP) within the framework of plant production and animal production are thematically aimed at soil, varieties of agricultural crops, seeds and planting, plant nutrition, plant protection, internal and external quarantine, feedstuffs, animal nutrition, as well as agricultural	Slovak Republic, control measures, regulation	http://www.uksup.sk/index.php?n=101		Website
4821	Central institute for meteorology and geodynamics of Hosterreich	ZAMG is the Austrian weather service. As member of WMO, EUMETNET and ECOMET it is in close co-operation with the other potential data holders in the study area of the project. It has also close scientific relations to the Institute for Meteorology and Geophysics of the University of Vienna. The climate department of ZAMG will be in charge of the MEDCLIVAR activities. The division has a long experience in climate and climate change related national and international projects. It is experienced in formal and informal collaboration with the Weather Services in Europe as well as to a number of national and international research institutes and has the necessary staff and equipment for the requirements necessary for supra-national data-related climate research. Besides the key persons from ZAMG's climate variability group, there may be additional support of the project by other staff of the climate department. The support includes also the use of the computational resources of ZAMG.	Osterreich, climate, weather	http://www.zamg.ac.at/index.php3		Website
1243	Characteristics of wheat leaf diseases development in Latvia	A observation of wheat leaf disease in some fields in Latvia made it possible to recognize the most important pathogens present in crops of this country.	wheat, tan spot, Septoria leaf spot, powdery mildew, disease progress		ACTA AGROBOTANICA Vol. 58, z. 2 Å€ 2005 s. 329Å€334	Journal article

961	Characterization of Fusarium graminearum Isolates Resistant to Both Carbendazim and a New Fungicide JS399-19		Fusarium graminearum, fungicide resistance, multi-drug resistance, phenotype		Phytopathology, 2009, 99:441-446	Journal issue
9201	Citrus Health Management	Management practices cover not only the interrelationship between plant, pathogen and the environment, but also describe several economic and environmental issues related to citrus health. This combination creates a holistic treatment of citrus health management.	Citrus health management, citrus		The American Phytopathological Society	Book
981	Classificazione degli agenti patogeni per gli animali e i vegetali	This document was edited on request of the Italian Government and provides a wide list of pests known to be risky for animals or plants. Pests are associated to a risk index; criteria for classification are explained in the introduction and are specific for plants or animals and based on the general conditions present on the Italian territory.	list of pests, risk, classification			Other
7801	Coeweb	Coeweb is the online information system dedicated to foreign trade statistics, providing, on a monthly basis, a wealth of information on trade flows between Italy and the rest of the world. This information is derived from the Single Administrative Document (SAD) and from Intrastat forms acquired by the Customs Agency as regards extra-EU and intra-EU flows, respectively. The data collected and received by ISTAT are first processed in compliance with Community regulations applying to statistics on foreign trade, and subsequently revised and validated by reviewers. The data processing procedure also provides statistical data for operators and businesses as well as time series by index links. The data bank includes information as of 1991 with a size in excess of 60 GB. The high number of variables considered and the possibility to perform a wide range of online queries make it a powerful, highly-flexible information tool providing help to national and international economic and institutional actors.		http://www.coeweb.istat.it/english/default.htm		Website
1461	Coeweb	Istat data warehouse delle statistiche del commercio estero (Italia)	statistiche, trade, commercio estero, istat	http://www.coeweb.istat.it/default2.htm		Database

2221	Combining Earth Observation Data and Forest Statistics	This report (and map) presents the results of the project "Combining geographically referenced and earth observation data and forest statistics for deriving a forest map of Europe". A forest map of the European Union is available with the report.	Europe, forest inventory, forest maps	http://www.efi.int/portal/virtual_library/publications/research_reports/14/	Risto Päävinen, Mikko Lehikoinen, Andreas Schuck, Tuomas Häme, Seppo Väätäinen, Pamela Kennedy and Sten Folving. Research Report 14, Jointly published by EFI, Joensuu and Joint Research Centre / European Commission, 2001	Miscellaneous
3021	Comité de Sanidad Vegetal del Cono Sur	Site of COSAVE (Comité de Sanidad Vegetal del Cono Sur), an organization between governments of Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay, which contains fact sheets of quarantine pests and their diagnostic methods.	Quarantine, pest, Argentina, Bolivia, Brazil, Chile, Paraguay, Uruguay	http://www.cosave.org/index.php		Website
8001	Common Indian Myna web site	This website describes the Common Indian Myna, <i>Acridotheres tristis</i> , explains why it is a problem, and what is being done to control it.	invasive bird	http://fennerschool-associated.anu.edu.au/myna/index.html		Website
2201	Compilation of a Calibrated European Forest Map Derived from NOAA-AVHRR Data	Internal Report on the making of the pan-European forest map. This document complements forest map websites at the Joint Research Centre and the European Forest Institute.	Europe, forest cover, forest inventory	http://www.efi.int/portal/virtual_library/publications/technical_reports/13/	Andreas Schuck, Jo Van Brusselen, Risto Päävinen, Tuomas Häme, Pamela Kennedy and Sten Folving. Internal Report 13. European Forest Institute, Joensuu, Finland, 2002. 44 p. + Annexes	Other

7761	ConIstat	<p>ConIstat is a data base containing more than 16000 time-series of short term indicators produced by ISTAT. ConIstat allows to display tables with time-series referred to many sectors of industry and services.</p> <p>For the time being the domains in ConIstat are the following: prices, service enterprises activities, employment, wages and other labour indicators, labour force quarterly survey, industrial enterprises activities, foreign trade, quarterly national accounts.</p> <p>Each domain contains data from one or more survey and one or more aggregates.</p> <p>Data in ConIstat may be entered by domain, by economic sector, identified on the basis of Italian version of Nace, by Main Industrial Groups (capital, intermediate, consumer goods or energy) and by aggregate of European System of National Accounts (Esa95).</p> <p>Price and wage according to collective contracts indices time series available in ConIstat are not suitable for producing legal effects that are based on specific indicators elaborated by Istat and available on the web site www.istat.it or in the statistical information centres. This is why indices in ConIstat are recalculated in the last reference base.</p>		http://con.istat.it/amerigo/		Website
4102	Conserving China's Biodiversity	<p>China is the world's third largest country and one of the richest in terms of biodiversity. Its vast territory stretches 5,200 km from east to west. It spans 50 degrees of latitude, and covers five climatic zones: cold-temperate, temperate, warm-temperate, subtropical, and tropical. A wide range of habitats and environmental conditions makes China especially vulnerable to the establishment of invasive species of foreign origin. Potential invasive alien species from most areas of the world may find suitable habitat somewhere in China.</p>	Alien invasive plant, China, list of invasive species in China	www.chinabiodiversity.com	www.chinabiodiversity.com/ruqinghe.htm	
2881	Corine Land Cover	<p>The objectives of the land cover project are:</p> <ul style="list-style-type: none"> - to provide those responsible for and interested in the European policy on the environment with quantitative data on land cover, which is consistent and comparable across Europe; - to prepare one comprehensive land cover database for the 15 EC member states and other European and North African countries, at an original scale of 1: 100 000, using 44 classes of the 3-level Corine nomenclature. 	Corine, land use, land cover, Europe, GIS	http://dataservice.eea.europa.eu/dataservice/available2.asp?type=findkeyword&theme=clc2000		Database
4641	Crop Knowledge Master	<p>The Crop Knowledge Master is currently being updated, and cross-referenced to the Pacific Islands Distance Diagnostics and Recommendation System.</p>		http://www.extento.hawaii.edu/kbase/crop/crop.htm	http://www.extento.hawaii.edu/kbase/crop/crop.htm	Website
5201	Crop Protection Compendium	<p>The Crop Protection Compendium is an interactive multimedia encyclopaedia with comprehensive worldwide coverage of pests, crops and natural enemies. It's a global compilation of crop protection knowledge for practical decision-making, including information on crops, countries, pests, diseases and weeds and their natural enemies.</p>	CABI compentia, Crop protection	www.cabi.org	http://www.cabi.org/compendia/cpc/	Website
7401	Crop Research Institute of Czech Republic	<p>develops the scientific knowledge in the field of crop production.</p>	crops, czech, statistics	http://www.vurv.cz/index.html		

1022	Crown and Root Fungal Diseases of Alfalfa in Egypt	This paper reports the results of a survey and pathogenicity tests of fungi associated with crown and root diseases of alfalfa grown in the main production areas of Egypt.	Medicago sativa, Pythium		Plant disease 1983, vol. 67, no5, pp. 509-511	Journal issue
2741	Cucurbit Downy Mildew Forecast	Downy mildew, caused by the fungus Pseudoperonospora cubensis, is found annually on squash, cucumbers, pumpkins, and muskmelons grown in all areas.	Downy mildew, Cucumbers, Map	http://www.ces.ncsu.edu/depts/pp/cucurbit/	http://www.cals.ncsu.edu/plantpath/extension/commodities/cucurbits.html	Website
7341	Cyprus Department of Agriculture (Ministry of Agriculture, natural Resources and Environment)	Department of Agriculture. Statistical data are available only by request. English version of website is available only for some pages.	agriculture, cyprus	http://www.moa.gov.cy/moa/da/da.nsf/dmlindex_en/dmlindex_en?OpenDocument		
7361	Cyprus Statistical Services	Ministry of Finance, Statistical Division	statistics, cyprus	http://www.mof.gov.cy		Website
5461	Czech Hydrometeorological Institute	Hydrological service on our territory has a long-standing tradition as well - it launched in 1875 and is one of the oldest in Europe. The beginnings of some water-level observations on surface water streams can in fact be traced to much earlier days: certain stations have more than 100-year-long series. At the end of the 1950s and beginning of the 1960s the Institute became involved in the problems of the environment. The present-day organization of the Institute is based on three independent disciplines covered by the meteorological, hydrological and atmospheric quality protection departments. Their activities are supported by a computer and telecommunication centre and an information and documentary centre and an information and documentary centre. Seven regional offices provide comprehensive services along all of the Institute's activities.	Czech Republic, hydrological service, climate, atmospheric quality	http://www.chmi.cz/meteo/ok/indexe.html		Website
7441	Czech Statistical Office	Statistical Office of Czech Republic	statistical, czech	http://www.czso.cz/eng/redakce.nsf/i/zem_ts		Website
7481	DJF Geodata	DAta on agricultural land use	land use	http://www.djfgeodata.dk/datasaml/index.html		Website
5061	Danmarks Meteorologiske Institut	DMI manages the meteorological, climatological and oceanographic services to the society in Denmark, the Faeroe Islands and Greenland. The purpose of the activities is to protect human lives and material goods	Denmark, climate, forecasts	http://www.dmi.dk/dmi/index/		Website

3541	Database of Alien Plants in Ireland	This database of alien plants in Ireland contains detailed information on 716 alien plant taxa currently occurring in (semi-) natural habitats in Ireland (both the Republic and Northern Ireland). In a separate list, limited information is also given for 198 taxa with no post-1970 records	alien plants, Ireland	http://www.biochange.ie/alienplants/index.php		Database
6944	Dati annuali sulle coltivazioni ISTAT	Yearly data on crops land-use and productions in Italy at the province level by the National Statistical Institute (ISTAT)	crop, crop inventory, agriculture statistics, land use, Italy	http://agri.istat.it/		Database
761	Decline of date palm trees in Egypt	Fusarium moniliforme and F. solani were isolated from declined date palm leaves in Egypt. Five fungicides were tested in vivo, where thiophanate methyl (Topsin M70) and copper oxide (Coprux) gave the best control.	Fusarium moniliforme, Fusarium solani, thiophanate methyl (Topsin M70), copper oxide (Coprux), palm leaves.		www.pubhort.org/datepalm/datepalm2/datepalm2_46.pdf	Website
6121	Delivering Alien Invasive Species Inventories for Europe	The website provides a "one-stop-shop"™ for information on biological invasions in Europe, delivered via an international team of leading experts in the field of biological invasions, latest technological developments in database design and display, and an extensive network of European collaborators and stakeholders.	Invasive alien species, Europe	http://www.europe-alien.org/index.jsp		Website
3321	Delivering Alien Invasive Species Inventories for Europe	DAISIE is a pivotal instrument in developing a Europe-wide strategy that encompasses both the geographical scale of the problem and unites the study of different taxa in marine, freshwater and terrestrial environments. With direct access to national knowledge bases throughout Europe, those addressing the invasive alien species challenge will easily obtain data on which species are invasive or potentially invasive in particular habitats, and use this information in their planning efforts. Data has been collated for vertebrates, invertebrates, marine and inland aquatic organisms as well as plants from up to 63 countries/regions (including islands) in the wider Europe. Over 248 datasets have been assembled and verified by experts, representing the largest database on invasive species in the world. Access to this resource is provided through three main search facilities: * Search for information on one of the 8996 alien species occurring in Europe * Search for one of the 1598 experts on biological invasions in Europe * Search regions to explore the alien species threats across Europe, for 63 countries/regions (including islands) and 39 coastal and marine areas.	europe-alien	http://www.europe-alien.org/	http://www.europe-alien.org/	Website
8601	Department Agriculture and Fisheries "Regional Ministry of Agriculture	Flemish data on crops etc.		http://lv.vlaanderen.be/nlapps/docs/default.asp?id=904		Database
6505	Department of Agriculture,	Irish Department of Agriculture. Contains information and publications about production, processing and trade of agricultural products	Irish, agriculture, fisheries, food	http://www.agriculture.gov.ie/		Website

	Fisheries and Food					
7101	Department of Agriculture - Cyprus	Information on Agriculture and Livestock in Cyprus	Cyprus, red palm weevil	http://www.moa.gov.cy		Website
5141	Department of Agriculture and Food - Western Australia	The Department of Agriculture and Food assists the State's Agriculture, Food and Fibre sectors to be sustainable and profitable, with a clear focus on export-led growth. The Department enhances the international competitiveness of the State's agribusiness by working with them to meet the increasingly demanding standards for safety and quality of food and fibre products produced in a sustainable way.	Australia, pests	www.agric.wa.gov.au		Website
7041	Department of Agriculture, Plant Protection Section	The Plant Protection Sector of the Department of Agriculture works on all aspects of plant protection, providing advice and training not only to farmers but also to the private and public organizations about any plant protection issues, including conventional, integrated and biological control methods and measures. Using various pest monitoring models based on pest traps and attractants, and various environmental factors, such as temperature, relative humidity and rainfall, the Sector makes regular pest announcements to the public about the right time for the application of pesticide sprays.	Department of Agriculture, Plant Protection Section	http://www.moa.gov.cy/moa/da/da.nsf/dmlindex_en/dmlindex_en?OpenDocument	http://www.moa.gov.cy/moa/da/da.nsf/dmlindex_en/dmlindex_en?OpenDocument	Website
6162	Department of Hydrometeorology of Belarus	Official website of the Belarusian government that deals with climate, weather and hydrometeorological	Belarus, forecasts. meteorological services	http://www.pogoda.by/		Website
6226	Department of Meteorology of Sri Lanka	We provide services pertaining to Meteorology, Aeronautical Meteorology, Marine Meteorology, Hydro Meteorology, Agricultural Meteorology, Climatology, and Astronomy to government agencies, private sector and the general public in keeping with national interest and international standards. The objectives of the Department are: • To provide weather services to the general public, the agricultural and energy sectors, fisheries, shipping and other interested parties. • To provide weather services to national and international aviation in accordance with the technical regulations stipulated by WMO and ICAO. • To provide climatologically, agro meteorological and limited astronomical, magnetic and time services. • To encourage study and research in meteorology, climatology, climate change and allied subjects. • To receive Tsunami information and issue warnings to the general public.	Sri Lanka, climatology, tsunami warnings, weather services	www.meteo.gov.lk		Website
6722	Department of meteorology and hydrology Government of the Union of	Official website of the Government of Myanmar. Highlight climate and weather	Myanmar, weather, climatology	http://www.dmh.gov.mm/index.cfm		Website

	Myanmar					
2961	Descriptions of Plant viruses	This site provides a central source of information about viruses, viroids and satellites of plants, fungi and protozoa, with some additional data on related animal viruses : Over 400 individual descriptions of plant viruses or virus groups	plant viruses, DVP	http://www.dpvweb.net/dpv/dpvnameidx.php	http://www.dpvweb.net/dpv/dpvnameidx.php	Website
1162	Detection of Potato mop-top virus in Potato Tubers and Sprouts: Combinations of RNA2 and RNA3 Variants and Incidence of Symptomless Infections	PMTV, a virus transmitted by the protoctist <i>Spongospora subterranea</i> and infecting the tubers and the sprouts of potato, are investigated from its RNA.	Potato, mop-top virus, Tubers, Sprouts, Sequencing, Finland, DAS-ELISA,		Phytopathology, Vol. 99, No. 5, 2009: 519-531.	Journal issue
4961	Deutscher wetterdienst	Site in German and partially in English. Very complete as regards the weather, has a large database of several locations in Germany. A section provides an excellent overview on the main weather information for many cities around the world.	Germany, climate, forecast, climatological services	http://www.dwd.de/		Website
1843	Differentiation between chestnuts (<i>Castanea sativa</i> Mill.) at different localities based on morphometric data of fruits.	Morphometric differences between groups of old chestnut trees grown at localities Bratislava, Radosina, Jelenec and Modry Kamen were studied. These localities are considered the main historical centres of chestnut distribution in Slovakia.	chestnut distribution		Folia Oecologica. 2003. 30: 2, 149-156. 10 ref.	Journal article
4461	Digital Soil Map of the World and Derived Soil Properties	The Digital Soil Map of the World (DSMW) CD-ROM is based on the FAO/UNESCO Soil Map of the World, original scale 1:5 000 000. The CD-ROM contains two types of files, DSMW map sheets and derived soil properties files with images derived from the Soil Map of the World.	soil, soil maps, soil types, soil properties, FAO	http://www.fao.org/geonetwork/srv/en/metadata.show?id=14116		Database
6263	Dirección Nacional de Meteorología de Uruguay	Official authority of the Government of Uruguay. Founded in late 1800, deals with meteorology in a general sense but also prevention and fire information and other issues related to the environment	Uruguay, forecasts, climatological services	http://www.meteorologia.com.uy		Website

6223	Direction de la Météorologie Nationale du Maroc	Ensure activities related to information and weather forecasts and climate necessary to meet all the needs of users at national level and ensuring the international exchange of data under the agreements ratified by the Kingdom of Morocco; Conduct studies and atmospheric research, meteorology and climatology theoretical, experimental and applied as well as studies and research related to its mission; Assume the role of reference for observing and measuring meteorological parameters, climate and environment in line with international norms and standards; Strengthening bilateral and multilateral cooperation and participate in the preparation of international agreements in conjunction with the authorities concerned in the fields of meteorology and climatology and establish related regulations and enforcement.	Morocco, meteorology, climatology	http://www.marocmeteo.ma/		
8621	Directorate General Agriculture "Regional Ministry of Agriculture (Belgium Walloon Region)	Economic data on agriculture in Walloon Region; Links to different bodies providing warnings to farmers regarding risks to crop production (?)		http://agriculture.wallonie.be/apps/spip_wolwin/article.php3?id_article=171		Database
3801	Direcção-Geral de Agricultura e Desenvolvimento Rural - Ministério da Agricultura, do Desenvolvimento Rural e das Pescas - Portugal	Promover a valorização, a competitividade e a sustentabilidade da Agricultura e dos Territórios Rurais. Ser a autoridade de excelência nas Áreas Fitossanitárias e do Regadio e uma referência no Desenvolvimento Rural.	Plant disease control or Portugal	http://www.dgadr.pt/default.aspx		Website
9101	Disease Control in Crop	This important book examines the development and potential exploitation for a range of non-chemical approaches to disease control, with a focus on the need for a greater understanding of crop ecology as the basis for effective disease control in the field. Chapters in the book include coverage of cultural practices, biological control methods, induced resistance, the use of composts and compost extracts, host-plant resistance, the exploitation of tolerance, the use of variety mixtures, biofumigation, solarisation, sulfur-induced resistance, the use of essential oils, the disguising of leaf surfaces, and the use of bacteriophages.	Disease Crop Control		www.wiley.com	Book
1321	Distribution Maps of Plant Diseases	The site www.cabiabstractplus.org/DMPD contains a database of world's maps with the distribution of some plant diseases, indicating the year of creation for any map. The maps are in PDF format, who it is possible to find the source of the data that are shown.	mapping, plant disease	www.cabi.org	www.cabiabstractplus.org	Website

1841	Distribution area of chestnut in Calabria	This paper analyses chestnut distribution in Calabria based on various informative layers such as CORINE Land Cover 3, 1978-1982 b/w aerial photos, 1998 digital ortophoto, management plans cartography.	chestnut distribution, chestnut inventory		Italia Forestale e Montana. 2006. 61: 6, 489-506.	Journal article
1842	Downy mildew (Plasmopara halstedii): importance and geographical distribution on sunflower in Morocco	In Morocco, downy mildew, caused by Plasmopara halstedii (Farl.) Berl. and de Toni, is the most serious disease of sunflower (Achbani and Tourvieille, 1993c). Its spectacular spread constitutes a considerable problem to sunflower cropping if resolute and strong measures are not taken (Achbani and Tourvieille, 1993a). The aim of this work was to determine the geographical distribution, the importance and the manner of spread of downy mildew in the principal sunflower areas in Morocco during two crop years, 1995-96 and 1996-97.	sunflower, downy mildew, Plasmopara halstedii, Morocco.	http://www.unifi.it/istituzi/oni/mpu/phymed.htm	Phytopathologia Mediterranea (2000) 39, 283-288	Journal issue
3761	Dutch Board for the Authorisation of Plant Protection Products and Biocides	Dutch pesticide database	Dutch pesticide database	http://www.ctb-wageningen.nl/		Database
6662	Dutch Ministry of Agriculture, Nature and Food Quality	Dutch Ministry of Agriculture, Nature and Food Quality		http://www.minlnv.nl/portal/page?_pageid=116,1640354&_dad=portal&_schema=PORTAL		Website
8941	EFDAC Map Viewer	The EFDAC (European Forest Data Centre) Map Viewer is a map server providing access to maps concerning forest cover, forest condition, and other related information for Europe.	European Forest Data Centre, forest maps, forest cover, forest condition, forest health, Europe, EU	http://efdac.jrc.ec.europa.eu/		Database
4621	EPPO A1 List of pests recommended for regulation	EPPO recommends its member countries to regulate the pests listed below as quarantine pests the A1 list contain pests absent from the EPPO region.	EPPO, quarantine pests,	www.eppo.org	www.eppo.org/QUARANTINE/listA1.htm	
4701	EPPO A2 List of pests recommended for regulation	EPPO recommends its member countries to regulate the pests listed below as quarantine pests. The List A2 contain pests locally present in the EPPO region.	EPPO, quarantine pests for Europe	/www.eppo.org	www.eppo.org/QUARANTINE/listA2.htm	Annual report

4501	EPPO Alert List	The pests on the Alert List are selected by the EPPO Secretariat, mainly from the literature but also from suggestions of NPPOs of member countries. Their addition to the list is marked by an article in the EPPO Reporting Service. All pests on the Alert List are selected because they may present a phytosanitary risk for the EPPO region. The reasons for considering inclusion on the Alert List can be of various nature: pests which are new to science, new outbreaks, reports of spread, etc. The Alert List is reviewed critically every year by the Panel on Phytosanitary Measures. It is not a quarantine list, and does not constitute a recommendation for phytosanitary action.	EPPO, alert list	www.eppo.org	www.eppo.org/QUARANTINE/Alert_List	Other
6322	Early Detection & Distribution Mapping System	EDDMapS, started in 2005 with Southeastern U.S. focus, is now providing a picture of the distribution of invasive species across the U.S. It contains over 5,000 sight records of infestations of Exotic Pest Plant Council Category I and Category II species in Florida public lands and waters.	distribution alien species, alien species Florida	www.eddmaps.org/florida	www.fleppc.org/database/data_intro.htm	Website
4661	Ecocrop 1+2	Ecocrop 1 is a tool to identify plant species for given environments and uses. Ecocrop 2 is a tool to record, organize, compare and use crop response studies to environmental and management factors.	crop requirements, crop identification	http://www.fao.org/waicent/Faoinfo/agricult/agl/lw dms.stm	ECOCROP 1 & 2. The crop environmental requirements database & the crop environmental response database. Rev. 2 (CD-ROM). FAO Land and Water Digital Media Series - CD-ROM	Software
3101	Economic impact of the spread of alien species in Germany	A research about the biology and remediation of invasive species and the evaluation of their adverse health effects and economic impact.	economic impact invasive plant germany	http://publikationen.un i-frankfurt.de/volltexte/2006/2740/	Berlin : Umweltbundesamt, 2003 ; Texte / Umweltbundesamt ; 2003,80 Umweltforschungspl an des Bundesministeriums fÅ¼r Umwelt, Naturschutz und Reaktorsicherheit ; Report-Nr.: UBA FB 000441e	Annual report
7281	Economics Accounts for Agriculture (Bulgaria)	manual of the Economic Accounts for Agriculture and Forestry EAA/EAF 97 (Rev 1.1), Eurostat, 2000 Edition. Data on the final crop output at current and constant prices in local currency unit	crops, bulgaria			

7104	Eesti Taimede Levikukaarte	This site consist in a database of Estonian crop plant's map distribution	distribution map plants Estonia	www.zbi.ee/levikukaardid	www.zbi.ee/levikukaardid	Database
5721	Egyptian Meteorological Authority	Egyptian website that collects information on the climate in this country. The Party in Arabic appears to be significantly more substantial part of the corresponding in English but is completely incomprehensible to most Westerners.	Egyptian climate, forecasts	http://www.nwp.gov.eg/		Website
3881	Encuesta sobre Plantaciones de Arboles Frutales	Area inventory of fruit tree species for single provinces of Spain	fruit trees, fruit tree species, fruit tree inventory, Spain	http://www.mapa.es/es/estadistica/pags/encuestafrutales/resultados.htm		Database
3901	Encuesta sobre Superficies y Rendimientos de Cultivos	The regional crop statistics results (documents, data, maps) compiled by the Spain Ministerio de Medio Ambiente. Area inventory data of single crops are reported and maps are available for main crop types.	crop, crop inventory, crop map, land use, Spain	http://www.mapa.es/en/es/tadistica/pags/encuestacultivos/resultados.htm		Database
6301	Encyclopédie des ravageurs européens	Database encyclopedic HYPPZ includes 297 sheets describing pest (insects, mites, rodents, nematodes, snails and small vertebrates) in Western Europe, a glossary of zoology terms (280 words and concepts) and an array of cultures and fruit trees involved (more than 80 species). The whole is illustrated with color photographs (approximately 1 200) and 150 original drawings.	Western Europe, INRA	http://www.inra.fr/interne/Produits/HYPPZ/pa.htm		Database
701	Enhanced Onion Resistance against Stemphylium Leaf Blight Disease, Caused by Stemphylium vesicarium, by Dipotassium Phosphate and Benzothiadiazole Treatments	This study assessed the effects of two compounds, BionÂ® and K2HPO4, on Stemphylium vesicarium disease development in onion plants.	peroxidase, systemic acquired resistance, polyphenoloxidase, phenylalanine ammonia-lyase, phenol content		Plant Pathol. J. 24(2) : 171-177 (2008)	Journal issue
6506	Environmental Protection Agency	The EPA is an independent public body established under the Environmental Protection Agency Act, 1992. The CORINE 2000 land cover database is a valuable benchmark for Ireland and over time it will help to monitor overall changes in Ireland's environment	Environment, Land	http://www.epa.ie/downloads/data/corinedata/		Website

5521	Environmental Agency of the Republic of Slovenia	The Environmental Agency is a body of the Ministry of the Environment and Spatial Planning. It performs expert, analytical, regulatory and administrative tasks related to the environment at the national level. Thus the Agency's mission is to monitor, analyse and forecast natural phenomena and processes in the environment, and to reduce natural threats to people and property. These tasks are performed by the national services for meteorology, hydrology and seismology. The Agency's mission is also to monitor environmental contamination and to provide reliable public environmental data; to this end, the Agency has the appropriate measuring network and laboratories in place. Its mission of exceptional importance is, moreover, to meet the requirements regarding environmental protection deriving from the regulations in force, to preserve natural resources and the biotic diversity and to ensure sustainable development of the country.	Slovenia, forecasts, gis	http://www.arso.gov.si/en/		Website
1061	Epidemiological aspects of mango malformation disease caused by <i>Fusarium mangiferae</i> and source of infection in seedlings cultivated in orchards in Egypt.	This study was conducted to investigate aspects of the epidemiology, survival and spread of the <i>Fusarium mangiferae</i> in general and specifically in seedlings, the majority of which are cultivated in infected orchards in Egypt.	flowers, fruit, <i>Fusarium mangiferae</i> , <i>Mangifera indica</i> , mango malformation, polymerase chain reaction.		Plant pathology 2007, vol. 56, no2, pp. 257-263	Journal issue
5561	Estonian Alien Species Database	this is a site introducing alien species in Estonia. You can browse the species list and use the search module.	estonia alien species, estonia invasive plants	www.eelis.ic.envir.ee	www.eelis.ic.envir.ee/voorliigid/eng/	Website
4901	Estonian Meteorological and Hydrological Institute	EMHI is responsibilities include all activities carried out by a national meteorological and hydrological service: <ul style="list-style-type: none"> * Meteorological questions connected to the protection of the environment * Issue weather forecasts * Gathering, treatment and storage of the results of meteorological and hydrological measurements * A climatological survey of Estonia * Make available the results of its work * Provide special services for the public and private interests on a commercial basis * Co-operation with foreign as well as international meteorological institutions, especially with World Meteorological Organisation (WMO) 	Estonian, forecasts, climate	http://www.emhi.ee/index.php		Website

4341	EuroBlight	During the 2009 Euroblight will be upgraded to a more modern web and database platform similar to Eurowheat. Eurowheat and Euroblight will share database and applications. The first new application compared to the previous platform will be a new monitoring system to replace Web-Blight. Initially this will be a tool aiming at monitoring early attacks of potato late blight in the four Nordic countries, but it can easily be expanded to include any country in the world.	potato disease, Nordic countries, euroblight	www.Euroblight.net	www.Euroblight.net	Website
4361	EuroWheat	EuroWheat is an Internet based platform aiming at collating and displaying host - and pathogen characteristics, and pesticide efficacy on a European scale. Bringing together existing information from national programs and ensuring that these data are in a format, which can be readily understood trans-nationally, are expected to provide significant added value on a European scale. New disease - and resistance data will be published on the platform as soon as possible to support effective disease control, deployment of host resistances and breeding programs.	Wheat diseases, eurowheat		www.Eurowheat.org	Website
2461	Euroforest Portal	The portal contains forest information that has been catalogued by subject, or topic. The user can browse through topics in the left side panel, or there is an advanced search that allows to search by keywords, language, country or information source type.	forest, forest inventory, forest maps, web pages	http://forestportal.efi.int/component/option,com_frontend/Itemid,1/		Website
6401	European Climate Assessment & Dataset for Liechtenstein	There isn't an official website of the Government of Liechtenstein which only deal with weather, so the easiest way to get climatological data of that country is available at ECA & D where you can find weather data of European countries.	Liechtenstein, climatological data	http://eca.knmi.nl/		Website
741	European Forest Information Scenario Model	A large scale matrix model, called the European Forest Information Scenario Model (EFISCEN), with input data available for 31 European countries derived from their national forest inventories.	forest, forest inventory, tree species, Europe	http://www.efi.int/databases/authenticate.php		Database
2861	European forest types	The European forest types presents the findings of a study carried out by an international consortium of experts aimed at providing the Ministerial Conference on the Protection of Forests in Europe (MCPFE) with a user-friendly forest types classification.	forest, forest types, forest management, Europe	http://www.eea.europa.eu/publications/technical_report_2006_9	European forest types. EEA Technical report No 9/2006, Office for Official Publications of the European Communities, Luxembourg.	Annual report

1981	European handbook of plant diseases	An encyclopaedic treatment of plant diseases in Europe, this book is designed as a standard reference volume for the general working plant pathologist and those taking advanced training in plant pathology. It provides a clear, informed and authoritative summary of each entry by an appropriate specialist, with a selection of key references for further reading. The handbook covers the economic diseases of crops and forest trees in Europe, treated by pathogen and classed as pathogens of major, moderate and minor importance. Approximately 1000 organisms are covered in total, including 600 fungi, 100 bacteria, and 300 viruses and similar organisms	plant diseases, europa, epidemiology, pest distribution		www.cababstractplus.org;	Book
1561	European handbook of plant diseases	As a rule, only pathogens occurring in Europe are included. However, certain non-European organisms can be considered to present a specific threat to Europe and are considered as "quarantine organisms" for the continent. Each entry for a major pathogen is divided into sections as follows: 1)name; 2)basic description of the pathogen; 3) host plants; 4) host specialization, or information on hostspecialized formae speciales, varieties, races of pathotype; 5) geographical distribution; 6)diseases; 7)Epidemiology; 8) economic inportance; 9) control; 10) special research interest.	book, European handbook of plant diseases	http://books.google.it/books?id=dx4FAeaetYIC&printsec=frontcover	blackwell scientific publication ltd	Book
1481	Eurostat	Eurostat is the Statistical Office of the European Communities.	Trade, statistics	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes		Website
8542	FAOSTAT	FAOSTAT provides time-series and cross sectional data relating to food and agriculture for some 200 countries.		http://faostat.fao.org/default.aspx		Website
8583	FASFC	Legislation and procedures for export to third countries		http://www.favv-afsca.fgov.be/exportderdelanden/		Database

5961	FORESTKNOWLEDGE: Information for Forest Management	<p>The information and communications platform forestknowledge.net is a joint project of four research institutions:</p> <ul style="list-style-type: none"> • Bavarian Forest Institute, Freising, Germany (LWF) • Federal Research and Training Centre for Forests, Natural Hazards and Landscape, Vienna, Austria (BFW) • Forest Research Institute of Baden-Württemberg, Freiburg i.Br., Germany (FVA) • Swiss Federal Institute for Forest, Snow and Landscape Research, Birmensdorf, Switzerland (WSL) <p>The aim of forestknowledge.net is to collect knowledge and results from the participating research and experimental institutions. Further partner institutions are constantly expanding the platform. Together with partners in Italy and Slovenia research institutes from five European countries have, for the first time, succeeded in establishing an information portal, which imparts knowledge and that in five languages (German, English, French, Italian, and Slovenian).</p> <p>forestknowledge.net is a website run by forestry experts for forestry experts. We provide guaranteed quality, up-to-date information on forests, man and forest management. forestknowledge.net provides condensed, edited information on a wide range of topics regarding both forests and forestry in plain language.</p> <p>forestknowledge.net links research institutions, forest managers, forest owner associations and other non-governmental organisations to each other and provides access to experts. The editorial staff of the respective research institutes is responsible for the text content in forestknowledge.net. Each editorial office compiles expert information, edits it and then presents it on the web-portal. So called expert advisory boards, which are composed of at least two scientists, depending on the subject, guarantee the quality of the contributions.</p> <p>We aim at being a focal meeting point for forestry practitioners and anyone else who is interested in forests and so we are looking forward to your suggestions and comments. Get in touch with us!</p>		www.waldwissen.net		Website
8584	FPS Economy	<p>1) Index of prices to produce agricultural and horticultural products 2) Index of purchase prices of means to produce of agricultural and horticultural products 3) Mean prices of agricultural and horticultural products Belgian exports of live animals, animal products and vegetable products (value).</p>		http://ecodata.mineco.fgov.be/mdf/ts_structur.jsp?table=EI9__		Database
7821	Federal Ministry of Food, Agriculture and Consumer Protection of Germany	data on agriculture, enterprises, crop yield on a general level		http://www.bmelv.de/cln_137/DE/Startseite/startseite_node.html		Website
5441	Federal Noxious Weeds	Invasive species may pose a significant threat to agricultural areas and/or to non-cultivated ecological systems. Being aware of these potential problem species will enable the scientific and regulatory communities to conduct proactive steps to prevent their entry or to eradicate or effectively control the species should its entry and establishment occur. Within this web site are databases identifying and providing information regarding non-indigenous arthropods that have been introduced into North America, and invasive species regulated by the Animal and Plant Health Inspection Service (APHIS)		http://www.invasivespecies.org/	http://www.invasivespecies.org/	Database
7781	Federal Statistical Office of Germany	Federal Statistical Office of Germany		www.destatis.de		Website

6563	Field Guide to Non-chemical Pest Management in Cabbage Production	It enables to provide farmers with practical guides and alternatives to eliminate the use and their dependence on synthetic pesticides for the management of cabbage pests.	cabbage pest management	http://www.scribd.com/doc/16647105/Field-Guide-to-Nonchemical-Pest-Management-in-Cabbage-Production	Website
8122	Field Research Unit Swedish	General information and database on openly accessible results from field research/trials		http://www.ffe.slu.se/eng/index.cfm?SBody=H	
2601	Finland Statistical Yearbook of Forestry	The Statistical Yearbook of Forestry, with all the figures and tables also in English, provides an exhaustive statistical overview of forestry and the forest industries in Finland. The book covers the Finnish forest sector as a whole, ranging from forest resources to international trade in forest-related products. Chapters of Statistical Yearbook of Forestry are available free of charge as pdf-files.	forest inventory, forest resources, forest statistics, growing stock, Finland	http://www.metla.fi/julkaisu/metsatilastollinenski/index-en.htm	Annual report
7621	Finnish Food Safety Authority Evira	Export and Import data (volume and origine) on commodities requiring a phytosanitary certificate	trade, phytosanitary	http://www.evira.fi/portal/en/	
7681	Finnish Statistical Office	The National Statistical Office of Finland	data, finland, agriculture	http://www.stat.fi/	Website
7641	Finnish national Board of Customs	Statistics data on foreing trade		http://uljas.tulli.fi/	Website
1181	First Record of Oidiopsis taurica Causing Powdery Mildew of Capparis spinosa in Egypt	Powdery mildew infections were observed on Capparis spinosa plants. Symptoms first appeared as white, circular patches on the adaxial leaf surface (Powdery mildew infections were observed on Capparis spinosa plants. Symptoms first appeared as white, circular patches on the adaxial leaf surface (<1.3 cm in diameter), and as the disease progressed, both leaf surfaces were infected and these chlorotic areas eventually turned to necrotic lesions.	Powdery mildew, Capparis spinosa, Oidiopsis taurica, Leveillula taurica.		Plant disease, May 2009, Volume 93, Number 5, Page 555. Journal issue
1041	First Report of Zucchini yellow mosaic virus in Cucumber (Cucumis sativus) in India	A mosaic virus in cucumber are identify testing itself on some indicator plants and confirming the data using direct antigen coating enzyme-linked immunosorbent assays.	Zucchini yellow mosaic virus, Cucumis sativus, India		Plant disease, August 2004, Volume 88, Number 8 Page 906 Abstract only

6122	Fitofarmaci e Sostanze Attive	The data base contains information about all the registered phytosanitary products. The research can be made by active substance and by commercial product. For each product is available a detailed fact sheet. The data base contains about 14000 products.	Italy, data base, active substance	http://www.sian.it/fitovis/		Database
7062	Fitofarmaci e Sostanze Attive - Centro Ricerca Per la Patologia Vegetale - Ministero delle politiche agricole, alimentari e forestali	Le informazioni immesse nella Banca Dati Fitofarmaci sono curate dal Centro Ricerca per la Patologia Vegetale, con sede in Roma. Il dato informativo, prima di essere disponibile sulla Banca Dati, è oggetto di un attento lavoro di analisi, verifica e classificazione per lo svolgimento del quale si integrano diverse professionalità (agronomiche, chimico-sanitarie, entomopatologiche, ecc.). Fonte delle informazioni è il Ministero della Salute, con il quale è stata instaurata una collaborazione, che mette a disposizione del Centro Ricerca per la Patologia Vegetale i decreti di registrazione dei prodotti fitosanitari. L'aggiornamento, particolarmente oneroso vista la mole di informazioni in continua evoluzione, è stato possibile anche grazie ad alcuni finanziamenti stanziati dalla Regione Lazio nell'ambito dei Programmi triennali di Ricerca Agricola, Agroambientale ed Agroindustriale (PRAL). La Banca dati, completa delle scansioni delle etichette, contiene informazioni su tutti i prodotti fitosanitari autorizzati. E' selezionabile secondo percorsi di ricerca per Sostanza attiva e per Prodotto fitosanitario. Dalle interrogazioni si ottengono le relative liste, cliccando sulle quali si accede alla scheda analitica. In Banca Dati sono presenti, compresi i revocati, circa 14.000 fitofarmaci		http://www.sian.it/fitovis/		Website
8602	Flemish Government	General information on agriculture in Flanders		http://www4.vlaanderen.be/dar/svr/Cijfers/Pages/Excel.aspx		
6584	Florida department of agriculture and consumer services	The Florida Dept of Agriculture and Consumer Services has indexed circulars (data sheets) compiled since the 1960's. Scope includes botany, nematology, entomology, and plant pathology. They are in the process of scanning the archives, and many are available as pdf files. Files not available electronically can be requested online. This page provides links to pest alerts of insects and diseases that have recently arrived in Florida or that may possibly arrive soon.	plant pathology, plant nursery inspections, identification of pests	http://www.doacs.state.fl.us/pi/enpp/triology/index.html	http://www.doacs.state.fl.us/pi/enpp/triology/index.html	Website
5003	Food and Fertilizer Technology Center for the Asian and Pacific Region	FFTC IS A REGIONAL INFORMATION CENTER with the mission to collect and disseminate practical and technical information in agriculture, toward contributing to the achievement of increased output and higher incomes for small-scale farmers. The Center has three main objectives: To spearhead the transfer of matured technologies and information generated by scientists to the farmers; To promote the sharing and exchange of agricultural information among countries toward enabling small-scale farmers to benefit from scientific and technological advancements in the region; and To bridge the technology gap between developed and developing countries.		http://www.agnet.org/		Website

841	Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand: TBFRA Main Report. (2000)	The TBFRA main report includes statistical and descriptive forest information together with analysis undertaken by high level experts in different thematic areas. Data were supplied by national correspondents, adjusted to conform to international definitions, and validated by ECE/FAO Geneva.	forest, forest inventory, forest statistics	http://www.unece.org/timber/fra/welcome.htm	Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand: Main Report. (2000). Geneva Timber and Forest Study Papers, No. 17. United Nations Economic Commission for Europe, Geneva, Switzerland.	Book
861	Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand: TBFRA database. (2000)	TBFRA data include statistical and descriptive forest information in different thematic areas. Data were supplied by national correspondents, adjusted to conform to international definitions, and validated by ECE/FAO Geneva. The UNECE/FAO published and distributed the full electronic database, as well as the TBFRA Main Report (2000).	forest, forest inventory, forest statistics	http://www.unece.org/timber/fra/downloads/tbfra.zip		Database
6942	Forest resources, forestry and wood management in Hungary	Basic figures of forest resources, forestry and wood management in Hungary by the Central Agricultural Office Forest Directorate of Hungary.	forest, forest inventory, forest resources, Hungary	http://www.aesz.hu/pdf/2007_leporello_angol_v5_p4.pdf	Forest resources, forestry and wood management in Hungary. Agricultural Office Forest Directorate, Budapest, 2007.	Editorial
2541	Forestry Statistics -UK	Forestry Statistics is a annual compendium of statistical information about woodland, forestry and primary wood processing in the UK. Forestry Statistics 2005 has been produced for the first time as an interactive web publication. It includes information for single tree species.	forest inventory, forest resources, forest statistics, UK	http://www.forestry.gov.uk/website/publications.nsf/pubsbycategorynew?Openview&restricttocategory=-Forestry+statistics	available on-line only from Forestry Statistics 2007	Annual report

2041	Forestry facts & figures - UK (2009)	Forestry facts & figures: a summary of statistics about woodland and forestry in the UK.	forest, forest inventory, tree species, United Kingdom	http://www.forestry.gov.uk/website/publications.nsf/pubsbycategorynew?Openview&restricttocategory=-Forestry+statistics	A summary of statistics about woodland and forestry Forestry Facts & Figures 2009. Economics & Statistics Forestry Commission, Edinburgh, United Kingdom.	Annual report
3001	Fungal Databases: System	This database includes reports of fungi on vascular plants and plant products according to their distribution by state (for the U.S.) and country taken from over 12,000 literature sources. Currently the database contains 80,000 fungal taxa on 56,000 vascular plant hosts representing 324,000 unique host-fungus combinations. Over 300 countries and territories are included. Records are continuously added as new publications are received.	fungal database	http://nt.ars-grin.gov/fungalbases/	http://nt.ars-grin.gov/fungalbases/index.cfm	Website
941	Fungal Diseases of Date Palm Off-shoots in Egypt	Pathogenicity test on 3 years- old Mdjhoool off-shoots proved that <i>T. paradoxa</i> was the most destructive fungus on leaves followed by <i>D. phoenicum</i> and <i>Botryodiplodia theobromae</i> , while <i>Alternaria alternata</i> gave the lowest leaf area necrotic percentage. On the roots, <i>Fusarium oxysporum</i> exhibited 12% of rotted-roots after 3 months from inoculation. Amhat and Zaghlol leaves were more tolerant to infection with <i>D. phoenicum</i> and <i>B. theobromae</i> than Hayani and Saïdy ones. Saïdy and Zaghlol roots were highly tolerant to infection with <i>Fusarium</i> root-rot disease.	Date palm (<i>Phoenix dactylifera</i>), Diseases, Fungi.		PAKISTAN JOURNAL OF AGRICULTURE AGRICULTURAL ENGINEERING AND VETERINARY SCIENCES Vol. 22, No.2, 2006.	Journal issue
1581	GIS Application for Plant Disease Distribution on Jack Fruit, Bael Fruit and Ma Kiang Trees in Lower Northern Part of Thailand	Geographics Informations System (GIS) was introduced to study on the diseases distribution of some fruit trees in vaste region of thailand	Sanyong, jack fruit, barl fruit, makiang, GIS		22nd Asian Conference of remote Sensing 2001	Conference paper

8961	GISCO portal - Geographic Information System of the European Commission	As a permanent service of Eurostat, GISCO: promotes and stimulates the use of GIS within the European Statistical System and the Commission and manages and disseminates the Geographical reference database.	land cover, biogeography, vegetation, soil, maps, geographic information systems, GIS, Europe, EU	http://epp.eurostat.ec.europa.eu/portal/page/portal/gisco/introduction		Website
7961	General Secretariat of the National Statistical Service of Greece	The National Statistical Service of Greece (NSSG) is a General Secretariat of the Ministry of Economy and Finance, with the following structure: a Central Service with two (2) General Directorates and fourteen (14) Divisions. The NSSG is the official source of the statistical information in Greece. Its main purpose and mission is: Its main purpose and mission is: - the collection of statistical data through statistical surveys and censuses or administrative sources, - the statistical data processing, the statistical data processing, - the dissemination of the statistical information to public and private users or individuals. the dissemination of the statistical information to public and private users or individuals.		http://www.statistics.gr/portal/page/portal/ESYE		Website
901	Genetic Diversity of <i>pv. oryzae</i> Strains from Sri Lanka	Several strains of <i>Xanthomonas oryzae</i> from Sri Lanka were screened on some cultivar of rice, bearing each one a single gene for resistance to this bacterium, to value the virulence of the pathogen and the association between phylogenetic groups (clusters) and pathotypes.	<i>Xanthomonas oryzae</i> , bacterial blight of rice, pathogen populations, phylogeny		Phytopathology, Vol 4, 2000, 90:415-421.	Journal issue
4601	GeoNetwork FAO	The FAO portal meant to improve access to and integrated use of spatial data and information.	geospatial data, spatial data, GIS, soil maps, vegetation maps	http://www.fao.org/geonetwork/srv/en/main.home		Website
1844	Geographic differentiation in adaptive traits of wild chestnut Spanish populations (<i>Castanea sativa</i> Miller).	Flushing, spring frost damages and height were recorded in a provenance test including nineteen populations covering most Spanish chestnut distribution and were analysed to study the differentiation among wild populations.	chestnut distribution		Investigacion Agraria, Sistemas y Recursos Forestales. 2005. 14: 1, 13-26. 29 ref.	Journal article

1641	Geographic distribution and genetic diversity of <i>Fusarium graminearum</i> and <i>F. asiaticum</i> on wheat spikes throughout China	In this work they are applied modern molecular techniques to define the geographic distribution of <i>Fusarium asiaticum</i> and <i>F. graminearum</i> in China.	Geographic distribution, <i>Fusarium graminearum</i> , <i>Fusarium asiaticum</i> , China		Plant Pathology, Volume 57, Number 1, February 2008, pp. 15-24(10)	Journal article
3221	German online data base on plant protection products	Data on risk management tools (pesticides)	plant protection product Germany	http://www.bvl.bund.de/n_n_510806/EN/04__PlantProtectionProducts/02__AuthorizedPlantProtectionProducts/02__OnlineDatabase/onlineDB__node.html__nnn=true		Database
6125	Ghana Meteorological Agency	Official website of the Ghanaian government on climate and weather forecast	Ghana, weather forecasts, climate	http://www.meteo.gov.gh/index.html		Website
4462	Global Biodiversity Information Facility	GBIF is an international organisation that is working to make the world's biodiversity data accessible everywhere in the world. GBIF and its many partners work to mobilise the data, and to improve search mechanisms, data and metadata standards, web services, and the other components of an Internet-based information infrastructure for biodiversity.		http://data.gbif.org/welcome.htm	http://data.gbif.org/welcome.htm	Website
1601	Global Disease Alert Map	This site shows a point on the map of googlemap for any for every appearance in a given location of a given disease. Any point is related to one or some links with a description of the case and the relative bibliography.	map, plant disease	www.healthmap.org	www.healthmap.org	Website
2641	Global Forest Information Service (GFIS)	The Global Forest Information Service (GFIS) provides the framework to share forest-related data and information through a single gateway.	forest, forest resources	http://www.gfis.net/gfis/home.faces		Website
3361	Global Invasive Species Database	The Global Invasive Species Database focuses on invasive alien species that threaten native biodiversity and covers all taxonomic groups from micro-organisms to animals and plants in all ecosystems. Species information is either supplied by or reviewed by expert contributors from around the world.		http://www.issg.org/database/welcome/	http://www.issg.org/database/welcome/	Database
5621	Global Invasive Species Programme	The GISP mission is to conserve biodiversity and sustain human livelihoods by minimizing the spread and impact of invasive alien species.		http://www.gisp.org/index.asp		Website

7001	Global Pest & Disease Database	The Global Pest and Disease Database (GPDD) is a compilation of exotic invasive species of key concern to the U.S that was developed from a number of sources. Selection of species for inclusion in the database is dependent on a number of factors, including their presence in other key lists and databases. The distributed web-based database system forms the conduit for a number of pest-oriented information systems and provides both external and internal APHIS information on key pest species not yet in the United States. The GPDD serves as a secure electronic warehouse or library of scientific information about exotic pests that is used to support the Agency's pest lists.		https://www.gpdd.info/index.cfm?&2738521&24863870	https://www.gpdd.info/index.cfm?&2738521&24863870	Database
3401	Global pest information service	Global Crop Pest Identification and Information Services in Integrated Pest Management (IPM) on the World Wide Web will provide a user friendly information system for extensionists to help them diagnose major crop pests via a computer with Internet connection. With today's computer technology, the graphical base system format can be interactive and friendly to the user to facilitate the search without the need of previous experience and intensive training. Information for a given pest problem can be found with the help of indexes by crop, pest type, damage characteristics and several cross references. Also, the projected system can down-load information to the extensionists on the biology, ecology and major pest control strategies that they can test and modify with farmers in each region. Finally the program can facilitate the distribution of images and drawings of the pest in question which can be used in extension campaigns. With a seed grant from the Cornell International Institute for Food, Agriculture and Development (CIIFAD), we have developed a prototype to demonstrate the information and capabilities of the proposed system. This site is the prototype of the Global Crop Pest Identification and Information Services in Integrated Pest Management (IPM) on the World Wide Web.		http://www.nysaes.cornell.edu/ent/hortcrops/proposal.html		Website
7921	Golden Apple Snail Pest Alert	Website dealing with the advancing invasion of several Pomacea species and the damage that these snails can cause to the food production (mainly rice).	Snail, Rice, Philippines	http://pestalert.applesnail.net		Website
6502	Green Report 2009	A general survey of agriculture in Austria.	crop, agriculture survey, agriculture statistic, crop inventory, Austria	http://www.gruenerbericht.at/cms/index.php		Annual report
8421	HBAG	Info on trade in vegetables and fruit		http://www.hbaggroenten.nl/documentatie/statistieken/statistieken2007/		Website

7141	HYPERMEDIA EN PROTECTION DES PLANTES (SECTION PATHOLOGIE)	<p>HyP3 is a database that includes 223 sheets describing pathogens (bacteria, fungi, viruses) in Western Europe and a glossary of plant pathology The whole is illustrated with 563 color photographs.</p> <p>The consultation is based on lists of scientific names (species of pathogens), common names of diseases, under the Glossary of Plant Pathology and Crop. The illustrations are known by hyperlinks placed in the cards.</p> <p>HyP3 can be accessed in English (with links to sheet form) and access lists</p>	plant pathology	http://www.inra.fr/interne/Produits/HYP3/index.html		Database
3681	HYpermedia for Plant Protection	his encyclopedic database on plant protection catalogues the main weeds (580) of western Europe, describes the species at two stages: mature plants and seedlings, and provides information on their taxonomy, their distribution and their ecology.		http://www2.dijon.inra.fr/hyppa/hyppa-a/hyppa_a.htm		Database
8181	Harmful Non-Indigenous Species Database	he Harmful Non-Indigenous Species (HNIS) database includes fact sheets about selected harmful non-indigenous (non-native) species in Hawaii. Information is available on selected plants, invertebrates and vertebrates.	Hawaii, invasive species	http://www.hear.org/hnis/		Database
4521	Harmonized World Soil Database	The Harmonized World Soil Database is a 30 arc-second raster database with over 15000 different soil mapping units that combines existing regional and national updates of soil information worldwide (SOTER, ESD, Soil Map of China, WISE) with the information contained within the 1:5 000 000 scale FAO-UNESCO Soil Map of the World.	soil maps, soil inventory, soil database	http://www.iiasa.ac.at/Research/LUC/luc07/External-World-soil-database/HTML/index.html		Database
8161	Hawaiian Ecosystems at Risk project	The mission of the Hawaiian Ecosystems at Risk project (HEAR) is to provide technology, methods, and information to--and to facilitate communication among--decision-makers, resource managers, and the general public to help support effective science-based management of harmful non-native species in Hawaii and the Pacific.	USA, invasive species, biodiversity	http://www.hear.org		Website
4981	Hellenic National Meteorological Service	Official site of the greek government that deals with weather and harvesting data from a number of stations scattered throughout greek.The Hellenic National Meteorological Service (HNMS) was founded in 1931 under the Ministry of Aviation and its mission was to cover all the meteorological and climatological needs of our country. Today, according to the law in force, the HNMS is a National Service under the subordination of MoD and the auspices of the Hellenic Air Force General Staff.	Greece, data, forecasts	http://www.hnms.gr/hnms/english/index_html		Website

5701	Hungarian Meteorological Service	Official site of Hungarian institutions is to detect and catalog weather data on the national territory. Very few sections are available in English, usually those dealing with weather in the short term.	Hungaria, forecasts, weather	http://www.met.hu/omsz.php		Website
3121	IABIN Invasives Information Network (I3N)	The site contains databases from several I3N member countries displaying informations about their invasive species.	Invasive species, quarantine	http://i3n.iabin.net/index.html		Website
8921	ICP Forests Executive Report 2008 - The Condition of Forest in Europe	The annual Executive Report of the International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests) is the flagship publication of the programme and summarizes the annual main findings.	forest, forest monitoring, pollution, forest health	http://www.icp-forests.org/pdf/ER2008.pdf	The Condition of Forests in Europe - 2008 Executive Report. UNECE Convention on Long-range Transboundary Air Pollution, International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests), Hamburg, 2008.	Annual report
1901	ICP Large-scale forest condition monitoring (Level I)	ICP Forest Level I monitoring provides an annual overview on forest condition based on a 16x16 km gridnet covering around 6000 plots in Europe. In addition soil and foliar analyses are carried out.	forest, forest condition, forest monitoring, tree species	http://www.icp-forests.org/MonLvI.htm		Database
1341	ICTVdB - The Universal Virus Database, version 4, April 2006	The directory of ICTVdB is an Index of Viruses, a list of approved virus names linked to virus descriptions coded from information in Virus Taxonomy: The Seventh Report of the International Committee on Taxonomy of Viruses, van Regenmortel et al. (eds) Academic Press (2000), and includes updates subsequently approved by ICTV.	Virus, taxonomy	http://www.ncbi.nlm.nih.gov/ICTVdb/ICTVdB/		Website
4301	INSPIRE geoportal	The INSPIRE geoportal provide the means to search for spatial data sets and spatial data services, and subject to access restrictions, view and download spatial data sets from the EU Member States within the framework of the Infrastructure for Spatial Information in the European Community (INSPIRE) Directive.	GIS, spatial data, Europe, EU	http://www.inspire-geoportal.eu/		Website

7501	INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES - PEST RISK ANALYSIS FOR QUARANTINE PESTS, INCLUDING ANALYSIS OF ENVIRONMENTAL RISKS AND LIVING MODIFIED ORGANISMS	<p>International standards for phytosanitary measures are prepared by the Secretariat of the International Plant Protection Convention as part of the United Nations Food and Agriculture Organization's global programme of policy and technical assistance in plant quarantine. This programme makes available to FAO Members and other interested parties these standards, guidelines and recommendations to achieve international harmonization of phytosanitary measures, with the aim to facilitate trade and avoid the use of unjustifiable measures as barriers to trade.</p> <p>This standard was endorsed by the Interim Commission on Phytosanitary Measures in April 2001. In April 2003, the Interim Commission on Phytosanitary Measures endorsed a supplement to ISPM No. 11 (Pest risk analysis for quarantine pests) on analysis of environmental risk and agreed that it should be integrated into ISPM No. 11. This resulted in ISPM No. 11 Rev. 1 (Pest risk analysis for quarantine pests including analysis of environmental risks). In April 2004, the Interim Commission on Phytosanitary Measures endorsed a supplement on pest risk analysis for living modified organisms (LMOs) and agreed that it should be integrated into ISPM No. 11 Rev. 1. This has been done to produce the present standard, ISPM No. 11 (2004). The supplementary text on environmental risks is marked with "S1" and the supplementary text on LMOs is marked with "S2".</p> <p>The Interim Commission on Phytosanitary Measures acknowledges the collaboration and support of the Secretariat of the Convention on Biological Diversity, as well as the participation of experts from Parties to the Convention, in the preparation of the supplements to ISPM No. 11.</p>			http://www.fao.org/docrep/008/y5874e/y5874e00.HTM#Contents	Book
4681	ISRIC-WISE global dataset of derived soil properties	This dataset was derived from version 2.0 of the WISE database, holding some 9600 soil profiles, linked to a 0.5 by 0.5 degree raster version of the FAO Soil Map of the World	soil, soil properties		http://www.isric.org/UK/About+Soils/Soil+data/Geographic+data/Global/WISE+spatial+ver.+3.0.htm	Database
6061	Icelandic Meteorological Office	<p>IMO main purpose is to increase safety and efficiency in the operations of the community by:</p> <ul style="list-style-type: none"> * Monitor, diagnose, inform, investigate, provide advice and predict the behavior of nature * Ensure the collection and custody of data and knowledge about long-term evolution of climate and other environmental factors that are in custody Agency 	Iceland, climatic data, forecasts, seismicity		http://en.vedur.is/	Website
2001	Identification of Plant Pathogenic Phytophthora Species by ITS Fingerprinting	this website is an important database for all Phytophthora species.	Phytophthora, Identification of Plant Pathogenic		http://www.phytid.org	http://www.phytid.org Website

821	Identification of newly detected Puccinia pimpinellae on anise plant in Egypt and its control using biotic and abiotic elicitors in relation to growth and yield	Plants can be induced to develop enhanced resistance to a wide range of microbial pathogen infections by treatment with a variety of biotic and abiotic inducers. Biotic inducers include infection by necrotizing pathogens and plant-growth promoting rhizobacteria, and treatment with non-pathogens or cell wall fragments. Abiotic inducers include safe chemicals, which act at various points in the signaling pathways involved in disease resistance, as well as water stress, heat shock, and pH stress.	Pimpinella anisum, rust, Puccinia pimpinellae, biological control, elicitors, chitinase.		African Journal of Microbiology Research Vol. 3 (4) pp. 153-162 April, 2009	Journal issue
3421	Identification of risks and management of invasive alien species using the IPPC framework	Proceedings of the workshop on invasive alien species and the International Plant Protection Convention, Braunschweig, Germany, 22-26 September 2003.	risk management invasive species IPPC	http://www.fao.org/docrep/008/y5968e/y5968e00.htm	Proceedings of the workshop on invasive alien species and the International Plant Protection Convention, Braunschweig, Germany, 22-26 September 2003. Rome, Italy, FAO. xii + 301 pp.	Conference proceedings
781	Incidence and Diversity of Double-Stranded RNAs Occurring in the Chestnut Blight Fungus, Cryphonectria parasitica, in China and Japan	Some subpopulations of the chestnut blight fungus Cryphonectria parasitica from China and Japan are screened for dsRNAs to estimate its diffusion into North America	biological control, Castanea spp., Endothia parasitica, hypovirulence, population structure		Phytopathology, 1998, 88:811-817	Journal issue

6021	India Meteorological Department	The India Meteorological Department was established in 1875. It is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology, seismology and allied subjects. Our tasks are: To take meteorological observations and to provide current and forecast meteorological information for optimum operation of weather-sensitive activities like agriculture, irrigation, shipping, aviation, offshore oil explorations, etc. To warn against severe weather phenomena like tropical cyclones, norwesters, duststorms, heavy rains and snow, cold and heat waves, etc., which cause destruction of life and property. To provide meteorological statistics required for agriculture, water resource management, industries, oil exploration and other nation-building activities. To conduct and promote research in meteorology and allied disciplines. To detect and locate earthquakes and to evaluate seismicity in different parts of the country for development projects.	India, meteorological observation, cyclones, forecasts, seismology	http://www.imd.gov.in/		Website
6142	Indonesian Meteorologi Klimatologi dan Geofisika	Site of an institutional nature of the Indonesian government. Deals with meteorology, climatology and geophysics. Unfortunately this is the only Indonesian language that appears difficult to understand.		http://www.bmg.go.id/dep-an.bmkg		Website
1301	Induction of Systemic Acquired Resistance Against Fire Blight Disease of Apple Caused by Erwinia Amylovora.	In vitro studies, using agar diffusion test, there was no direct effect of Bion, Rahnella aquatilis (Ra39) and BioZell-2000 B on the pathogen growth. Under greenhouse conditions, Application of Bion, Rahnella aquatilis (Ra39) and BioZell-2000 B on foliage of M26 rootstock reduced severity of disease up to 82, 69 and 59%, respectively.	apple, fire blight disease, Rahnella aquatilis, Erwinia amylovora, BioZell-2000 B	www.asplantprotection.org/9thACPP_EN.htm	Ninth Arab Congress of Plant Protection, 19-23 November 2006, Damascus, Syria	Abstract only
7581	Information Centre of the Ministry of Agriculture and Forestry of Finland	Statistics of different agricultural items and various regions in Finland	plants, data, finland	http://www.matilda.fi/servlet/page?_pageid=555,561,193&_dad=portal30&_schema=PORTAL30		Website
5901	Information Network on Invasive Species - Costa Rica	This information system is part of the initiative I3N. Using this system allows you to participate in the regional network of institutions working to share information on invasive species. This is the component relating to Costa Rica from the Information Network on Invasive Species (I3N) of the Inter-American Biodiversity Information Network (IABIN).	Costa Rica, invasive species, biodiversity	http://invasoras.acebio.org/index.asp		Database

801	Inhibitory effects of powdered caraway and peppermint extracts on pea root rot under greenhouse conditions	The objective of the performed research work was to evaluate the antifungal activity of ethanol-water extracts of both caraway seeds (<i>Carum carvi</i> L.) and peppermint leaves (<i>Mentha piperita</i> L.) as well as their mixture against the growth of <i>Sclerotium rolfsii</i> in vitro and their protective effects against the fungal invasion of pea seeds and seedlings in vivo.	control, fungi, pea, plant extracts, root rot, <i>Sclerotium rolfsii</i>		JOURNAL OF PLANT PROTECTION RESEARCH Vol. 49, No. 1 (2009)	Journal issue
7721	Institut national de la statistique et des Études Économiques (France)	National Statistical Institut of France	data, statistics, France	http://www.insee.fr/fr/default.asp		Website
8201	Institute for biological invasions	The IBI has an extensive library on biological invasions consisting of books, journal articles, government reports, conference proceedings, magazine and newspaper articles, and other 'gray' literature. We compiled a searchable literature database		invasions.bio.utk.edu		Database
6441	Institute of Plant Protection and National Research Institute (IPP-NRI)	Information provided on this site are the result of observations conducted by researchers from the Institute of Plant Protection - PIB, Department of IOR-PIB Sosnicowice and background stations IOR-PIB. In addition, observations of the lead researchers of some experimental stations of the Central Research Center for Cultivated Plant Varieties and the Institute of Soil Science and Plant - PIB to crops in some localities located on Polish territory. The result of observation is to provide farmers and advisors with the information regions of the dates of the emergence of some important developmental stages of selected pests and must be combated. Data from the field in which observations are conducted in combination with additional information included in the descriptions of pest morphology, biology and control can be used as an aid in conducting self-monitoring pests.	Poland, pests, control	http://stanfit.ior.agro.pl/szukaj/home		Website
6124	Instituto Nacional de Meteorologia do Brasil	Official website of the Brazilian government that deals with meteorological / climatic observations, agro-meteorology and weather	Brasil, meteorological, agrometeorological, forecasts	http://www.inmet.gov.br/		Website
5281	Instituto de Meteorologia de Portugal	IM, I.P. is the national authority in meteorology, climate, seismology and geomagnetism and has the mission to ensure information to the population, socio-economic activities and public entities adjusted to their needs in the fields defined in the Article 3rd Decree-Law N.º 157/2007 from 27th April pursuing national politics in meteorology, climate and geophysics.	Portugal, meteorology, climate, forecasts	http://www.meteo.pt		Website

8723	Instituto nacional de estadística: Statistics Spain	To analyse the Spanish agricultural situation and follow the structural evolution of farms, to obtain a framework or directory of farms that could serve to carry out sampling designs for sectorial agricultural surveys and to comply with the legal regulations set out by the European Union in the different regulations of the Council, as well as tend to national statistical requirements and other international requests for statistical information on the agricultural sector.		http://www.ine.es/en/inebmenu/mnu_agricultura_en.htm		Database
6126	Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología de Guatemala	Institution highly qualified technical and scientific contributing to the optimization of productive sector activities in the Republic of Guatemala associated with the atmospheric sciences, geophysical and hydrological, coordinating services with the private sector and acting as technical advisor to the government in case of disaster natural contributing to the modernization and specialization in the education sector at all levels in the field of competence.	guatemala, atmospheric sciences, geophysical, hydrological	http://www.insivumeh.gob.gt/		Website
9061	Integrated Pest Management Volume 2: Dissemination and Impact	The IPM-innovation development process is incomplete without the diffusion and adoption of IPM methods by the end users, and through its consequences. The book covers the underlying concepts and methodologies of the diffusion of innovation theory and program evaluation; and reviews the progress and impact of IPM programs implemented in the industrialized, the green revolution and the subsistence agricultural systems of the world. The impact of IPM is discussed with an interdisciplinary perspective by experts from entomology, plant pathology, environmental science, agronomy, anthropology, economics and extension education from North America, South America, Europe, Australia, Africa and Asia. The book provides invaluable resource material to scientists, professionals, students, program planners and farmers.	Crop Protection; Entomology; Integrated pest management; Plant Pathology; Rural Sociology		www.springer.com	Book
1961	Integrated Pest Management in the Tropics: Current Status and Future Prospects	this book tell about strategies of management of plant pests and diseases, applied to the tropicals regions of Asia continent.	IPM, plant pathology, plant disease, pest management		www.eu.wiley.com	Book

1361	Interactive Agricultural Ecological Atlas of Russia and Neighboring Countries. Economic Plants and their Diseases, Pests and Weeds	The Ecological Atlas of Russia and Neighboring Countries (AgroAtlas) brings together information on the geographic distribution and biology of crop plants, their wild relative species, and the species of diseases, pests and weeds that impact crop production. In addition, the AgroAtlas provides information on the agroecological conditions that impact crop production. Maps and GIS tools allow users to combine this information to answer important questions relevant to developing sustainable food production across the entire area of the Former Soviet Union.	Russia, plant diseases, weeds, pests, maps	http://www.agroatlas.ru/	Afonin, A.N.; S.L. Greene; N.I. Dzyubenko, A.N. Frolov (eds.). 2008. Interactive Agricultural Ecological Atlas of Russia and Neighboring Countries. Economic Plants and their Diseases, Pests and Weeds[Online]. Available at: http://www.agroatlas.ru .	Website
7881	International Association of Horticultural producers	he AIPH is a co-ordinating body representing horticultural producers' organizations all over the world. It was set up in Switzerland in 1948 to stimulate international marketing of flowers, plants and landscaping services. An increasing number of growers organizations have joined AIPH with 25 countries represented in 2000. Member countries pay a membership fee that corresponds to the production value of horticultural production of the country in question.		http://www.aiph.org		
5501	International Committee on Taxonomy of Viruses	The Universal Virus Database, ICTVdB, is authorized by ICTV (International Committee on Taxonomy of Viruses) and has been constructed by Cornelia BÄ¼chen-Osmond, from 1991-2000 in the Bioinformatics Group, Australian National University, in consultation with ATCC and supported by NSF. The directory of ICTVdB is an index of viruses, a list of approved virus names linked to virus descriptions coded from information in Virus Taxonomy: The Eighth Report of the International Committee on Taxonomy of Viruses, Fauquet et al. (eds) Academic Press (2005), and includes updates subsequently approved by ICTV. It also incorporates the plant virus database VIDEdB and is illustrated with EM pictures, diagrams and images of symptoms contributed by virologists around the world.	virus taxonomy, universal virus database	www.ictvonline	www.virusdb.c2b2.columbia.edu	Database
6681	International Mycological Association	Mycobank is a database in which all newly described fungi and new names of fungi can be deposited and stored along with key nomenclatural and descriptive material.	fungi database, mycological association	www.ima-mycology.org	www.ima-mycology.org/mycobank	Database

5001	International Phytosanitary Portal	<p>Official web site for the International Plant Protection Convention.</p> <p>The IPPC is an international treaty to secure action to prevent the spread and introduction of pests of plants and plant products, and to promote appropriate measures for their control. It is governed by the Commission on Phytosanitary Measures (CPM) which adopts International Standards for Phytosanitary Measures (ISPMs). The CPM has confirmed the IPP as the preferred forum for national IPPC reporting and the exchange of more general information among the phytosanitary community. The IPPC Secretariat coordinates the activities of the Convention and is provided by the FAO.</p>		https://www.ippc.int/IPP/En/default.jsp		Website
5002	International Plant Health Risk Analysis Workshop	<p>An international workshop on plant health Pest Risk Analysis (PRA) was held to address issues and find solutions to problems faced by people involved in PRA around the world. The workshop was attended by 145 delegates representing 63 different countries.</p> <p>The workshop provided an opportunity to:</p> <ul style="list-style-type: none"> explore methods and procedures for applying the IPPC's PRA standards share experiences on how to use PRA as a decision making tool present tools for completing PRAs strengthen international PRA expertise and communication build a collaborative international PRA network. 				Conference proceedings
8544	International Statistics Flowers and Plants	Statistical yearbook on trade of fresh flower bulbs treated cut flowers, foliage and ornamental plants		http://www.aiph.org/uk/index.html		Database

2061	Introduction and Spread of Invasive Species	<p>With invasive species now regarded as the second largest reason for biodiversity loss world-wide, this Symposium considered a range of species regarded as invasive from the Asiatic longhorn beetle (<i>Anoplophora glabripennis</i>), which has recently gained foothold in Europe to the well-known aggressive neophytes such as giant hogweed (<i>Heracleum mantegazzianum</i>) and Japanese knotweed (<i>Reynoutria japonica</i>). The ecological risks that invasive species pose, how they can be detected at an early stage and what monitoring and information exchange systems can be put in place, were also highlighted. The Symposium included papers presented by speakers from countries around the world. It began with an examination of trade as a pathway for introducing and spreading alien species. Discussion followed on risk assessment and the regulatory framework for control and then looked at monitoring techniques. Alongside the sessions a series of workshops considered the effect of climate change on invasive species and detailed a case study of the western corn rootworm (<i>Diabrotica virgifera virgifera</i>) and the current and future impact of trade with European countries. The oral presentations were supported by a number of Poster Papers.</p> <p>In the future, official phytosanitary regulations, inspection and alert systems should help to protect against the negative impacts of alien species. The Imports Directive 2002/89/EC, which came into effect in January 2005, unifies the approach that EC Member States must take to exclude alien pests and diseases. The aim is to increase the effort to prevent introduction rather than eradicate and contain them once they have entered the EU New Member States.</p>	plant protection, plant health, invasive species		www.plantprotection.org	Conference proceedings
6781	Invasive Alien Species in Northern Ireland	<p>Invasive alien species are species that have been introduced, either deliberately or unintentionally, to areas that are typically outside of their natural range or habitat. Over the last century increasing travel and trade have allowed many species to overcome the geographical barriers that previously restricted them. A number of these are highly invasive, establishing themselves in new terrestrial and aquatic environments.</p> <p>These web pages provide an introduction to the most invasive of the alien species that are currently found in Northern Ireland. Some of those that may become established in the near future are also included.</p>	Northern Ireland, invasive species	http://www.habitas.org.uk/invasive/index.html		Website
6801	Invasive Animal Cooperative Research Centre	The Invasive Animals CRC creates new technologies and integrated strategies to reduce the impact of invasive animals on Australia's economy, environment, and people. We concentrate on developing smarter tools to prevent and detect new invasions, advanced and tactical tools to strengthen integrated management strategies of carp and other pest fish, and new tools and integrated management strategies for major pests including foxes, wild dogs, feral pigs, rats and mice, cane toads, feral cats and rabbits.	Australia, vertebrate invasive	http://www.invasiveanimals.com/		Website
5541	Invasive Non-Native Species Website	This website will contain information on all Alien or Non-native organisms that are invasive in the UK. A particular focus is being placed on providing a core of background information regarding problem species, as well as details on management strategies and control techniques that relate to the individual species. The overall aim is to produce a 'Management Toolkit' for that will assist in the development of strategies for dealing with Invasive Alien Species.		http://138.253.199.114/IAAP%20Web/IAAPwebsite/index.asp	http://138.253.199.114/IAAP%20Web/IAAPwebsite/index.asp	Website

4081	Invasive Plants Database	This list is assembled landscaping plants that are mentioned escaping from nurseries, farms, flower beds, etc. or invading into natural/semi-natural area as secondary forests, natural forests.	Invasive Plants, Japan	www.invasive.mfuukei.jp	www.invasive.mfuukei.jp	Website
8261	Invasive Species Encyclopedia - Canada	The Canadian Wildlife Federation is dedicated to ensuring an appreciation of natural world and a lasting legacy of healthy wildlife and habitat by informing and educating Canadians, advocating responsible human actions and representing wildlife on conservation issues.	Canada, invasive species	http://www.cwf-fcf.org/en/resources/encyclopedias/invasive-species/		Database
8281	Invasive Species Information Node	<p>The Invasive Species Information Node (ISIN) is an information portal for invasive plants, animals, and pathogens in the U.S. and a thematic node of the National Biological Information Infrastructure (NBII). It coordinates invasive species information from other NBII nodes, several U.S. Geological Survey Science Centers, and other government and non-government partners. The ISIN is working to create an early detection and rapid response information system for the control of invasive species in the United States that will include, when fully functional:</p> <ul style="list-style-type: none"> * Summaries of an links to regional invasive species efforts of the NBII and others * The Global Invasive Species Database with printable profiles for hundreds of invasive species * Identification tools to help distinguish invasives from their look-alikes, with links to the Integrated Taxonomic Information System (ITIS) * A mapping and reporting system for scientists and other citizens to report invasive species occurrences * A protocol to deliver the system's early detection information to land managers and decision makers * Invasive species distribution maps with links to species occurrence data * Models predicting future spread of invasive species and habitat vulnerability * A search interface providing diverse information from several invasive species databases simultaneously * A platform to promote data collection standards and database interoperability 	Invasive species, USA	http://www.nbio.gov/portal/community/Communities/Ecological_Topics/Invasive_Species/		Website
8244	Invasive Species in China	China is the 3rd largest country in the world and one o the richest in terms of biodiversity. It has a diverse range of habitats which makes it a suitable home for various invasive alien species. The website offers some general information on how aliens are identified as well as the names of some of the major invasive species.	Chine, invasive species	http://monkey.ioz.ac.cn/bwg-cciced/english/cesis/invasive.htm		Website
3241	Invasive alien species in Switzerland	An inventory of alien species and their threat to biodiversity and economy in Switzerland	alien species Switzerland	http://www.bafu.admin.ch/publikationen/publikation/00028/index.html?lang=en	Invasive alien species in Switzerland. An inventory of alien species and their threat to biodiversity and economy in Switzerland. 2 006. 155 p. (pdf, 18.12.2006, 2253 kb)	Conference proceedings

5081	Invasive and Exotic Species to North America	The website deal with any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem; and whose introduction does or is likely to cause economic or environmental harm or harm to human health. The overall objective of Invasive.org is: to provide an accessible and easily used archive of high quality images related to invasive and exotic species, with particular emphasis on educational applications.	photographic documentation, USA	www.invasive.org		Website
6622	Invasive species Ireland	The Invasive Species Ireland project is a joint venture between the Northern Ireland Environment Agency and the National Parks and Wildlife Service to implement the recommendations of the 2004 Invasive Species Ireland Report. This website acts as gateway to the Invasive Species Ireland project. From here, users will be able to find information on a range of species, policy related to individual species or groups of species, and strategies to deal with species that threaten the biodiversity and economies of Ireland.	Ireland, invasive species, vertebrates	www.invasivespeciesireland.com		Website
7102	Invasive species and biosecurity programme	The Rivers and Fisheries Trusts of Scotland (RAFTS) has recognised the importance of the prevention, control or eradication of invasive species and diseases in river catchments and with support from the Scottish Government, Scottish Natural Heritage (SNH), Scottish Environment Protection Agency (SEPA) and the Esme Fairbairn Foundation has initiated the RAFTS Biosecurity and Invasive Species Programme. Key outputs and actions of the first stage (2008-2011) of the Programme are the: <ul style="list-style-type: none"> * Production of biosecurity plans for 20 member trusts, and * Implementation of key actions within those plans in a number of areas * Local reporting and surveillance systems to detect the introduction and monitor the spread of INNS and to report relevant information to national and UK based authorities * Local rapid response protocols to contain, control and eradicate new populations of selected INNS [click here to see which species] in the Trusts' areas. These protocols will deal with newly detected incidences of INNS that are already established in GB and that will not trigger the GB rapid response mechanism * Local and national awareness activities * Local capacity building particularly training Three biosecurity plans will be produced during 2008-2009 with a further 11 in 2009-2010 and the final six in 2010-2011.	Scotland, invasive species, educational programme	www.invasivespeciesscotland.org.uk		Website
6224	Invasive species in Belgium	List of IAS that live in Belgium and that are known to have a detrimental impact on the environment. Includes species of terrestrial plants, molluscs, crustaceans, insects, fish, amphibians, reptiles, birds, and mammals. Species names link users to fact sheets/profiles containing taxonomic information (including common name in English, French, Dutch and German), photographic images, a description of origin and distribution (including map of Belgium with location points of feral populations), ecology and life history traits (habit preferences, life cycle, dispersion capacity, competition & predation, defense mechanisms), detrimental effects, population control, references, internet links, and contact email for those responsible for preparing the fact sheet/species profile.	alien species belgium; invasive species	www.ias.biodiversity.be	www.ias.biodiversity.be/ias/	Database

661	Inventaire Forestiere National (IFN) - Cartographie dynamique	Online Interactive Forest Cartography of France	forest, forest inventory, tree species maps, France	http://www.ifn.fr/spip/spip.php?rubrique67	Website
2021	Inventaire forestier national (IFN) Website	The French National Forest Inventory (IFN) was created in 1958 to assess French forest resources. It carries out a permanent inventory of national forest resources. Inventory operations are achieved d�partement by d�partement on a 12-year rotational period. IFN publishes principal inventory results on its website and in papers. It also compiles forest maps. Some of the inventory results are available (in French and English).	forest, forest inventory, France	http://www.ifn.fr/	Website
2781	Inventario nazionale delle foreste e dei serbatoi di carbonio (Italy National Forest Inventory)	The results of the latest (2007) 'National Inventory of Forest and Forest Carbon Sink' published by the Italian State Forest service in agreement with the Agricultural Research Centre of Agricultural Ministry. All the data are available in Italian language through the website. Single tree species data are considered.	forest inventory, forest resources, forest statistics, growing stock, Italy	http://www.sian.it/inventarioforestale/jsp/documentazione.jsp	Website
561	Inventory of Chestnut Research, Germplasm and References	A survey on chestnut structured in different sections: the resource (statistics, sanitary problems, storage and processing, chestnut or marron), genetic resources, research projects, researchers and selected bibliography. The information published was provided by scientists involved in chestnut research worldwide. Originated by the FAO Regional Office for Europe Interregional Cooperative Research Network on Nuts (ESCORENA)	chestnut , genetic resources, germplasm, cultivars, Catanea sativa	http://www.fao.org/DOC/REP/006/AD235E/ad235e00.htm	Website
2761	Invent�rio Florestal Nacional 3.ª Revis�o (National Forest Inventory of Portugal)	The main aim of the inventory is to periodically collect information about the forest resources of Portugal. The inventory website provides a summary of the results of the third inventory organised into four main series: land use; stand structure; forest production; stand condition and health.	forest inventory, forest resources, forest statistics, growing stock, Portugal	http://www.dgrf.min-agricultura.pt/ifn/index.htm	Website
2661	Ireland National Forest Inventory Database	The National Forestry Inventory (NFI) was undertaken by the Forest Service of the Department of Agriculture and Food (Republic of Ireland) to address the lack of information on the composition of Irish forests, in relation to species, timber volumes and biodiversity. Inventory data available on line.	forest inventory, forest resources, forest statistics, growing stock, Ireland	http://www.agriculture.gov.ie/nfi/nationalforestinventoryresultsdata/	Database

2681	Ireland's National Forest Inventory Results (2007)	The inventory, carried out by the Department of Agriculture, Fisheries and Food, involved a detailed field survey of Ireland's forests to assess the composition and condition of the entire national forest estate, both public and private. The inventory, the first such ever to be carried out at national level in this State, began in November 2004 and was completed on schedule in November 2006.	forest inventory, forest resources, forest statistics, growing stock, Ireland	http://www.agriculture.gov.ie/nfi/nationalforestinventorypublications/	National Forest Inventory Republic of Ireland - Results (2007). Forest Service Department of Agriculture, Fisheries and Food, Johnstown Castle Estate, Co. Wexford, Ireland.	Other
5062	Irish Meteorological Service	Met Éireann, the Irish National Meteorological Service, is part of the Department of the Environment, Heritage and Local Government. It is the leading provider of weather information and related services for Ireland. The mission is to monitor, analyse and predict Ireland's weather and climate, and to provide a range of high quality meteorological and related information to customers.	Irish, weather, climate	http://www.met.ie/		
6081	Irish pesticide database	The Product Database contains details of registered plant protection products and is updated on a regular basis. It can be searched by Product Name, Active Substance or Function/Crop. Non-plant protection pesticides are not included, as the legislation under which they were formerly registered has been replaced. A list of such products that have been notified in accordance with the new biocides legislation is currently being drawn up and they will be included in the database at a future date	Ireland, pesticides, regulatory	http://www.pcs.agriculture.gov.ie/db.htm		Database
7221	Islamic Republic Of Iran Meteorological Organization	New Meteorological activities in Iran emerged since 1919. However, General Office for Meteorology was established in 1958 and began its operation under authority of the Ministry of Roads and Transportation. In 1959, Iran acceded the convention of the World Meteorological Organization (WMO) and became a Member Country. Nowadays, the Islamic Republic of Iran Meteorological Organization (IRIMO) is the State Meteorological Service.	Islamic Republic Of Iran, drought, forecasts, climatic services	http://www.irimet.net/		Website
5121	Israel Meteorological Service	The foundations of the IMS were laid down on March 14th 1937 with the establishment of the Aviation Forecasting Service at the Lod Airport under the Department of Civil Aviation of the British Mandate Government (BMG). In 1962, the Institute was opened officially. The opening ceremony was attended by the Prime Minister Mr. David Ben-Gurion, and the President of the World Meteorological Organization. As planned, all units and facilities of IMS dispersed throughout the country, including the National Forecasting Center were concentrated at the Central Meteorological Institute at Bet Dagan. Only a forecasting unit for aviation purposes remained at the Ben-Gurion Airport. In 1969 the first computer, Sigma 5, was installed at the Israel Meteorological Service, and this development should be regarded as an important step towards transforming IMS to an advanced, high-tech institution, whose development in the various fields of meteorology continues to these days.	Israel, agroclimatology, forecasts	http://www.ims.gov.il/IMSEng/All_tahazit		Website

5881	Istituto Meteorologico Nacional de Costa Rica	National Institute of Public Costa Rica He deals with weather and harvesting and processing of weather data.	Costa Rica, weather, forecasts	http://www.imn.ac.cr		Website
7701	Italian National Institute of Statistics	You can find general information about the Italian National Institute of Statistics activities and its organisation chart, and programmes of conferences, workshops and other events open to the public. The press releases calendar including abstracts of the main ones, some data banks and information systems, and a limited range of books published by Istat in English are available. You will also find services that satisfy the users' requests and international standard glossaries and classifications.		http://www.istat.it/		Website
5801	Japan Meteorological Agency	As part of the Government of Japan, the Japan Meteorological Agency (JMA) implements services with the following ultimate goals in compliance with the Act for Establishment of MLIT and the Meteorological Service Law: Prevention and mitigation of natural disasters, Safety of transportation, Development and prosperity of industry, and Improvement of public welfare. To meet these goals, JMA focuses its efforts on monitoring the Earth's environment and forecasting natural phenomena in the atmosphere, oceans and earth, as well as on conducting research and technical development in relevant fields. JMA is also active in international cooperation regarding both meteorology and seismology to meet Japan's international obligations and to promote partnership with National Meteorological and Hydrological Services as well as the various international agencies concerned. Particular emphasis is placed on prevention and mitigation of natural disasters, since a variety of natural hazards such as typhoons, heavy rains and earthquakes jeopardizes our nation. JMA, as a single national authority to issue weather-related and tsunami warnings and advisories, has the responsibility of providing reliable and timely information to governmental agencies and citizens/inhabitants for natural disaster prevention and mitigation. In the event of major earthquakes or tsunamis, senior government officials of relevant ministries and agencies are summoned to the Prime Minister's Official Residence to respond to the disaster in an appropriate and coordinated way, based on earthquake information and tsunami warnings issued by JMA. Thus, JMA plays a vital role in natural disaster prevention and mitigation activities in the country through cooperation and coordination with the relevant authorities including the central and individual local governments.	Japan, prevention, climate, forecasts	http://www.jma.go.jp/jma/indexe.html		Website
8221	Joint Nature Conservation Committee- Wildlife and Countryside Act	The Wildlife and Countryside Act 1981 remains one of the most important pieces of wildlife legislation in Great Britain, but it is important to be aware that this document is as it was and does not represent the Act as it currently stands.		http://www.jncc.gov.uk/page-1377		Website

8061	Jordbruks Verket	this site consists in a photographic database of the most important plant diseases and a seeds database in Sweden.	diseases image Sweden	www.sjv.se	www.sjv.se/amnesomraden/vaxtmiljovatten	Database
7841	Julius Kühn-Institut (Germany)	survey on import and export of commodities subject to phytosanitary inspection		http://www.jki.bund.de/EN/Home/homepage__node.html		
3081	Julius Kühn-Institut - Plant Health Institut	consolidated texts of relevant German and EU legislation	regulation plant health	http://www.jki.bund.de/cln_044/nn_807144/DE/Home/pflanzengesundheit/regelungenStandards/regel_standard_node.html_nn=true		Website
4141	KasperIT	Kasper is a plant-protection-oriented web service, which aims to support farmers' decision-making in plant protection measures, the summer peak time. Kasper's services are predicting the future of plant protection and the need to tell the and growing phenomena. This is a service produced by Finland Ministry of Agriculture and Food Research. Weather deliver the Meteorological Institute and the findings of the observation and MTT ProAgria.	plant protection, Finland	www.portal.mtt.fi	https://portal.mtt.fi/portal/page/portal/kasperit	Website

5741	Kenya Meteorological Department	Our mission is: To Facilitate Accessible Meteorological Information and Services and Infusion of Scientific Knowledge to Spur Socio-economic Growth and Development. Provision of meteorological and climatological services to agriculture, forestry, water resources management, civil aviation and the private sector including industry, commerce and public utilities for the better exploitation and utilization of natural resources for national development; Provision of meteorological services to shipping in the western Indian Ocean including the issuing of cyclone warnings for the safety of merchant and other ships; Provision of meteorological services to military aviation for the safety of the Kenya Air Force aircraft for national defence; Organization and administration of surface and upper air meteorological observations within its area of responsibility and the publication of climatological data; Maintenance of an efficient telecommunications system for rapid collection and dissemination of meteorological information required for national and international use in accordance with the World Meteorological Organization (WMO) and the International Civil Aviation Organization (ICAO) procedures; Co-ordination of research in meteorology and climatology including co-operation with other authorities in all aspects of applied meteorological research, and the maintenance of the National Meteorological Library; Evolvement of suitable training programmes in all fields of meteorology and other related scientific subjects which are relevant to the development of Kenya and other countries that participate in the Department's training activities.	Kenya, climate research, forecasts	http://www.meteo.go.ke/index.html		Website
4781	Keys to Soil Taxonomy, Tenth Edition	Keys to Soil Taxonomy acquaints users of the taxonomic system with recent changes in the system.	soil surveys, soli classification	http://soils.usda.gov/technical/classification/tax_keys/index.html	Keys to Soil Taxonomy, 10th ed.. Soil Survey Staff, USDA-Natural Resources Conservation Service, Washington, DC., 2006.	Book
8481	LEI statistics	The LEI and CBS, at the request of the Ministry of Agriculture, Nature and Quality of food, provided a statistical overview of the development of agriculture and horticulture in the Netherlands, in particular focusing on business and products, imports and exports.		http://www3.lei.wur.nl/lte/		Website
6284	LUMONET	LUMONET is the Finnish Clearing-House Mechanism of the Convention on Biological Diversity. It is an Internet-based biodiversity information system maintained by the Finnish Environment Institute (SYKE). LUMONET is mainly about Finland. If you want to learn more about the Convention and global biodiversity issues, check out the European Community Clearing-House Mechanism (EC CHM) and the global Clearing-House Mechanism. LUMO is an abbreviation of "luonnon monimuotoisuus", which is Finnish for Nature's Diversity.	Finland, biodiversity	http://www.ymparisto.fi/default.asp?node=5319&lan=en		

6922	Landwirtschaftliche Bodennutzung - BaumobstflÄÄchen	German data on land use concerning fruit trees by the Federal Statistical Office	fruit trees, land use, Germany	https://www-ec.destatis.de/csp/shop/sfg/bpm.html.cms.cBroker.cls?cmspath=struktur,vollanzeige.csp&ID=1022153	Land- und Forstwirtschaft, Fischerei Landwirtschaftliche Bodennutzung - BaumobstflÄÄchen. Statistisches Bundesamt, Fachserie 3 Reihe 3.1.4, Wiesbaden, Germany, 2008.	Annual report
8501	Landwirtschaftskammer ÄÄsterreich	Agrar-statistics concerning the 9 provinces of Austria		http://www.agrarstatistik.at/		Database
6742	Latvian Food and Veterinary Service	veterinary surveillance and control of food safety. Data available about dog, cats and ferrets movements		http://www.pvd.gov.lv/en		Website
6701	Latvijas Statistika	The overall purpose (mission) of Central Statistical Bureau is to provide domestic and foreign data users with timely, exact, complete, comprehensible, and internationally comparable statistical information on economical, demographic, social, and environmental phenomena and processes of Latvia by applying contemporary solutions of information technologies and the best experience in the branch	agriculture, trade,	http://www.csb.gov.lv/csp/content/?lng=en&cat=355		
5782	Latvijas daba	Two databases (one of 1119 introduced plant records, and the other of 3250 introduced animal records) searchable by latin name, russian name, order, family, country of origin, and region of introduction. Information provided for species includes latin name, russian name, kingdom, order, family, point of exportation, country of exportation, region of exportation, manner of encroachment, detection point, area of introduction, country of introduction, region of introduction, biotype of introduction, year of introduction, population, dispersal dynamics, type of introduction, purpose of introduction, target organism, enemies and competitors, introduction results, economic importance, information source, year and scientific institution. (from the National Institute of invasive species science)	Latvia database, invasive, alien plants, fungi	www.latvijasdaba.lv	http://www.latvijasdaba.lv	Website

5101	Lithuanian Hydrometeorological Service	Lithuanian Hydrometeorological Service under the Ministry of Environment of the Republic of Lithuania (LHMS) is a state institution responsible for meteorological (including aeronautical and marine) and hydrological observations and forecasts. LHMS provides hydrometeorological information for Lithuanian institutions, enterprises and organizations, observes rules and regulations of the World Meteorological Organization (WMO), participates in international projects and programmes, carries out scientific research, compiles and publishes reference books, annals, and surveys. The observational network covers all Lithuanian territory. The largest network subdivisions are in Kaunas, Klaipeda, Panevežys, and Åilute. LHMS staff consists of 322 employees.	Lithuania, forecasts, meteorological	http://www.meteo.lt/english/index.php		Website
5181	Lithuanian Invasive Species Database	Online database containing an invasive species inventory, listed alphabetically by scientific name, and including taxon, date first recorded, country of origin, and linked references. The user can narrow the list down by selecting terrestrial groupings of fungi, plants, and animals; inland waters groupings of plants and animals; and coastal waters groupings of plants and animals. The Web site also provides access to information and other resources related to the project including the project team members, Lithuanian legislative and administrative acts related to biological invasions, and a bibliography. (from the National Institute of invasive species science)		http://www.ku.lt	www.ku.lt/lisd/	Database
2421	Long Term Forest Resources Assessment Database (LTFRA)	Long Term Forest Resources Assessment Database, LTFRA, is an interactive searchable databases on forest resources in the UNECE region. The database includes data from forest resources assessments implemented by the FAO and UN-ECE/FAO.	forest, forest inventory, UNECE, FAO	http://www.efi.int/databases/ltfra/		Database
1101	Long-Term Monitoring for Resistance of Botryotinia fuckeliana to Anilinopyrimidine, Phenylpyrrole, and Hydroxylanilide Fungicides in Switzerland				Plant Dis. 87:662-666. 2003	Journal article

5661	Luxembourg Airport Authority	Official website of the Luxembourg Airport, which exercises the function of weather station. The meteorological department supplies weather information necessary for safety, regularity and efficiency in airborne operations; it consists of the "Observation" department and the "Forecast" department. The "Forecast" department supplies the most probable weather conditions to be expected for a given time period and for a clearly determined area or part of the airspace. The "Observation" department is essentially in charge of meteorology observations.	Luxembourg, observation, forecasts	http://www.aeroport.public.lu/en/index.html		Website
4061	MARS Bulletin Europe - Agrometeorological bulletin	The results of the MARS (Monitoring Agriculture through Remote Sensing techniques) yield monitoring activities are synthesized as the MARS Bulletin, a report published regularly through the European growing season. MARS main crops yield forecasts are reported at national level for EU27	yield forecast	http://mars.jrc.it/mars/Bulletins-Publications/		Bulletin
7121	MSU Extension Plant Pathology Website	The Extension Plant Pathology program at Montana State focuses on diseases of economic importance in Montana as well as issues faced in the home landscape.	plant pathology, montana state university.	http://www.msuetension.org/plantpath/	http://www.msuetension.org/plantpath/	Website
8603	MTT Economydoctor	Weighted average results of the economy of agricultural and horticultural farms in Finland from years 1998-2008e.		https://portal.mtt.fi/portal/page/portal/economydoctor/farm_economy		Website
6222	Malaysian Meteorological Department	We are committed to providing effective meteorological and seismological services for improved protection of life, property and the environment, increased safety on land, at sea and in the air, enhanced quality of life and sustainable economic growth. We provide meteorological and seismological services for: safe and efficient operation in air, on land and at sea the military homeland security (such as natural disaster management, threats from climate change, extreme weather, earthquake and tsunami) public safety and comfort social economic development planning and environmental management To observe and archive meteorological and seismological data to meet the needs of present and future generations. To fulfill international obligations and to promote the understanding and advancement of meteorological, seismological and tsunami sciences.	Malaysia, meteorological services, seismological services, forecasts, prevision of tsunami	http://www.met.gov.my/		Website

6981	Malezas de México	The site contains informations and images of Mexican plants of disturbed places (i.e. weeds). Species profiles for over 600 species mainly from the south-center of the country include information on taxonomy, Spanish and indigenous species names, geographical distribution and introduction, biological status (e.g. native, non-native), habitat, biology, ecology, impacts, laws and policies and control.	Weeds, Mexico, invasive species	www.conabio.gob.mx/malezasdemexico/2inicio/home-malezas-mexico.htm	Website
5681	Malta International Airport	This site is not a meteorological / climatic character, but it includes a section devoted to the weather observations at the airport in Malta. You can have access to historical data by contacting the airport authority.	Malta, forecasts, observations	http://www.maltairport.com/	Website
2261	Mapa Forestal de España 1: 200.000	Forest map of Spain with tree species distribution. Available on line as maps or GIS data.	forest, forest inventory, tree species maps, Spain	http://www.mma.es/portal/secciones/biodiversidad/banco_datos/info_disponible/mfe200_descargas.htm	Database
2321	Mapa Forestal de España 1: 1.000.000	Forest map of Spain with tree species distribution. Available as map and GIS data.	forest, forest inventory, tree species maps, Spain	http://www.mma.es/portal/secciones/biodiversidad/banco_datos/info_disponible/mfe1000.htm	Database
2721	Mapa dos povoamentos florestais por espécie dominante (Inventário Florestal Nacional 3.ª Revisão)	The 1:1000000 forest (dominant tree species) map of Portugal from the National Forest Inventory. GIS Data available.	forest, forest maps, GIS, tree species, Portugal	http://www.dgrf.min-agricultura.pt/ifn/mapas.htm	Database
6001	MetService of New Zealand	MetService provides weather and information presentation services to customers around the world from its base in New Zealand. It has particular expertise in supporting the media, aviation, and energy industries, and in national meteorological service operation. Customers appreciate our services because they are based on combining professional meteorological judgement, technologically advanced processes, 24 by 7 quality management, and innovation in addressing their requirements. The company employs 200 staff, and headquarters are in Wellington.	New Zealand, forecasts, weather, climate	http://www.metservice.co.nz/public/index.html	Website

4941	Meteo France	Very extensive website complete with comments and real-time weather conditions in France. In the section reserved and paid extensive database weather. Not lacking in specific sections dedicated to the former French territories overseas.	France, meteo, climate, climatological services	http://france.meteofrance.com/		Website
7181	Meteorological Institute of the Republic of Cuba	The main mission of the Institute of Meteorology is to provide weather and climate information authoritative, reliable and timely information on the status and future behavior of the atmosphere. This information is intended to ensure the safety of human life and reduce the losses of tangible property to natural disasters of meteorological origin, contributing directly to community welfare and sustainable development. To fulfill its mission the Institute of Meteorology and operates the National Weather Service and carries out a comprehensive plan of research to improve the service itself and contribute to the development of scientific knowledge of meteorology.	Cuba, meteorological service, atmosphere, forecasts, air quality	http://www.insmet.cu/		Website
5841	Meteorological Service of Canada	The Meteorological Service of Canada is Canada's source for meteorological information. The Service monitors water quantities, provides information and conducts research on climate, atmospheric science, air quality, ice and other environmental issues, making it an important source of expertise in these areas.	Canada, climate, meteorological information	http://www.msc-smc.ec.gc.ca/		Website
5421	Meteorological Service of Cyprus	The Cyprus Meteorological Service of the Ministry of Agriculture, Natural Resources and Environment is mainly responsible for matters related to the weather and climate of Cyprus. The Meteorological Service is providing services and information relevant to the weather and climate aiming the wellbeing of the people of Cyprus and the protection of their life and property. For the achievement of the above objectives, the Meteorological Service collects and uses the meteorological information over the Cyprus domain effectively and properly and shares this information with other National Meteorological Services and the World Meteorological Organization (WMO).	Cyprus, meteorological services, climate	http://www.nwp.gov.cy/		Website

5361	Meteorological Service of Romania	The weather state conditions life, being an environmental resource. Consequently, oAne way or another, meteorology has always been a universal and never-ending part of reality. Nowadays the meteorological information is a necessity and a fundamental right of the human communities. Alike the national security, the civil protection is mandatory to the state. The meteorological protection is part of this obligation. The government fulfills this obligation by organizing a NATIONAL METEOROLOGICAL SERVICE. As a conclusion, the NATIONAL METEOROLOGICAL ADMINISTRATION has the task to ensure, oAn behalf of the government, the meteorological protection of life and property at the level of our country.	Romania, meteorological protection, meteorological data, forecasts	http://www.meteoromania.ro/		Website
4881	Meteorological and Hydrological Service of Croatia	Meteorological and hydrological institute of Croatia is fundamental institution for meteorology and hydrology in Croatia. It is founded by decree of Government of Peopleâ€™s Republic of Croatia (NRH) on 27th of August 1947. Part of staff (fifty employees) and equipment was taken up from Geophysical institute and Ministry of construction of NRH, which conducted part of services from field of meteorology and hydrology (opservations, weather forecast, etc.). Until Croatia became independent state, ie. till 1991., MHS operate as republic institution, and after that as state one. MHS, in the name of state of Croatia perform international cooperation after 1992., when Croatia becomes member of World meteorological organisation (WMO).	Climate, Croatia, Forecasts	http://meteo.hr/index_en.php		Website
1822	Microsatellite-based characterization of the Castanea sativa cultivar heritage of southern Switzerland	Since 1994, 47 varieties have been conserved in the chestnut germplasm of southern Switzerland (CSS), including Marroni, Euro-Japanese, and French varieties. A selection of 164 individuals from the CSS was analysed by 8 SSR markers (4 of which were developed in this study).	chestnut varieties, chestnut germplasm		Genome. 2007. 50: 12, 1089-1103.	Journal article
3721	Ministry of Agriculture and Forestry New Zealand - Biosecurity	MAF Biosecurity New Zealand is the division of MAF charged with leadership of the New Zealand biosecurity system. It encompasses facilitating international trade, protecting the health of New Zealanders and ensuring the welfare of our environment, flora and fauna, marine life and Maori resources.	new zealand biosicurity	http://www.biosecurity.govt.nz/		Website
6682	Ministry of Agriculture of Latvia	General informations about Agriculture, Fisheries, Food, Rural Development, Forests	agriculture	http://www.zm.gov.lv/		Website
6881	Ministry of Agriculture of Lithuania	Integrated management of land, forests, domestic water bodies, environmental protection	Ministry, statics	http://www.zum.lt/en/		Website

541	Molecular Characterization of Begomoviruses Associated with Leafcurl Diseases of Tomato in Bangladesh, Laos, Malaysia, Myanmar, and Vietnam	A PCR method for identify begomoviruses responsible for the leafcurl diseases of tomato.	Begomoviruses; Leafcurl; Tomato		Plant Disease, December 2001, Volume 85, Number 12, Page 1286	Bulletin article
641	Monilia fruticola a new quarantine pest in Europe. A thread also for Swiss fruit production?		Monilia fruticola Swiss fruit production		Obst- und Weinbau. 2003. 139: 23, 4-6. 6 ref.	Journal article
2941	Monitoring in greenhouses cultivating vegetables for quarantine species	Monitored species: Bemisia tabaci, Spodoptera littoralis, Liriomyza trifolii, Liriomyza huidobrensis, Liriomyza bryoniae, Thrips palmi, Clavibacter michiganensis spp. Michiganensis, Xanthomonas campestris pv.vesicatori, Tomato yellow leaf curl begomovirus, Pepino mosaic potexvirus, Potato Spindle Tuber Viroid	Greenhouse vegetables, bacteria, virus, Bulgaria			
3041	Monitoring of corn for Diabrotica virgifera virgifera		corn, bulgaria, diabrotica virgifera			
3301	Monitoring of fruit crops for quarantine pests	Monitored species: Acleris amylovora, Pseudomonas syringae pv. Persicae, Xanthomonas arboricola pv. Pruni, Monilinia fruticola, Plum pox potyvirus, Tomato ringspot virus, Tobacco ringspot virus, Pear Decline phytoplasma, Apple Proliferation phytoplasma, Apricot chlorotic leaf roll phytoplasma	Bacteria, fungi, virus, phytoplasma, Bulgaria			
3341	Monitoring of greenhouses, nurseries and garden centres for flowers and ornamental plants for quarantine pests	The following species were monitored in the period 2001-2007: Anoplophora chinensis, Bemisia tabaci, Spodoptera littoralis, Epichoristodes acerbella, Cacaecimorpha pronubana, Liriomyza trifolii, Liriomyza huidobrensis, Opogona sacchar, Thrips palm, Liriomyza bryonia, Rynchosporus ferrugineus	flowers, ornamental plants, Bulgaria, fungi, bacteria, virus			

3461	Monitoring of potatoes for quarantine pests	The following species were monitored in the period 2001-2007: <i>Clavibacter michiganensis</i> ssp. <i>sepedonicus</i> , <i>Ralstonia solanacearum</i> , <i>Synchytrium endobioticum</i> , <i>Globodera rostochiensis</i> , <i>Globodera pallida</i> , <i>Ditylenchus destructor</i> , <i>Meloidogyne chitwoodi</i> , <i>Meloidogyne fallax</i> , Tomato spotted wilt virus (TSWV), Potato Stolbur (MLO), Potato Spindle Tuber Viroid	potatoes, Bulgaria, bacteria, virus, fungi			
2921	Monitoring of quarantine species on grapevine	Monitored species: Tomato ringspot nepovirus, Tobacco ringspot nepovirus, <i>Xylella fastidiosa</i> , <i>Xylophilus ampelinus</i> , Grapevine Flavescence doree	monitoring, quarantine pest, grapevine, Bulgaria			
3481	Monitoring of strawberries for quarantine pests	The following species were monitored in the period 2001-2007: <i>Colletotrichum acututum</i> , <i>Phytophthora fragariae</i> var. <i>fragariae</i> , <i>Xanthomonas fragariae</i> , <i>Aphelenchoides besseyi</i> , Strawberry vein banding caulimovirus (SVBV), Raspberry ringspot nepovirus (RRV), Strawberry latent C virus, Strawberry witches broom phytoplasma, Arabis mosaic virus (ArMV), Strawberry mild yellow edge virus, Tomato black ring virus, Strawberry crinkle rhabdovirus, Strawberry latent ringspot nepovirus	strawberry, Bulgaria, fungi, bacteria, virus			
7201	National Agency of Meteorology of Senegal	<p>The Directorate of National Meteorology is responsible for monitoring the atmosphere, ocean surface, to anticipate developments and disseminate relevant information.</p> <p>It exercises the powers of the State Meteorological security of persons and property. As such, it provides in accordance with current regulations and appropriate under the Conventions, the needs expressed, particularly by his service in charge of Operations, and Support Studies and Research and Development.</p>	Senegal, atmosphere, meteorological services	http://www.meteo-senegal.net		Website
8321	National Agricultural Pest Information System	<p>This website publishes survey maps for pests of agricultural and forest commodities and provides links to pest news and information.</p> <p>The National Agricultural Pest Information System (NAPIS) stores and manages pest survey data that is collected by CAPS and other PPQ survey programs. Detection surveys are one tool used to manage the introduction of exotic pests.</p>	USA, distribution maps	http://pest.ceris.purdue.edu/index.php		Website

8641	National Agricultural Statistics Service	Agricultural statistics for USA		http://www.nass.usda.gov/index.asp		Database
8585	National Bank of Belgium	Belgian exports of live animals, animal products and vegetable products (value).		http://www.belgostat.be/belgostat/PublicatieSelectieLinker?LinkID=931000023 910000082&Lang=E		Database
7061	National Bank of Belgium	Statistics on Belgium Economy.	statistics, belgium	http://www.nbb.be/app/call/E/belgohome.htm		Website
7106	National Biodiversity Network	The NBN is concerned with making species data available to anyone interested in the UK's biodiversity.	UK, biodiversity	www.nbn.org.uk		Database
5401	National Information System of the Regional Integrated Pest Management Centers	At this National Site you can access the complete Crop Profiles and Pest Management Strategic Plans databases, an IPM Expertise database, information on pesticide use, current pest management research, funding opportunities, and links to many related sites. At each of the Regional Center Sites, you can access the same information as found on this National Site, but specific to the individual region. Additional region-specific information, news and announcements can be found within each Regional Center's Site.		http://www.ipmcenters.org/	http://www.ipmcenters.org/	Website
4861	National Institute of Meteorology and Hydrology of Sofia	Site that provides an overview of the main meteorological variables in the Bulgaria	Bulgaria, climate, maps, forecasts	http://www.meteo.bg/		Website
7421	National Invasive Species Council	The National Invasive Species Council (NISC) was established by Executive Order (EO) 13112 to ensure that Federal programs and activities to prevent and control invasive species are coordinated, effective and efficient. NISC members are the Secretaries and Administrators of 13 federal departments and agencies to provide high-level coordination on invasive species and is co-chaired by the Secretaries of Commerce, Agriculture, and the Interior.	educational, coordination	www.invasivespecies.gov		Website

3601	National Invasive Species Database	The National Invasive Species Database provides up-to-date centralised information on the distribution of invasive species in Ireland. Interactive GIS maps of their distribution can be accessed by clicking on the species search tab	invasive plants, Ireland	http://invasivespecies.biodiversityireland.ie/index2.php?page_id=2&tab_id=2	Database
5221	National Invasive Species Information Center	<p>The National Invasive Species Information Center (NISIC) was established in 2005 at the National Agricultural Library to meet the information needs of users including the National Invasive Species Council (Council). NISIC creates and manages the www.invasivespeciesinfo.gov Web site. The Web site serves as a reference gateway to information, organizations, and services about invasive species.</p> <p>The Center grew out of NAL's leadership in the development of the Invasivespecies.gov Web site for the Council. In June 2000, Invasivespecies.gov was launched as a joint collaboration between NAL, the U.S. Geological Survey, National Biological Information Infrastructure, and the Council. The site began with less than 200 links to external resources. By June 2005 the Web site had more than 12,000 unique links. A major redesign was needed to enhance access to this growing wealth of resources.</p> <p>A new Web site, www.invasivespeciesinfo.gov, managed by NISIC was launched in 2005 built largely on the general content from the original www.invasivespecies.gov Web site.</p> <p>Invasivespecies.gov is managed by the staff of the National Invasive Species Council to meet the administrative, communication, and facilitation needs specifically related to the business and activity of the Council.</p>		http://www.invasivespeciesinfo.gov/index.shtml	Website
7321	National Statistical Institute of Bulgaria	The Statistical Office of the Republic of Bulgaria.	statistical, bulgaria	http://www.nsi.bg/Index_e.htm	Website
7941	National Statistical Office of Malta	The National Statistics Office (NSO) is the executive arm of the Malta Statistics Authority. It is responsible for the collection, compilation, analysis and publication of a wide range of statistical information and related matters. This does not prevent other government departments or institutions from collecting their own statistical data for internal purposes.		http://www.nso.gov.mt	Website
4321	National Weather Service of United States	The National Weather Service (NWS) provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community	US, weather, climate, forecasts	http://www.weather.gov/	Website

2581	National inventory of woodland and trees -UK	The British Forestry Commission has been carrying out national woodland surveys since 1924. The latest National Inventory of Woodlands and Trees was completed in July 2000. Survey results have been published as a series of Inventory Reports and wallcharts for Scotland, England and Wales. A summary report for Great Britain was published in August 2003. Single tree species are considered.	forest inventory, forest resources, forest statistics, UK, growing stock,	http://www.forestry.gov.uk/forestry/hcou-54pg9t	National inventory of woodland and trees. Forestry Commission Publications, Wetherby, West Yorkshire, United Kingdom.	Other
5481	NatureServe Explorer an Online Encyclopedia of Life	NatureServe Explorer provides conservation status, taxonomy, distribution, and life history information for more than 70,000 plants, animals, and ecological communities and systems in the United States and Canada.		http://www.natureserve.org/explorer/	http://www.natureserve.org/explorer/	Website
3061	NeoFlora - Invasive gebietsfremde Pflazen in Duetschland	Information on distribution, impact and control options for 32 plants invasive in Germany	invasive plants germany	http://www.floraweb.de/neo/flora/index.html		Website
6481	Nevada Department of Agriculture	The Nevada State Board of Agriculture advises the Governor, Legislature, and Director of the Department of Agriculture concerning agricultural issues relating to Nevada and establishes the Department's agricultural policies. The Board is comprised of 11 individuals representing various sectors of Nevada's agriculture Industry.	nevada invasive species, nevada diseases sheet	www.agri.nv.gov	www.agri.nv.gov/PLANT_Pathology_Index.htm	Website
5761	New York State Integrated Pest Management Program	The New York State Integrated Pest Management Program develops sustainable ways to manage pests and helps people to use methods that minimize environmental, health, and economic risks.	IPM, plant diseases, pests, weeds	http://nysipm.cornell.edu/		Website
6203	New Zealand Weed Database	Information on New Zealand important weed species including a database of weed species, an identification quiz, study zone and a list of links to related online resources. Information on the 70 species in the database includes photographs, common name, scientific name, comments (description), distinguishing features, and control methods.	New Zealand Weed	http://weeds.massey.ac.nz/database.asp		Database

7103	Non-native species secretariat	Invasive non-native plant and animal species are the second greatest threat to biodiversity worldwide (after habitat destruction). They can negatively impact on native species, cause damage to the environment, the economy, our health and the way we live. The website presents fact-sheets about non-native species in UK	UK, invasive species	www.nonnativespecies.org		Website
7161	Norfolk Non-native Species Initiative	<p>The Norfolk Non-native Species Initiative was launched in 2008 to promote the prevention, control and eradication of invasive, alien species. It seeks to do this by:</p> <ul style="list-style-type: none"> * Collating and monitoring data on the distribution and spread of non-native species in the county; * Developing action plans to address the species of most urgent concern; * Facilitating control and eradication projects at high priority sites; and * Promoting awareness of the risks and impacts associated with non-native species. <p>The Initiative has been established under the umbrella of the Norfolk Biodiversity Partnership and works through a stakeholders' forum comprised of representatives from over 20 organisations. It is financially supported by the Broads Authority, the Environment Agency, Natural England, Norfolk County Council and the Water Management Alliance</p>	invasive plant	http://www.norfolkbiiversity.org/nonnativespecies/default.asp		Website
2621	Norsk institutt for skog og landskap (Norwegian Forest and Landscape Institute) Website	<p>The Norwegian Forest and Landscape Institute is an autonomous institute under the Ministry of Agriculture and Food and a national centre of expertise on land-based resources.</p> <p>The institute is a leading Norwegian scientific institution regarding use of forest resources, forest ecology and the environment, and is responsible for a range of national mapping programmes and resource inventories related to land cover, forestry, agriculture, landscape and the environment.</p>	forest inventory, land cover, forestry, agriculture, Norway	http://www.skogoglandskap.no/english/index.html		Website

6582	North America Plant Protection Organization	<p>NAPPO, a Regional Plant Protection Organization of the International Plant Protection Convention, coordinates the efforts among Canada, the United States and Mexico to protect their plant resources from the entry, establishment and spread of regulated plant pests, while facilitating intra/ interregional trade. The webpage of this Organization contains various documents of:</p> <ul style="list-style-type: none"> -Official Documents of the Organization -Panel Documents and Reports -Pest Alerts -NAPPO Standards and Decisions -Publications (presentation from the PRA Symposium, Mexico 2002). 	Pest Risk Analysis	www.nappo.org/	http://www.nappo.org/	Website
7241	North American Non-Indigenous Arthropod Database	<p>The North American Non-Indigenous Arthropod Database was developed by K. C. Kim Frost Entomological Museum, the Pennsylvania State University.</p> <p>In 1991 a project on non-indigenous insects and arachnids in the United States was conducted and the final report submitted to the U.S. Congress Office of Technology Assessment.</p> <p>The data collected for the above project was the basis for development of the North American Non-indigenous Arthropods Database (NANIAD). The development of NANIAD has proceeded since 1993, as the National Biological Control Institute, USDA Animal and Plant Health Inspection Service agreed to fund the NANIAD project.</p> <p>The NANIAD presently contains the data so far captured from diverse resources for 2,273 species of non-indigenous insects and arachnids.</p>	North America, arthropods	www.invasivespecies.org/NANIAD.html		Website
6321	Northeastern IPM Center	<p>The Northeastern Integrated Pest Management Center fosters the development and adoption of IPM, a science-based approach to managing pests in ways that generate economic, environmental, and human health benefits. We work in partnership with stakeholders from agricultural, urban, and rural settings to identify and address regional priorities for research, education, and outreach.</p>	IPM guidelines, USA IPM.	www.northeastipm.org	www.northeastipm.org	Website

5261	Norwegian Meteorological Institute	<p>The institute provides the public with meteorological services for both civil and military purposes. The institute is to provide services for the authorities, commerce and industry, institutions and the general public for the protection of their interests, for the protection of life and property, for planning and for the protection of the environment. The official duties of the Norwegian Meteorological Institute include:</p> <ul style="list-style-type: none"> * issue weather forecasts * study the national climatological conditions and produce climatological reports * provide meteorological observations from Norway, adjacent sea areas, and from the Svalbard area * carry out research and development in support of the institute's operational functions to ensure that the services are of the highest possible standard * make available the results of our work * provide special services for the public and private interests on a commercial basis * participate in international meteorological co-operation. 	Norwegia, meteorological services, research	http://retro.met.no/english/index.html		Website
2181	Novel Maps for Forest Tree Species in Europe	Novel European forest tree species maps were compiled by combining three existing Pan-European data sets.	Europe, forest inventory, tree species maps	http://ccu.jrc.it/Publications/tree_species_maps.pdf		Miscellaneous
8341	Noxious and Nuisance Plant Management Information System	The database is an information/expert system that allows minimally trained personnel access to a variety of topics concerning noxious vegetation management. It is highly interactive, allowing for plant identification which closely simulates the interaction between experts and nontechnical personnel, as well as providing information on the best herbicides to use and the available biocontrol agents.	USA, invasive plants	http://el.erd.c.usace.army.mil/pmis/		Database
8441	OAGMAX	Database compiled by OAG Worldwide - includes all scheduled flights and charter flights for large and small aircraft. Data can be delivered in a variety of formats and customized. OAG is best known for its airline schedules database which feeds the world's global distribution systems and travel portals.	trade data, air transport	http://www.oagaviation.com/Solutions/DataProducts/dataproducts.html		Website

1621	Occurrence and spread of Citrus Tristeza in the Mediterranean area	Tristeza is the most destructive virus disease of citrus, which affects trees of sweet orange, mandarin, grapefruit and other citrus cultivars. The disease has destroyed millions of trees throughout the world; it occurs in most citrus producing areas and represents a tremendous threat to the citrus industry of the Mediterranean basin, where areas are extensively grown with the intolerant scion-sour orange combination.	citrus tristeza virus, Toxoptera citricida, Aphis gossypii, Aphis citricola, mediterranean area.	www.ressources.ciheam.org	Myrta A. (ed.), Di Terlizzi B. (ed.), Savino V. (ed.) Production and exchange of virus-free plant propagating material in the Mediterranean region Bari : CIHEAM-IAMB, 2001. 212 p. (Options Méditerranéennes : Série B. Etudes et Recherches ; n. 35).	Journal issue
1721	Occurrence and spread of sugarcane smut caused by Ustilago scitaminea in Morocco	Smut caused by Ustilago scitaminea was introduced into Morocco, and all major sugarcane cultivars grown in the Gharb and Loukkous regions were infected. Only the Moulouya region of Morocco has remained free from infection.	Ustilago scitaminea, Saccharum officinarum, Prevalence, Dissemination, Geographic distribution, Morocco, Basidiomycetes, Thallophyta, Gramineae.	http://cat.inist.fr/?aModel=e=afficheN&cpsidt=2490916	Plant disease, 1996, vol. 80, no12, pp. 1363-1366 (24 ref.)	Journal issue

1241	Occurrence of Rice Kernel Smut Incited by <i>Tilletia barclayana</i> in Dakahlia	Rice kernel smut incited by <i>Tilletia barclayana</i> was registered in some rice fields in El-beda village, Temi El-Amdid district, Dakahlia Governorate, Egypt, during the 1999 summer growing season on Giza 171 and Giza 178 rice cultivars. Rate of infection ranged from 2 to 7%, while the disease severity was high in Giza 171 and Giza 178 followed by Sakha 101, and Riho cultivar had the lowest rate of infection and disease severity.	Rice, <i>Tilletia barclayana</i> , Giza 171, Giza 178, Riho.	www.asplantprotection.org/8thACPP_En.htm	8th Arab Congress of Plant Protection, Faculty of Agriculture, Omar Al-Mukhtar University, El-Beida, Libya; 12-16 October 2003.	Abstract only
6302	Office pour les insectes et leur environnement	The Office for insects and their environment is an association type Act 1901, approved by the Ministry of Environment and of Education. Created in 1969 under the name Office for information by an insect specialist group of insects of the National Institute of Agronomic Research (INRA) and amateurs, the OPIE occupies a privileged place at the intersection of all the activities on insects in France. For its strategic position, the OPIE conducts advocacy, information, advice, training, breeding insects and to protect and maintain the diversity of insects in their environment. Six regional offices can pass its objectives throughout France. Its core team is based in Guyancourt (The Mining) at the House of Insects, near Paris in the Yvelines.	Insects, Vespa	http://www.insectes.org/opathie/monde-des-insectes.html		Website
1962	One-way volume table series for conifer stands of Sicily.	The aim of this study is to set up one-way volume table series to predict stem volume of the main conifers in Sicily, namely Italian stone pine, Aleppo pine and Corsican pine.	conifers, Sicily, stem volume		Italia Forestale e Montana. 2009. 64: 2, 121-128.	Journal article

1121	Organismi patogeni di qualità degli agrumi, drupacee, olivo, vite e ortive	Contains data sheets describing the main pests affecting citrus fruits, stone fruits, olive tree, grapevine e horticultural crops in terms of causal agent, geographical distribution, means of distribution, host plants, symptoms, control, critical points, regulatory status and practical suggestions	citrus fruit, stone fruits, olive, grape, horticultural crops, pests		Atti del Convegno POM A32: I risultati di due anni di attività. Termoli, 1-2 Marzo 2001	Conference proceedings
6361	PLANTES ENVAHISSANTES DE LA REGION MEDITERRANEE	The Agency Mediterranean Environment (AME) and the Conservatoire Botanique National Méditerranéen de Porquerolles, with financial support from the Languedoc-Roussillon and the Directorate Regional Environment Languedoc-Roussillon, launched a project against invasive plant species. Three missions assigned to the program "Invasive Plants of the Mediterranean region" - A continuous watch on the invasive species. - Developing a program of actions on certain species (as has already been done for the primrose and Tansy Cape). - Creating a partnership with all professionals involved (nurserymen, horticulturists, landscapers, parks services communities, managers of natural areas ...) to encourage greater attention on species that can cause problems.	invasive plants, Mediterranean region	www.ame-lr.org/plantesenvahissantes/index.html		Website
3921	PLANTS Database	The PLANTS Database provides standardized information about the vascular plants, mosses, liverworts, hornworts, and lichens of the U.S. and its territories.	plants, vascular plants, USA	http://plants.usda.gov/index.html		Database
3441	Pacific Island Ecosystems at Risk	Species and common names are linked to a profile page for each species, such as the one for <i>Acacia ariculiformis</i> . These pages include basic information about the species, its presence in the Pacific, information on how to control it (if available), risk assessment information, links to photographs and additional information.	pier, pacific island ecosystems	http://www.hear.org/index.html		Website
2142	Pan-European Tree Species Maps	Based on the Forest Map of Europe and detailed plot data of the ICP Forests assessment, Pan-European tree species maps have been produced that show the distribution of the six main species groups in Europe (pine, spruce, fir, birch, beech and oak).	Europe, forest inventory, tree species maps	http://www.efi.int/portal/virtual_library/information_services/mapping_services/pan-european_tree_species_maps/		Database

9041	Parasitic Flowering Plants	Parasitic flowering plants are of great general and scientific interest besides their economic importance when attacking crop plants. This beautifully illustrated book covers all parasitic families and most of the genera and discusses all main aspects of their biology.	parasitic plants, flowering plants		www.brill.nl	Book
621	Pathotypes of Colletotrichum capsici, the Causal Agent of Chili Anthracnose, in Thailand	A screening of isolates of Colletotrichum capsici on some Capsicum species allows to value the capability of resistance in the trees and the relative aggressiveness of the different genotypes of pathogens.	Chili Anthracnose; Colletotrichum capsici; Capsicum; Thailand		Plant Disease, January 2009, Vol 93:17-20.	Journal issue
5041	Pest Distribution Maps - State Phytosanitary Organization of the Czech Republic	The site includes regularly updated online interactive distribution maps of important agricultural pests in CZ. The dataset is based on extensive and regular monitoring of pests in Czech Republic. Includes also climate-based predictions modelled for the future distribution of the 7 most important agricultural pests in CZ - English section is not complete				

7561	Pest Risk Analysis - Biosecurity Risk to New Zealand of Pinewood Nematode (Bursaphelenchus xylophilus)	<p>The pinewood nematode (PWN), <i>Bursaphelenchus xylophilus</i> (Steiner & Buhner, 1934), causative agent of Pine wilt disease (PWD) is a major forestry pest in Japan, China, Korea and Europe. <i>B. xylophilus</i> is native to North America where it is not known to damage indigenous conifer species. There are 55 confirmed species of <i>Bursaphelenchus</i>, of which <i>B. xylophilus</i> is considered to be the most significant pest.</p> <p>Currently seven <i>Bursaphelenchus</i> species are classified as unwanted organisms by New Zealand. They are <i>B. xylophilus</i>, <i>B. eggersi</i>, <i>B. hellenicus</i>, <i>B. leoni</i>, <i>B. mucronatus</i>, <i>B. sexdentati</i> and <i>B. teratospicularis</i>. In 1986 <i>B. xylophilus</i> was classified as a very high risk pest by the European Plant Protection Organization. In 1999 PWN was detected in Portugal in association with <i>Pinus pinaster</i>. There have also been reports of pathogenic <i>Bursaphelenchus</i> spp. in Greece in 2000 and associated with <i>Pinus</i> tree death in Australia in 2001.</p> <p>Concerns within the New Zealand Ministry of Agriculture and Forestry (MAF) over the level of biosecurity risk from PWN have risen with increasing global trade in PWN host material, the rapid spread of pine wilt in East Asia, and recent findings of pathogenicity of other <i>Bursaphelenchus</i> spp. It has also become evident that the presence of this disease in New Zealand could impact on our export of New Zealand forest products. This necessitated the completion of a pest risk analysis for <i>Bursaphelenchus</i> spp. to estimate the likelihood of entry, establishment and spread in New Zealand, and the economic and/or environmental consequences. <i>B. xylophilus</i>, the most intensively studied nematode of <i>Bursaphelenchus</i> spp has been used as a model species.</p> <p>The pest risk analysis details available information on the following factors relevant to the biosecurity risk to New Zealand of <i>Bursaphelenchus xylophilus</i> and other pathogenic <i>Bursaphelenchus</i> spp.:</p> <ul style="list-style-type: none"> â€¢ The level of pathogenicity of identified <i>Bursaphelenchus</i> spp.; â€¢ Potential pathways for the entry of PWN into New Zealand; â€¢ Likelihood of establishment and spread of PWN in New Zealand; â€¢ The potential economic and/or environmental impacts of the establishment of PWN in New Zealand. <p>Analysis of these risk factors identified the following conditions:</p> <ul style="list-style-type: none"> â€¢ New Zealand has suitable abiotic (temperature and annual precipitation) requirements for the establishment of PWN, and host species (principally Pine (<i>Pinus radiata</i>) and Douglas fir) are distributed throughout New Zealand; â€¢ The establishment of PWN in New Zealand will mainly be dependent on the availability of a suitable insect vector. No species of <i>Monochamus</i> beetles are currently established in New Zealand. It is not known to what extent local native and exotic insects could act as a vector of PWN in New Zealand. The most possible candidates are the <i>Cerambycids</i> e.g. <i>Arhopalus ferus</i> and <i>Hexatricha puerulenta</i> which are both abundant in New Zealand. â€¢ If PWN becomes established in New Zealand it is unlikely to show pine wilt symptoms under current New Zealand climatic conditions. 		http://www.biosecurity.govt.nz/files/regs/imports/risk/pinewood-nematode.pdf		Website
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2281	Pest Risk Analysis for Stone Fruit from New Zealand into Western Australia	This pest risk analysis presents an assessment of biosecurity risks associated with commercially produced stone fruit (apricot, nectarine, peach and plums) from New Zealand free from regulated articles (any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harbouring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved). The report also proposes, as appropriate, risk management measures.	Stone fruit, PRA, New Zealand, Western Australia	http://www.daff.gov.au/_data/assets/pdf_file/0010/25210/2006_23a.pdf	Biosecurity Australia (2006). Final Report for the Pest Risk Analysis for Stone Fruit from New Zealand into Western Australia. Biosecurity Australia, Canberra, Australia.	
6562	Pesticide Action Network (PAN)	A network of over 600 participating nongovernmental organizations, institutions and individuals in over 90 countries working to replace the use of hazardous pesticides with ecologically sound and socially just alternatives.	pesticide pest management	http://www.pan-international.org/panint/?q=en/node/33		Website
8642	Pesticide Safety Directorate	Searchable databases of products approved for use in the UK		http://www.pesticides.gov.uk/corporate.asp?id=74		Database
1421	Pests and Diseases Image Library	PaDIL (Pests and Diseases Image Library) is a Commonwealth Government initiative with support provided by DAFF (Department of Agriculture, Fisheries and Forestry) and PHA (Plant Health Australia), a non-profit public company.	Plant diseases, plant pests, images	http://www.padil.gov.au/default.aspx		Website
6504	Phytophthora ramorum Werres, de Cock & Man inäc™ Veld Pest Risk Assessment for Oregon	At present, the entire host range of this pathogen is unknown. However, P. ramorum does naturally infect and kill or injure at least 28 host species and has been recovered from an additional 30 plant species. A great deal more information about the etiology of this pathogen, including requirements for infection and means of spread, is now available. This information strongly suggests that the southwestern corner, coastal areas, and Willamette Valley of Oregon are all at high risk for establishment of this pathogen.	Oak Sudden death; forest disease	www.suddenoakdeath.org	www.suddenoakdeath.org/pdf/SOD_PRA_OR_2=04.pdf	Journal article

8721	Phytosanitary Administration of the Republic of Slovenia	The Phytosanitary Administration of the Republic of Slovenia provides for the protection of plants against pests, protection of plant products and regulated articles so as to prevent harmful effects of the application of plant protection products and fertilisers. It furtheron provides for the implementation of other measures for the protection of plants, which are important in the light of human and animal health and for the environment, and in particular for the consumer protection by means of the production of safe food.	Slovenia, control measures	http://www.furs.si/en/		Website
1681	Plant Diseases in India and Their Control	The concept of development is reviewed in terms of sustainability. Food production in India driven by pressure from an increasing human population uses 90000 t per year of technical-grade pesticide: 12% of this is fungicide and a good part is insecticide for the control of vectors of plant viruses. A change in the cropping pattern and irrigation have provided a summer green bridge along Tamil Nadu/Andhra Pradesh border areas for the tungro virus that affects rice and its vector. Epidemics occur along the coramandal coast, if the weather is suitable. Red rot disease of sugarcane is promoted by poor drainage, river widening, ratooning, contaminated planting material and variation in the pathogen throughout the Indo-Gangetic plain. Apple production uses large amounts of fungicide. For every 1000 t of apples produced 1t of fungicide is sprayed 8-10 times sequentially. Systemic application of fungicides has led to pesticide resistance and resurgence of other diseases. 70-80% of the Nagpur Mandrin produce reaches the market by trucks that have to traverse 1000 km. 10.6% of fruits are lost to post-harvest diseases; culling, sunburn and injuries account for another 11.6%. In the control of leaf rust of wheat in North India, the use of varietal mosaics, resistance genes and extra-late wheat sowings that do not coincide with favourable weather have all collectively contributed to loss reduction. The drop in the production of exportable crops such as peppers and coconuts because of diseases needs attention. The traditional wisdom on crop mixtures, organic manuring, shifting sowings, etc, needs scientific re-evaluation.	plant diseases; organic manuring; drainage; agriculture; India		Ciba Foundation Symposium 177 - Crop Protection and Sustainable Agriculture, Pages208 - 227.	Book
3501	Plant Health Australia	The company is currently addressing priority plant health issues, building a genuine partnership approach between industry and government and ensuring Members can be involved in, and can contribute to, policy making and direction setting on major plant health issues. in this website is available a database of plant diseases(PIDD).	Plant health australia,	http://www.planthealthaustralia.com.au/go/phau		Website

581	Plant Health Progress	Review of causal agents of black pod, witches' broom and frosty pod rot of cacao.	Cacao, fungal diseases, resistance	http://www.apsnet.org/online/feature/cacao/	2001. The impact of plant diseases on world chocolate production. Online. Plant Health Progress doi:10.1094/PHP-2001-0709-01-RV	Other
1242	Plant Pathology	Short note on first report of a phytoplasma-associated disease of <i>Miconia calvenscens</i> in Brazil.	<i>Miconia calvenscens</i> , velvet tree, phytoplasma, biocontrol	http://www3.interscience.wiley.com/cgi-bin/fulltext/118944680/HTMLSTART	Santos-Seixas C.D., Barreto R.W., Matsuoka K., 2002. First report of a phytoplasma-associated witches' broom disease of <i>Miconia calvenscens</i> in Brazil. Plant Pathology 51 (6), 801.	Journal article

1161	Plant Pathology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida	Fact sheet discussing an exotic citrus disease.	Citrus Variegated Chlorosis, Xylella fastidiosa, citrus	http://edis.ifas.ufl.edu/PP137	Chung K.R., Brlansky R.H.. Fact Sheet PP-223. Citrus Diseases Exotic to Florida: Citrus Variegated Chlorosis (CVC). Plant Pathology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida.	Other
3981	Plant Protection Diagnostic Service	The links below direct to a gallery of documented plant diseases diagnosed at the Plant Disease Diagnostic Lab of the Plant Protection and Inspection Service (PPIS), Israeli Ministry of Agriculture and Rural Development. the order is alphabetical.		http://www.ppis.moag.gov.il/ppis/plant_disease_gallery/	http://www.ppis.moag.gov.il/ppis/plant_disease_gallery/	Website
3741	Plant Protection Service of The Netherlands	Main objective of the Plant Protection Service of The Netherlands is: safeguarding and promoting plant health from an international perspective. Principle elements of this policy include: preventing the spread and introduction of pests of plants and plant products and to promote appropriate measures for their control.	plant protection Netherlands	http://www.minlnv.nl/portal/page?_pageid=142,2267942&_dad=portal&_schema=PORTAL		Website

2901	Plant Quarantine Data Retrieval System	PQR version 4.6 provides updated information for a large number of pests (including invasive alien plants). All new information collected by the EPPO Secretariat since the release of the previous version has been included in PQR 4.6 (i.e. data published in the EPPO Reporting Service from December 2005 to August 2007 or obtained from CABI maps). No new features have been developed in version 4.6 but the EPPO Secretariat is currently preparing a new interface for PQR to allow more regular updates and the display of maps. For each pest, it is possible to obtain lists of host plants, commodities able to act as pathways in international trade, and details of geographical distribution. Conversely, it is also possible to interrogate the database to obtain specific lists of pests, by stipulating the host species, the commodity, and the country of interest. PQR contains general nomenclatural and taxonomic details on pests and hosts.	Eppo, host plant, pest plant, quarantine pest	/www.eppo.org/DATABASES/pqr/pqr.htm	www.eppo.org	Software
4161	Plant Trait Database in east and south-east Asia	The Plant Trait Database in east and south-east Asia provides ecological traits of higher plants growing naturally in east and south-east Asia. Single record is the ecological or biological trait of a given species at a given locality. Some traits (e.g. maximum height) of the same species vary by location and site quality, so that the trait value in the database is sometimes specific to the locality. Geographical information (longitude, latitude, altitude) is included in every record. Thus records of the same traits of the same species may appear several times, if the trait was measured at several localities.	invasive plants, aliene plants, Japan, Asia	www.veget.kan.ynu.ac.jp	http://veget.kan.ynu.ac.jp/traits/PlantTraitAsia.pdf	Database
1541	Plant Virus Epidemiology	This book contains: Wild Plants and Viruses: Under-Investigated Ecosystems Genetic Diversity of Plant Virus Populations: Towards Hypothesis Testing in Molecular Epidemiology Plant Virus Epidemiology: The Concept of Host Genetic Vulnerability The History and Current Distribution of Begomoviruses in Latin America Evolutionary Epidemiology of Plant Virus Disease Control of Plant Virus Diseases The Control of Tropical Plant Virus Diseases Begomovirus Evolution and Disease Management Transgenic Papaya: Development, Release, Impact and Challenges Cassava Mosaic Virus Disease in East and Central Africa: Epidemiology and Management of a Regional Pandemic Host-plant Viral Infection Effects on Arthropod-vector Population Growth, Development and Behaviour: Management and Epidemiological Implications The Migration of Insect Vectors of Plant and Animal Viruses	Epidemiology, Plant virus, Book		www.infibeam.com and www.elsevier.com	Book

3581	Plant Viruses Online	These pages contain information on most species of virus known to infect plants, not only those whose virions have been described, but also those like umbraviruses that have no virion protein genes of their own, and use the virion proteins of their symbiotic helper viruses instead. We include data on host range; transmission and control; geographical distribution; physical, chemical and genomic properties; taxonomy and relationships; and selected literature references.		http://www.agls.uidaho.edu/ebi/vdie/		Database
3781	Plantas Invasoras em Portugal	Information on distribution, control options of over 550 invasive plant species in Portugal	invasive plant Portugal	http://www1.ci.uc.pt/invasoras/index.php?menu=45&language=eng&tabela=geral		Website
7021	PlantevÃrn Online	This danish site contains fact sheets on pests and diseases most common in crops in Denmark	PlantevÃrn Online	www.pvo.planteinfo.dk/cp/Graphics/NameList.asp?id=djf&TaskID=5&namegroupid=2&sortingid=4&language=da	www.lr.dk/kvaeg/diverse/090908.htm	Website
8663	Points of Entry to Czech Republic	Points of entry where import phytosanitary control is done in the Czech Republic		http://www.srs.cz/portaldoc/fytopanitami_informace/dovoz_ze_tretich_zemi/seznam_vstupich_mist_eu/CZ_VM_provozni_doby_cs.htm		Database
6782	Polish Ministry of Agriculture and Rural Development	Ministry of Agriculture and Development. General informations about polish agriculture and crop production	Ministry, Agriculture	http://www.minrol.gov.pl/DesktopDefault.aspx		Website

1141	Potato Brown Rot Disease in Egypt: Current Status and Prospects	The disease was first recorded on potato in Egypt, by Brition-Jones. However, the causal bacterium was isolated for the first time in Egypt from potato tubers showing brown rot symptoms by Sabet. In Germany, Gehring isolated <i>Pseudomonas solanacearum</i> (Smith) Smith from imported Egyptian potato tubers showing brown discoloration of the vascular ring. The pathogen nomenclature was changed successively from time to time ended by <i>Ralstonia solanacearum</i> named by Yabuuchi et al. who suggested the name to the causal organism instead of <i>P. solanacearum</i> .	Quarantine, Integrated management, <i>Ralstonia solanacearum</i>		American-Eurasian J. Agric. & Environ. Sci., 4: 44-54, 2008	Journal issue
9161	Potato Health Management second edition	This manual tackles the hundreds of problems that affect this important crop including weeds, insects, nematodes, fungi, bacteria, phytoplasmas, and viruses. It includes timely new chapters on economics, home gardening, and organic production.	Potato Health Management, potato		The American Phytopathological Society	Book
2161	Predicting the growth of stands of trees of mixed species and size: a matrix model for Norway.	The objective of this study was to predict the growth of forest stands of mixed tree species and size with natural recruitment. The stand state was defined by the number of spruce, pine, birch and other broadleaved trees by hectare in 15 diameter classes	forest, forest inventory, growth prediction		Scandinavian Journal of Forest Research. 2008. 23: 2, 167-178.	Journal article
2121	Preliminary results of a large-scale forest inventory as the basis for establishing a bank of data on forest resources and forest condition.	This paper presents the preliminary results of the large scale forest inventory in Poland for all ownership categories since 2005 by the Forest Management Planning and Geodesy Bureau by order of the General Directorate of State Forests.	forest, forest inventory, Poland		Sylvan. 2008. 152: 1, 64-71.	Journal article
4001	Principles of plant health and quarantine	An understanding of international plant health management is essential in the increasingly free-trade environment of today. And administrative methods of plant pest control are of growing importance in crop production. No other recent book introduces students and practitioners to the subject of plant health and quarantine as this one does. Topics covered include: international phytosanitary controls; the EU plant health regime; structure and operation of national plant protection organizations; eradication and containment; certification and marketing schemes; indexing, diagnosis and pest risk analysis.			Ebbels DL, Principles of plant health and quarantine, CABI Publishing, UK,	Book

6585	ProMED.mail	ProMED-mail is a Program for Monitoring Emerging Diseases. It is an Internet-based reporting system dedicated to rapid global dissemination of information on outbreaks of infectious diseases and acute exposures to toxins that affect human health, including those in animals and in plants grown for food or animal feed. Electronic communications enable ProMED-mail to provide up-to-date and reliable news about threats to human, animal, and food plant health around the world, seven days a week.	International diseases	www.promedmail.org	www.promedmail.org	Website
6123	Prodotti fitosanitari utilizzabili in agricoltura biologica	This website provides information and help to improve knowledge about the technical means used in organic farming. The work aims to shed light on aspects of plant defense, taking into consideration the products listed in the Annex II of Regulation (EC) No 889/2008 laying down detailed rules for implementing Regulation (EC) No 834/2007.	organica farming, control, Italy	http://www.crapav.it/fpdb/bancadatibiologica/iniziale.asp		Database
4381	Production and value added in German agriculture.	The paper presents results from agricultural accounts in 1998/99 and first results for 1999/2000. The changes in crop production, food production, production value, expenditures on input and value added are discussed in detail.	agricultural production. crops. farm inputs. food production. production costs. value added.		Produktion und Wertschöpfung der Landwirtschaft in Deutschland. Agrarwirtschaft. 2000. 49: 5, 179-195. 12 ref.	Journal article

881	Production of genetically modified potato plants for fungal resistance	<p>otato (<i>Solanum tuberosum</i> L.) is one of the most important vegetable crops grown on a large scale in Egypt, for either local consumption or exportation. Potato is infected with several fungal diseases that cause serious damage to crop quantity and quality. Among these diseases, Fusarium wilt caused by <i>Fusarium oxysporium</i> (Goss, 1963), early blight (<i>Alternaria solani</i>), late blight (<i>Phytophthora infestans</i>), and Black scurf due to <i>Rhizoctonia solani</i> (Rotem and Reichert, 1964, Frank et al., 1976). Chitinases are among host-synthesized polypeptides induced in the plant in response to pathogen attack (Boller, 1985). The enzyme hydrolyses the b-1,4 linkage of chitin, which is the major component of many fungal cell walls. There is no obvious natural substrate for the enzyme in higher plants. On the other hand, purified chitinase shows in vitro antifungal activity (Schlumbaum et al., 1986). The use of potato cultivars possessing genetic resistance to fungal diseases is an alternative method to used chemical control (Trinca et al., 1991).</p>	Potato, genetically modified, fungal resistance		Arab Journal of Biotechnology volume 5 number 1 january 2002	Journal issue
1821	Quarantine Pests for Europe	<p>This book is the result of collaboration between EPPO and CAB INTERNATIONAL, sponsored by the Commission of the European Union, to prepare data sheets on pests of plants of quarantine significance for Europe and the Mediterranean region. Coverage extends to insects, mites, fungi, bacteria, viruses, nematodes and parasitic plants. It includes organisms that are found outside Europe and the Mediterranean that present a risk to this region, as well as those that are present but have restricted distribution and are subject to phytosanitary controls. The format of the FAO model data sheet is followed, using standard headings: identity, hosts, geographical distribution, biology, detection and identification, means of movement and dispersal, pest significance (including economic impact, control and phytosanitary risk), phytosanitary measures, and bibliography.</p>	quarantine pests, plant protection, UE		www.cabi.org	Book

6921	Regional Agency for Prevention and Environment of Emilia Romagna	<p>Arpa stands for Agenzia Regionale per la Prevenzione e l'Ambiente dell'Emilia-Romagna (Regional Agency for Environmental Protection in Emilia-Romagna) established under Regional Law no. 44 of 19-4-1995 and subsequent amendments. Arpa is an environmental control technical support body to the regional, district and local authorities and is administratively and technically independent.</p> <p>Arpa's functions, activities and tasks cover all aspects concerning environmental control, including:</p> <ul style="list-style-type: none"> * monitoring of the various environmental components * management and surveillance of human activities and their territorial impacts * activities in support of the environmental impact assessment of plans and projects * creation and management of a regional environmental information system. <p>Also of great importance are the custom-made activities undertaken by Arpa on behalf of local clients:</p> <ul style="list-style-type: none"> * soil, water and air quality improvement plans * complex territorial analyses * study and characterisation of ecosystems * research into themes associated with the development of environmental prevention in production cycles (Life Cycle Assessment, Best Available Technique, etc.). <p>The Agency's activities are aimed at local, regional and national institutional customers, the business world and private citizens.</p> <p>Arpa also collaborates with the Italian Agency for the Environment and Territory, the European Environmental Agency and Italian, European and international institutes and research centres.</p>	Italy, Emilia-Romagna, forecasts, climatology	http://www.arpa.emr.it/		Website
6941	Regional Agency for Prevention and Environment of Lombardia	<p>The Regional Agency for Environmental Protection of Lombardia, active from 1st December 1999, is a public institution with administrative autonomy, organizational and accounting involved in activities and services to support environmental policy choices of the Lombardy Region, provinces, municipalities, mountain communities, the local health and other public bodies in the region.</p>	Italy, Lombardia, forecasts, snow, climatological maps	http://www.arpalombardia.it/meteo/meteo.asp		Website

681	Regulatory measures against <i>Erwinia amylovora</i> in Switzerland	Switzerland joined the list of fireblight-affected European countries in 1989. Vigorous and systematic steps were taken to limit the impact of the disease on fruit production and amenity plants. These efforts are codified in a Swiss law detailing prevention, eradication, control measures and issues of compensation.	Regulatory measure <i>Erwinia amylovora</i>		2005 OEPP/EPPO, Bulletin OEPP/EPPO Bulletin 35, 239â€²244	Bulletin article
5301	Republic Hydrometeorological Institute of Macedonia	Hydrometeorological activities have long and rich tradition on the territory of Republic of Macedonia. First meteorological measurements and observations were performed in the early 1891, and organized hydrometeorological station network has existed since 1923. Until 1947 from time to time there were interruptions in measurements and observations depending on the circumstances. That year Hydrometeorological Service of the National Republic of Macedonia was established and a new hydrometeorological network was formed. Today in the Hydrometeorological Service there are 236 employees of which 63 experts have university education. Last years the role of the Hydrometeorological Service exceeded the framework of classic observing of weather, climate and water and their forecasting. It is impossible to imagine social and economic development of Republic of Macedonia without information that this institution gives for solving the problems in the fields of climate change, water resources management, phenomena mitigation and environment degradation.	Macedonia, hydrometeorological, agrometeorological	http://www.meteo.gov.mk/index.asp?X=1		Website

5381	Republic Hydrometeorological Service of Serbia	On 7 January 1947, the Regulation of the Government of Federative People's Republic of Yugoslavia, Federal Hydrometeorological Institute (FHMI) was founded unifying the hydrometeorologica service on the territory of the whole country. At the invitation of the organizers, representatives of the FHMI signed on 22 September 1947 in Washington, a Convention on the establishment of the World Meteorological Organization (WMO). Convention was ratified on 23 March 1950. Our meteorological service was one of 45 world meteorological services, founders of WMO. In this way, the continuity of the affiliation of our service to the headquarters of world services was kept from the International Meteorological Organization to WMO. Newly founded states that became independent after seceding from former Yugoslavia, starting from 1991, became new members of WMO. Meteorological Service of Socialist Republic of Yugoslavia (SRY), now State Union of Serbia and Montenegro, is the successor of founding rights of WMO. WMO has never imposed sanctions against our service and has never ousted it from any working body although UN imposed economic sanctions against SRY	Serbia, hydrometeorological, forecasts, weather	http://www.hidmet.gov.rs		Website
8681	Research Institute of Agricultural and Food Economics	Yield and quality loss: any data on losses due to pests, potential or actual.	Slovak Republic, yield losses	http://www.sppk.sk/index.php?genPage=main		Website
3521	Results of the survey on forest pests, diseases and other damages and the required forest protection measures in 2008	2008 and 2009: Tables include: pest / region / infested area (at low and high degree of infestation) / protection measures required " air application " chemical control, air application " biological control, ground chemical, mechanical, integrated. 2005, 2006, 2007: Tables do not include the region of Bulgaria where the pests were found	forest, pest, Bulgaria			

1261	Rice False Smut Disease in Egypt.	Rice false smut (RFS) caused by <i>Ustilagoideia virens</i> (Cooke.) Tak, the imperfect stage of <i>Claviceps oryzae sativae</i> is an important disease wherever rice is cultivated. RFS is a new disease in Egypt, it was reported for the first time in the Nile Delta in 1997, and since then it appeared annually and its incidence was high during 2000 and 2001 growing seasons.	Rice false smut, <i>Ustilagoideia virens</i> , <i>Claviceps oryzae sativae</i> , rice,	www.asplantprotection.org/8thACPP_En.htm	8th Arab Congress of Plant Protection Faculty of Agriculture, Omar Al-Mukhtar University, El-Beida, Libya; 12-16 October 2003.	Abstract only
6561	Risk Analysis for <i>Phytophthora ramorum</i> Werres, de Cock & Man in't Veld, Causal Agent of Sudden Oak Death, Ramorum Leaf Blight, and Ramorum Dieback	This is an update of the pest risk analysis (PRA) conducted in May 05, 2005 by the United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Center for Plant Health Science and Technology, Plant Epidemiology and Risk Analysis Laboratory (USDA, APHIS, PPQ, CPHST, PERAL) to assess the risk of the importation and domestic spread of <i>Phytophthora ramorum</i> Werres, de Cock, & Man in't Veld, 2001. <i>Phytophthora ramorum</i> is the subject of USDA Emergency Regulations due to its threat to agricultural and natural ecosystems of the United States. This analysis will focus on 1) the risks associated with the importation of plants (including plants in APHIS-approved growing media and bare-root plants) and plant products (wood, lumber, chips, bark and other wood products, and greenery) made from hosts of <i>P. ramorum</i> ; 2) the risks associated with the domestic movement of the pathogen through plants, plant products, soil, other growing media, compost and water; and 3) mitigation measures to prevent the movement and spread of <i>P. ramorum</i> to non-infested areas in the United States. This document consists of four major components: a pest data sheet, an organism assessment, pathway assessments and mitigation measures. The pathways analyzed are Nursery Stock, Christmas Trees, Cut Foliage/Flowers, Wood and Wood Products, Greenwaste and Composts, Potting Media and Soil.	Oak Sudden death; forest disease	http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/downloads/pdf_files/pramorumpra05-05-05.pdf	http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/downloads/pdf_file/pramorumpra05-05-05.pdf	Website
6761	Romanian National Institute of Statistics	National Institute of Statistics	Statistics, Romania	https://statistici.inse.ro/sop/index.jsp?page=tempo3&lang=en&ind=EXP101C		Database

4841	Royal Meteorological Institute of Belgium	Belgian official website of the Institute of Meteorology. The Royal Meteorological Institute of Belgium (RMI) is a scientific institute, engaged in meteorology and depending from Minister Laruelle, Minister of Economy	Belgium, climate, weather	http://www.meteo.be/meteo/view/en/65239-Home.html		Website
5142	Royal Netherlands Meteorological Institute	KNMI is the national institute for weather, climate research and seismology. It disseminates weather information to the public at large, the government, aviation and the shipping industry in the interest of safety, the economy and a sustainable environment. To gain insight into long-term developments, KNMI conducts research on climate change. Making the knowledge, data and information on hand at KNMI accessible is one core activity. KNMI is an agency of the Ministry of Transport, Public Works and Water Management (Ministerie van Verkeer en Waterstaat). KNMI's duties are set forth in KNMI Act (Wet op het KNMI).	Netherlands, forecasts, climate research, meteorological research	http://www.knmi.nl/		Website
2801	Russia's Forest: Dominating Forest Types and their Canopy Density	An English version of the dominant tree species map of Russian forests.	maps; forest resources; tree species maps, Russia	http://www.forestforum.ru/info/pictures/engmap.pdf		Other
6241	Russian Federal Service for Hydrometeorology and Environmental Monitoring	Official site of the Russian government. Deals with weather and weather data collection and processing. The Hydrometcentre of Russia is an assignee of the Hydrometeorological research centre of the Soviet Union, established on the basis of the World Meteorological Centre and Central Forecasting Institute, created on the 1st of January 1930. In 1996 the Hydrometcentre of Russia was given a status of the State Scientific Centre of the Russian Federation by the government decree of the Russian Federation № 1167.	Russian Federation, climatic research, climatology, forecasts	http://www.meteorf.ru/default.aspx		Website

1861	SAFE MOVEMENT OF SWEET POTATO GERMLASM	The aim of the joint FAO/IBPGR programme is to generate a series of cropspecific technical guidelines that provide relevant information on disease indexing and other procedures that will help to ensure phytosanitary safety when germplasm is moved internationally.	CIE, pest risk, plant diseases		FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS and INTERNATIONAL BOARD FOR PLANT GENETIC RESOURCES	Journal issue
8141	SLOVOSTAT on line	Database with timeseries data	timeseries, slovak republic, statistics	http://www.statistics.sk/pls/elisw/metainfo.explorer		Database
4262	SOil Map Internet Service	SOMIS (SOil Map Internet Service) is a web-based application that allows the user to navigate the European Soil Database and interact through map operations.	soil database, soil, soil types, soil properties, Europe, EU	http://eusoils.jrc.ec.europa.eu/Website/eusoils/viewer.htm		Database
8643	STATISTICAL SERVICES: Agricultural statistics and Department of Agriculture by the Plant Health and Quality Control sector	Cyprus data on import and export volumes and value as well as origin. Also database is kept in the Department of Agriculture by the Plant Health and Quality control sector		WWW.MOF.GOV.CY/CYSTAT		Database

2821	Sclerotinia Diseases of Crop Plants: Biology, Ecology and Disease Management	A book about Sclerotinia diseases, their biology, ecology and disease management including distribution maps.	Sclerotinia disease management		Sclerotinia Diseases of Crop Plants: Biology, Ecology and Disease Management © Springer Science + Business Media B.V. 2008, DOI 10.1007/978-1-4020-8408-9_2 G. S. Saharan and Naresh Mehta	Book
2341	Segundo Inventario Forestal Nacional (Spain National Forest Inventory)	Regional data for single tree species from the Second National Forest Inventory of Spain (1986-1996). Available on line.	forest, forest inventory, tree species, Spain	http://www.mma.es/portal/secciones/biodiversidad/inventarios/ifn/ifn2/		Database
3381	Servicio Fitosanitario del Estado - M.A.G Costa Rica	Site of National Phytosanitary Service of Costa Rica containing information about legislation, pests and import regulatory system.	Pests, legislation, Costa Rica	http://www.protecnet.gov.cr		Website
6141	Servicio Meteorológico Nacional de Honduras	Official site of the Honduran government that deals with meteorology, forecasting of tropical cyclones and display real-time weather conditions of some major cities in Honduras	Honduras, hurricane, climate, forecasts	http://smn.gob.hn/web/		Website
5981	Servicio Meteorológico Nacional de Mexico	Primary function is to monitor and give information about atmospheric conditions in the country, as well as forecasting and warning of hydrometeorological events that may cause damage to the population or production activities in the country.	Mexico, forecasts, climate services	http://smn.cna.gob.mx/SMN.html		Website

6341	Servicio Meteorológico Nacional de Argentina	Official website of the Argentine authorities that deals with meteorology and climate in the South American country	Argentina, forecasts, climate services,climatology	http://www.smn.gov.ar		Website
6201	Servizio Fitosanitario della Regione Lombardia	The phytosanitary service of the Lombardia region provides data sheets on forestry and agricultural pests and diseases describing damage, distribution, control, biology/ecology, legislation	Italy, quarantine pests, Lombardia	http://www.agricoltura.regione.lombardia.it/sito/template_action.asp?DocumentoId=259&SezioneId=3202000000&action=Documento		Website
6225	Servizio fitosanitario della regione Emilia-Romagna	The web site of of the Phytosanitary service of Emilia-Romagna provides several datasheets on forestry and agricultural pests and diseases describing damage, distribution, control, biology/ecology, legislation	Emilia- Romagna, Italy, pests	http://www.ermesagricoltura.it/wcm/ermesagricoltura/fitosanitario/organismi/pag_organismi_quarantena.htm		Website
1281	Single and Mixed Phytoplasma Infections in Phyllody- and Dwarf-Diseased Clover Plants in Lithuania	Whit molecular analysis techniques (PCR and RFLP) on the ribosomic site 16S was possible to identify two mutually distinct phytoplasmas, that have the capability to infect the clover plants in Latvia	RFLP, Phytoplasma, 16S rDNA, Trifolium hybridum, T. pratense, T. repens		Plant Disease, October 2000, 84:1061-1066.	Journal article
3841	Sistema de Información Geográfica Agraria	Interactive Cartography of crops with olive and vineyards distribution (2000-2009); available for single regions of Spain.	crop, crop inventory, crop map, land use, Spain	http://sig.marm.es/siga/		Database
9241	Sittig's Handbook of Pesticides and Agricultural Chemicals	Sittig's Handbook of Pesticides and Agricultural Chemicals provides crop, chemical, regulatory, health, and safety information on nearly 800 pesticides, fertilizers, and other agricultural chemicals. Chemicals are organized with common names, chemical synonyms, chemical formulae, and many other unique identifiers so that users can find critical information quickly	pesticides book		William Andrew Publishing	Book

8801	SkogsSkada	Here is information about fungi, insects, birds and other things that do damage to the forest in more than 200 injured descriptions. Anyone who wants to can get help to diagnose a damage, report it and also look at maps of reported damages in Sweden.	sweden pest control	www-skogsskada.slu.se/SkSkPub/MiPub/Sida/SkSk/Skog sSkada.jsp	www-skogsskada.slu.se/SkSkPub/MiPub/Sida/SkSk/SkogsSkada.jsp	Website
2561	Skogsstyrelsens webb-plats för skoglig statistik (Swedish Forest Agency Statistics)	The Swedish Forest Agency is one of 25 public authorities required to produce Official Statistics. Forestry statistics are published annually in both English and Swedish. Regional area data are available on-line for single tree species.	forest inventory, forest resources, forest statistics, forest area, growing stock, Sweden	http://www.skogsstyrelsen.se/episerver4/templates/SNormalPage.aspx?id=16683		Database
5921	Skov- og Naturstyrelsen	The main focus of the Danish Forest and Nature Agency will be on ensuring opportunities for nature recreation, and to develop, establish and restore nature and to undertake practical management measures for wild flora and fauna. In addition to the efforts for nature on state land, the Danish Forest and Nature Agency will engage in green partnership arrangements with i.a. local authorities, aiming at nature management and awareness raising. The Danish Forest and Nature Agency is part of the Ministry of the Environment	Denmark, invasive species, biodiversity	http://www.skovognatur.dk/DyrOgPlanter/invasivearter/		Website
8041	Slovak Agricultural Research Centre - Research Institute of Plant Production Piešťany	The Research Institute of Plant Production specialises in research on cereals, oil crops, forage crops, legumes, vine grape, medicinal and aromatic plants, energy crops and some special crops. Plant breeding aimed at winter wheat, oats, triticale and poppy is carried out by the Research and Breeding Stations at Malá Ľúča and at Václavské Pstružany.	crops, data	http://www.vurv.sk		Website
5641	Slovak Hydrometeorological Institute	Slovak Institute which works to collect, process and disseminate weather and historical weather data	Slovak, forecasts, climate services	http://www.shmu.sk/sk/?page=1		Website

4221	Soil Atlas of Europe	The atlas is the result of a collective effort by more the 40 National soil surveys and soil science institutions cooperating across Europe within the European Soil Bureau Network (ESBN).	soil atlas , soil types, soil properties, Europe, EU	http://eusoils.jrc.ec.europa.eu/projects/soil_atlas/index.html	Soil Atlas of Europe. European Soil Bureau Network of the European Commission, principal editors A. Jones, L. Montanarella, and R. Jones, Office for Official Publications of the European Communities, Luxembourg. 2005.	Other
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4761	Soil Taxonomy, second edition	The second edition of Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting Soil Surveys. Maps included.	soil classification, soil types, soil taxonomy soil surveys	http://soils.usda.gov/technical/classification/taxonomy/	Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting Soil Surveys Second Edition, 1999. Agriculture Handbook Number 436. Soil Survey Staff, USDA-Natural Resources Conservation Service, Washington, DC.	Book
8101	Spanish National Institute of Statistics	The National Statistics Institute is a legally independent administrative Autonomous institution assigned to the Ministry of Economy and Finances via the Secretary of State for the Economy.		http://www.ine.es/en/welcome_en.htm		Website
1761	Spatial occurrence of major tree species groups in Europe derived from multiple data sources	Pan-European distribution maps have been compiled for six main species groups in Europe. The aim was to combine detailed tree species information from plot data of the International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests) with other existing spatial and statistical information on forests.	forest, forest inventory, tree species maps		Forest Ecology and Management. 2009. 257: 1, 294-302. 28 ref.	Journal article

2361	State Import Risk Analysis	The Report contains a categorisation of pests of stone fruit from Eastern Australia and the final State import Risk Analysis of cherry fruit from South Australia into Western Australia.	Stone fruit, cherry, Eastern Australia, Western Australia, South Australia, PRA	http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/ph/cherry_sa_final.pdf	(2001) "Categorisation of Pests of stone fruit from Eastern Australia; Final State Import Risk Analysis of cherry fruit (Prunus avium) from South Australia into Western Australia". The Western Australian Department of Agriculture. 152pp.	Other
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8582	State Phytosanitary Administration	<p>Ist the Government official organ for plant protection. Its activities are: Protection of the territory of the Czech Republic and of the other Member States of EU against the introduction of harmful organisms from abroad, as well as protection against further spread of quarantine harmful organisms. Systematic surveys of the occurrence of quarantine organisms on the territory of the Czech Republic and establishment of measures to prevent their spread and to isolate or eradicate their focuses. Checks of the observation of quarantine regulations and provisions and of the observation of good plant protection practice. Systematic phytosanitary inspection of propagating material. Systematic observation, evaluation and documentation of the occurrence of important harmful organisms and disorders. Registration of pesticides and other plant protection products, their testing and testing methods of plant protection, supervision of pesticide testing in the Czech Republic. Testing of plant protection machinery and checking of its use. Expertise activities including establishment of phytosanitary legislation. Information and advisory activities. Collaboration with other authorities and institutions, international collaboration included. Official testing of potato cultivars resistance against potato cyst nematode and potato wart disease.</p>	Czech Republic, phytosanitary control	http://www.srs.cz/portal/page/portal/SRS_Internet_CS/on		Website
8761	State Plant Health and Seed Inspection Service	<p>Plant Health Inspection's main assignments are to monitor: plant health conditions, trade and the use of plant protection remedies and their production, verification and the trade of seed material. In particular:</p> <p>protect Poland's territory against pest organisms, protect crops against pest organisms, prevent their spreading across the country, supervise correctness of trade and use of plant protection remedies, outdoors and laboratory verification of seed material, control conditions of plant seed material production and its trading.</p> <p>and Seed Inspection outdoors and laboratory verification of seeding material, controlling conditions of plant seeding material production and its trading.</p>		http://www.piorin.gov.pl		Website

921	State of European Forests 2003 - The MCPFE Report on Sustainable Forest Management in Europe	The report "The State of Europe's Forests 2003" gives an overview of the latest facts and figures on forests and paints a picture of the status of sustainable forest management in Europe. It is structured according to the six Pan-European Criteria for Sustainable Forest Management, which define the goals of sustainable forest management. In this report Europe comprises the 44 countries of the MCPFE (Ministerial Conference on the Protection of Forests in Europe).	forest, forest resource, sustainable forest management	http://www.unece.org/timber/docs/sfm/europe-2003.pdf	State of European Forests 2003 - The MCPFE Report on Sustainable Forest (2003). Ministerial Conference on the Protection of Forests in Europe. Liaison Unit Vienna. Marxergasse 2, A-1030 Vienna, Austria	Book
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8881	State of European Forests 2007 - The MCPFE Report on Sustainable Forest Management in Europe	The report is a comprehensive and up-to-date description of the situation and the management of European forests as well as the related policies and institutions. It shows the status and trends related to forests and sustainable forest management in Europe, structured according to the Pan-European Criteria and Indicators for Sustainable Forest Management.	forest resources, biodiversity, forest products, sustainable forest management, forest policy	http://www.mcpfe.org/filestore/mcpfe/publications/pdf/state_of_europes_forests_2007.pdf	State of European Forests 2007 - The MCPFE Report on Sustainable Forest Management in Europe. Ministerial Conference on the Protection of Forests in Europe Liaison Unit Warsawul. Bitwy Warszawskiej 1920 r. nr 3 00-973 Warsaw, Poland	Book
8666	Statistical Office of Estonia	Agricultural census data from 2001 - agricultural and horticultural production and equipment data		http://www.stat.ee/agricultural-census		Database
6601	Statistical Office of the Republic of Slovenia	The Statistical Office of the Republic of Slovenia	Trade, Crops, Environment	http://www.stat.si/eng/index.asp		Website
8121	Statistical Office of the Slovak Republic	provide statistical data for the Slovak Republic	statistics, Slovak Republic	http://portal.statistics.sk		Website
6542	Statistical Yearbooks of the Czech Republic	Data on crops and forest types, areas under cultivation and yields in the Czech Republic	crop inventory, crop type, forest, forest inventory, land use	http://www.czso.cz/eng/redukce.nsf/i/yearbooks		Annual report

6962	Statistical yearbook of agriculture and rural areas 2008 (Poland)	Comprehensive information on agricultural production in Poland by the Central Statistical Office.	crops statistic, Poland	http://www.stat.gov.pl/gus/5840_4127_ENG_HTML.htm	Statistical yearbook of agriculture and rural areas 2008. Central Statistical Office, Warsaw, Poland, 2008.	Annual report
7541	Statistics Denmark	The statistical office of Denmark		http://www.dst.dk/HomeUK.aspx		Website
8665	Statistics Denmark: Focus on Agriculture	Basic agricultural statistics		http://www.dst.dk/HomeUK/Statistics/focus_on.aspx?msi=8		Database
7601	Statistics Estonia	Data on crop statistics: crop production, structure of agriculture holdings, economics accounts for agriculture		http://www.stat.ee/		Website
7661	Statistics Hungary	Statistical data on area production and yield		http://portal.ksh.hu/portal/page?_pageid=38,119919&_dad=portal&_schema=PORTAL		
8021	Statistics Portugal	Statistics Portugal is the entity responsible for ensuring the production and dissemination of official statistical information against the background of independence and permanent vigilance with regard to the emergence of new requirements, in a society where such information has become a prerequisite for economic and social development.	statistics, portugal	http://www.ine.pt		Website
8142	Statistics Sweden	Statistics Sweden's website is used to spread statistics and provide information as well as statistical services for the statistical system.		http://www.scb.se/default___2154.aspx		Website

2241	Statistics of forest conditions and forest resources in Norway. Statistikk over skogforhold og skogressurser i Norge registrert i perioden 2000-2004.	This publication presents the fifth edition of 'Statistics of Forest Conditions and Forest resources in Norway'.	forest, forest inventory, forest conditions, Norway	http://www.skogoglandskap.no/publikasjon/1177319701.87	Larsson, J.Y. & Hysten, G. 2007. Skogen i Norge. Statistikk over skogforhold og skogressurser i Norge registrert i perioden 2000-2004 [Statistics of forest conditions and forest resources in Norway]. Viten fra Skog og landskap 1/07: 91 s.	Bulletin
8543	Statistik Austria	Export and Import statistics for different crops and forest. But no data about frequency and volume, only value		http://www.statistik.at/web_de/statistiken/land_und_forstwirtschaft/index.html		Database
6901	Statistikos Departamentas	Department of Statistics to the Government of the Republic of Lithuania	Statistics, Lithuania	http://www.stat.gov.lt/en/pages/view/?id=1350		Website
1001	Strawberry latent ringspot virus Infecting Roses in India	A molecular technique to identify the relationship between pathogen, host and vector	Strawberry latent ringspot virus, Roses, Chenopodium amaranticolor, India		Plant Disease, January 2004, Volume 88, Number 1 Page 86	Abstract only

1661	Sugarcane Smut	Pathways, Identification, pest control and diffusion of <i>Ustilago scitaminea</i> in sugarcane fields	<i>Ustilago scitaminea</i> , Pest Control, Sugarcane, Pest Diffusion		Plant Pathology Circular No. 185 February 1978	Journal article
5601	Swedish Meteorological and Hydrological Institute	SMHI is a government agency under the Ministry of the Environment. SMHI offers products and services that provide various kinds of enterprises and organisations with an important foundation for decision-making. General forecasts and weather warnings, industry-specific services, simulations and analyses, statistics, climate studies and contracted research are some examples. SMHI conducts three different types of operation: government-funded operations, assignments from other government agencies, and business operations on a commercial basis. Although apparently different on the surface, these operations are all based on the same fundamental aim ? to contribute to increased social benefit, safety and a sustainable society.	Sweden, climate studies, Weather, general forecasts	www.smhi.se		Website
5341	Swiss Commission for Wild Plant Conservation	The principle aim of the CPS/SKEW is to promote protection of the diversity of Swiss Flora. In Europe, invasive alien species are also known as invasive neophytes which groups the plant species introduced since 1500. In Switzerland, invasive neophytes are also a real threat for indigenous species and an increasing number of activities have been undertaken. However invasive neophytes have to be clearly distinguished from indigenous species becoming locally invasive.		http://cps-skew.ch/index.htm	http://cps-skew.ch/english/classification_key.htm	Website
8701	Swiss Federal Statistical Office	The Swiss Statistics Web site is maintained by the Federal Statistical Office (FSO). This platform enables providers of public statistics in Switzerland to disseminate their statistical findings.		http://www.bfs.admin.ch/bfs/portal/en/index.html		Database
8671	Swiss Statistics - Agriculture	Statistics on: Mood processing, Meat production, Forestry, Primary Sector 2000, Fruit-growing 2001, Livestock and others		http://www.agr.bfs.admin.ch/ReportFolders/ReportFolders.aspx		Database
3281	Swiss pesticide database	Registered pesticide database. Data on risk management tools (pesticides)	Pesticide Switzerland	http://www.psa.blw.admin.ch/index_de_3_1.html		Database

8668	Swiss-Impex, Federal Finance Department	Swiss import-export statistics		http://www.ezv.admin.ch/themen/00504/01868/01869/index.html?lang=fr		Database
8741	Systematic Entomology Laboratory	<p>Research Scientists conduct research on the identification and classification of beetles, moths, flies, true bugs, aphids, termites, thrips, and mites that impact U.S. agriculture and security. These are crop pests, invasive species, species for biological control of noxious insects and weeds, and species of quarantine significance. Scientists use digital imaging, DNA sequencing, and electron microscopy among other techniques to produce results that impact upon federal, state, public, and private agencies.</p> <p>Service The Communications and Taxonomic Services Unit coordinates SEL's insect and mite identification service. Scientists identify more than 60,000 specimens each year that provide critical support to research projects in ecology, conservation biology, biological control, and integrated pest management. The USDA's Animal and Plant Health Inspection Service (APHIS) is the primary user of this service, but the user community is diverse and includes other ARS research laboratories, universities, and foreign governments.</p> <p>Information Scientists respond to requests for information relating to the taxonomy, biology, ecology, and distribution of insect and mite species. Regulatory agencies such as APHIS use this information to develop strategies for protecting the U.S. from invasive species and agricultural pests. SEL scientists produce databases and interactive identification tools on the SEL website to meet the information needs of the public and scientific community. Much information is gleaned from building, maintaining, and developing digital archives of the Smithsonian Institution's insect and mite collections.</p>		http://www.ars.usda.gov/Main/site_main.htm?modecode=12-75-41-00		Website
4921	Systematic Mycology and Microbiology	Fact sheets have been prepared for plant-associated fungi of importance to plant quarantine. Many of these fact sheets were written in response to specific queries for nomenclatural information, from USDA APHIS or other interested parties. Each fact sheet provides nomenclature reports and supporting details about geographic distribution and host range for a fungus or group of related fungi.	pathogens fungi, rusts	www.nt.ars-grin.gov	www.nt.ars-grin.gov/fungaldatabases/	Website

6586	Tela Botanica	List of French flora (about 110 000 taxa) including interactive distribution maps at a "departement" level.	plants, vascular plants, plant maps, France	http://www.tela-botanica.org/page:eflore		Website
8262	Texas invasives	<p>Texas Invasives maintains an online database devoted to plants known to occur in or around Texas that are suspected of causing invasive problems.</p> <p>The purpose of this site is informational and educational and it is not intended to be a regulatory tool. Many of the species listed here are economically important horticultural plants but sometimes cause problems when they escape and establish in natural areas. Information about regulatory restrictions on the importation and use of certain invasive species may be found on the Texas Department of Agriculture's website (see TDA Noxious Weed List), and the Texas Parks and Wildlife Department website (see TPWD Prohibited Exotic Species)</p>		http://www.texasinvasives.org/invasives_database/		Website
6261	Thai Meteorological Department	<p>As the TMD's missions have been designed to carry on meteorological administrations and managements for the sakes of 2 vital aims: the best economic, social, agricultural, and industrial benefits as well as protection of human lives and properties possessed by public members; private sectors; and governmental units against natural disasters, it has been authorized to perform the following 5 duties :</p> <ol style="list-style-type: none"> 1. To supply weather forecasts for the entire country and publicize disaster warnings to fulfill the requirement from administration and management in natural disaster mitigation, 2. To build the people's awareness toward natural disasters; enable them to perform correct surviving practices; and reduce effects from natural disasters by using modern technologies together with IT services, 3. To become the meteorological IT data and service center at the national level for users in any ventures, 4. To improve and develop the Departments research works, 5. To strengthen the Department's roles in international cooperation concerning meteorology and environment with the purpose of profound comprehension on changing world situation. 	Thai, climatic studies, forecasts, meteorological alarms	http://www.tmd.go.th/index.php		Website

3621	The Belgian Forum on Invasive Species	Data on Invasive Species in Belgium, including distribution maps	invasive species belgium	http://ias.biodiversity.be/ias/		Website
7461	The Danish Plant Directorate	The Danish Plant Directorate is a government institution under the Danish Ministry of Food, Agriculture and Fisheries. In dividing responsibilities with the other institutions under the Danish Ministry of Food, Agriculture and Fisheries, the Danish Plant Directorate concentrates on the first stage of the food chain from farm to fork.		http://pdir.fvm.dk/English.aspx?ID=7335		Website
6101	The Danish Plant Directorate	The Danish Plant Directorate is a government institution under the Danish Ministry of Food, Agriculture and Fisheries and it concentrates on the first stage of the food chain from farm to fork.	plant pest management denmark	http://pdir.fvm.dk/English.aspx?ID=7335		Website
2441	The EFIMED database	The EFIMED database released in 2008 is built on the project outcomes and allows searching data on the state of the Mediterranean forests, the quantity and value of wood and non-wood forest goods and services.	forest, Mediterranean forest, forest conditions, forest goods	http://www.efi.int/portal/about_efi/organisation/regional_offices/efimed/efimed_database/		Database
2401	The EFISCEN inventory database	Alterra and the European Forest Institute work together in making projections of the future development of forest resources in Europe. For these projections a large scale matrix model, called the European Forest Information Scenario Model (EFISCEN), is used. Input data are available for 31 European countries. The input data for these countries have been derived from their national forest inventories.	forest, forest inventory, Europe	http://www.efi.int/portal/virtual_library/databases/efiscen/inventory_database/		Database
6564	The Environmental weeds of Australia	Environmental Weeds of Australia will be an invaluable resource to all those involved with research, training and management of environmental weeds in Australia, especially State and local weed control officers, Bushcare and Landcare volunteers. It allows an interactive identification and information resource for over 1000 invasive plants.	weeds of Australia, environmental control Australia	www.cbit.uq.edu.au	www.cbit.uq.edu.au/software/envioweeds	Software

1521	The Epidemiology of Plant Diseases	Plant disease epidemiology is a dynamic science that forms an essential part of the study of plant pathology. This book brings together a team of 35 international experts. Each chapter deals with an essential component of the subject and allows the reader to fully understand how each exerts its influence on the progress of pathogen populations in plant populations over a defined time scale. This book contains in the last section a rapid vision of the most important pathogens, your spatial distribution and the the pathways and the history of their diffusion.	diffusion, plant disease, epidemiology	www.books.google.it	www.books.google.it	Book
4201	The European Soil Data Center	The European Soil Data Centre (ESDAC) is the thematic centre for soil related data in Europe	soil, soil types, soil properties, Europe, EU	http://eusoils.jrc.ec.europa.eu/library/esdac/index.html		Database
4101	The European Soil Databases (ESDB)	The European Soil Database is the major European-wide soil database	soil, soil types, soil properties, Europe, EU	http://eusoils.jrc.ec.europa.eu/ESDB_Archive/ESDBv2/index.htm		Database
4181	The European Soil Portal	This Soil Portal contributes to a thematic data infrastructure for soils in Europe. It presents data and information regarding soils at European level.	soil, soil types, soil properties, Europe, EU	http://eusoils.jrc.ec.europa.eu/		Website
5161	The Exotic Forest Pest Information System	The goal of ExFor is to produce a database that provides information on exotic insects, mites and pathogenic organisms with potential to cause significant damage to North American forest resources. The database contains valuable background information on each pest, and serves as a resource for regulatory and forest protection agencies in North America.		http://spfnic.fs.fed.us/exfor/index.cfm	http://spfnic.fs.fed.us/exfor/index.cfm	Website
8661	The Farm Management handbook 2007/08 - the UK reference for farm business management (27th edition)	physical and gross margin data relating to farm businesses				Book

4021	The Giant Hogweed Best Practice Manual	The manual provides up to date knowledge about all relevant aspects of the biology, ecology, taxonomy and management of invasive hogweeds.	Invasive species, hogweeds, <i>Heracleum mantegazzianum</i> , <i>Heracleum sosnowskyi</i> , <i>Heracleum persicum</i>	http://www.giant-alien.dk/	Nielsen, C., H.P. Ravn, W. Nentwig and M. Wade (eds.), 2005. The Giant Hogweed Best Practice Manual. Guidelines for the management and control of an invasive weed in Europe. Forest & Landscape Denmark, Hoersholm, 44 pp.	Other
5821	The Global Invasive Species Information Network	The Global Invasive Species Information Network (GISIN) was formed to provide a platform for sharing invasive species information at a global level, via the Internet and other digital means.	Invasive species, network	http://www.gisinetwork.org		Website
4741	The Global Invasive Species Team	The Global Invasive Species Team is part of The Nature Conservancy's response to abating the damage caused to native biodiversity by the human-facilitated introduction of non-native, harmful invasive species. This web site provides many resources designed to help all conservationists deal most effectively with invasive species.		http://www.invasive.org/gist/index.html	http://www.invasive.org/gist/index.html	Website
6161	The Hashemite kingdom of Jordan Meteorological Department	The Department was established in 1951 as part of the Civil Aviation Authority. In 1967 it became an independent entity under the Ministry of Transport. The vision is: issuing an accurate, detailed and long-term weather forecast and delivering it properly to users. Our mission is: contributing in the economic and social development programs and working towards the protection of Earth's environment and resources.	Jordan, weather, forecasts	http://met.jometeo.gov.jo		Website

7261	The Invasive Plant Atlas of the United States	The Invasive Plant Atlas is just one step in the effort to combat invasive species and preserve our native landscapes and the plants, animals, and other creatures that inhabit them. Information in the Atlas is compiled from many sources including federal, state and local government agencies, Exotic Pest/Invasive Plant Councils, Invasive Species Councils and other experts and organizations.	Invasive Plant Atlas of the United States	http://www.invasiveplantatlas.org/index.html	http://www.invasiveplantatlas.org/index.html	Database
6507	The Irish Meteorological Service Online	It monitor, analyse and predict Ireland's weather and climate, and to provide a range of high quality meteorological and related information to the customers.	Climate	http://www.met.ie/		Website
7381	The Maryland Invasive Species Council	The Maryland Invasive Species Council provides leadership concerning invasive species and encourages efforts that prevent the introduction of, and manage the impact of, invasive species on Maryland ecosystems.	Maryland Invasive Species.	http://www.mdinvasivesp.org/invasive_species_md.html	http://www.mdinvasivesp.org/index.html	Website
5282	The National Institute of Invasive Species Science	The National Institute of Invasive Species Science is a consortium of government and non-government organizations formed to develop cooperative approaches for invasive species science that meet the urgent needs of land managers and the public. Administratively housed at the U.S. Geological Survey Fort Collins Science Center in Colorado, the National Institute of Invasive Species Science provides a hub for invasive species science collaboration, coordination, and integration across agencies and disciplines.		http://www.niiss.org/cwis438/Browse/BrowseData.php	http://www.niiss.org/cwis438/Browse/BrowseData.php	Website
8242	The North Central Soybean Research Program Plant Health Initiative	The Program's mission is to maximize producer returns by coordinating research efforts across state boundaries, minimizing regional duplication of research expenditures, and assuring regional research projects are targeted at problems of the North Central soybean producer.	soybean research program, plant health initiative	http://www.planthealth.info/index.htm	http://www.planthealth.info/	Website
3261	The North European and Baltic Network on Invasive Alien Species	The site provides: a distributed but integrated database on introduced species in the region; fact sheets on many of the most invasive aliens; a catalogue of the regulation relevant to invasive species in participating countries; a literature database; and connects to regional and global networks and projects of invasive aliens specie.	Pest, North Europe, invasive species	http://www.nobanis.org/default.asp		Website
8667	The Public Ledger COMMODITIES YEARBOOK 2008	Yearbook which contain data on over 700 rated commodities, prices, analysis and comments.				Book

3701	The Scottish Government Rural Payments and Inspections Directorate (SGRPID) - Plant Health, Seeds and Potatoes	The Government aims to promote Scotland's agriculture to achieve a sustainable future. This includes measures to maintain Scotland's high plant health status, the excellent quality of its certified seed and seed potatoes and to promote the interests of the Scottish potato and horticultural sectors.	scotland plant health potato	http://www.scotland.gov.uk/Topics/farmingrural/Agriculture/plant		Website
2381	The Southeast Asian Loop of BioNET International	This site consent to introduce a keyword regarding the scientific name of a organism and give the world map with the points of the recognized case of their presence.	Malaysia, Indonesia; Myanmar ; Thailand , South asia, taxonomy	www.aseanet.org	www.aseanet.org	Website
8722	The Swedish Board of Agriculture: Jordbruksverket	Statistical reports, yearbooks and archives. Data level varies, but some reports break down crops like pot plants to quite detailed level		http://www.sjv.se/home/ammesomraden/statistics		Database
3821	The Swiss Commission for Wild Plant Conservation	The principle aim of the CPS/SKEW is to promote protection of the diversity of Swiss Flora, therefore it has drafted lists of actual and potential invasive plant species in Switzerland.	invasive plant Switzerland	http://www.cps-skew.ch/english/info_invasive_plants.htm		Website
7105	The Turf Professional's Online Source for Weed Control Options	Online source for turf weed control options. Weed information for North America (divided into four major regions). Includes weed images, descriptions, control recommendations, germination dates, university links, links to weed and turf related societies, environmental issues (e.g. 2,4-D task force), research, and industry trade journals.	weed alert, weed control	http://www.weedalert.com/index.html	http://www.weedalert.com/index.html	Database
8241	The coleopterist	The Coleopterist is the leading journal for students of the beetle fauna of the British Isles.		http://www.coleopterist.org.uk/		Website

601	The french forest, figures and maps - Edition 2008	Available in French and in English, this handbook gathers in 25 pages the main figures, maps of main species and information on the French forest, based on data of the National Forest Inventory.	forest, forest inventory, tree species maps, France	http://www.ifn.fr/spip/spip.php?article627	The french forest, figures and maps - Edition 2008. Institut pour le développement forestier, Paris, France.	Annual report
8541	The global fresh produce portal	The global fresh produce portal		http://www.fruitnet.com/home.aspx?rid=1		Website
6041	Turkish State Meteorological Service	<p>The Turkish State Meteorological Service, TSMS, was founded in 1937. It is the only legal organization which provides all meteorological information in Turkey.</p> <p>The main objectives of the TSMS are:</p> <ul style="list-style-type: none"> * To make observations, * To provide forecasts, * To provide climatological data, archive data, and other information, * To communicate these to the public, * To provide meteorological needs of army and civil aviation. 	Turkia, climatological data, forecasts, observations	http://www.dmi.gov.tr/en-US/forecast-5days.aspx		Website
7081	Tuscany Meteorological services	The meteorological services in Tuscany, established in 1988 to meet the information requirements in the technical assistance in agriculture, is one of specialized support services in agriculture as part of the Regional Agency for Development and Innovation in agriculture and forest (ARSIA)	Italy, Tuscany, agriculture, agrometeorological service	http://agrometeo.arsia.toscana.it/index.php		Website
5622	UK's National Weather Service	The UK's National Weather Service. A Trading Fund within the Ministry of Defence, operating on a commercial basis under set targets. Our targets are: forecast accuracy, business profitability, return on Capital Employed, support to wider government controls.	United Kingdom, climate, forecasts, economy	http://www.metoffice.gov.uk		Website

1441	UN Statistics Division - Comtrade	United Nations Commodity Trade Statistics Database UN-COMtrade	Trade, Commodities, Statistics	http://comtrade.un.org/db/ help/uReadMeFirst.aspx		Database
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5021	USDA- Animal and Plant Health Protection Service- Plant Protection and Quarantine	<p>Plant Protection and Quarantine (PPQ) is a program within the Animal and Plant Health Inspection Service (APHIS). PPQ safeguards agriculture and natural resources from the risks associated with the entry, establishment, or spread of animal and plant pests and noxious weeds to ensure an abundant, high-quality, and varied food supply.</p> <p>Plant Pest Program Information PPQ responds to many new introductions of plant pests to eradicate, suppress, or contain them through various programs in cooperation with state departments of agriculture and other government agencies. These may be emergency or longer term domestic programs that target a specific pest. This page lists a variety of insect, plant disease, mollusk, or weed programs with detailed information linked to each.</p> <p>Pest Detection The goal of PPQ's pest detection program is to protect America's agricultural and ecological resources by insuring the early detection of harmful or economically significant plant pest and weeds. View this page to learn more about this program.</p> <p>Pest Identification The National Identification Services coordinates the identification of plant pests in support of USDA's regulatory programs. This page provides procedures and resources relating to the identification of plant pests of regulatory concern.</p> <p>Plant Import and Export PPQ serves to allow legitimate international and interstate trade while preventing the introduction of foreign plant pests. View this page to learn more about import and export requirements for live plants and plant products, such as fresh fruits and vegetables, and certification information on solid wood packing material. Links to PPQ's electronic manuals are also available at this site. To learn about information related to what roles APHIS facilitates for Import and Export, click here.</p> <p>Permits Permits are required under specific USDA Animal and Plant Health Inspection Service Regulatory Authorities to import designated plants, plant products and soil into the U.S., transport designated plants and plant products through the U.S., import plant pests and biological control organisms into the U.S., and move plant pests and biological control organisms between States. View this page for more information about permitting.</p> <p>Crop Biosecurity and Emergency Response PPQ, the Federal response agency for plant health emergencies, develops and delivers strategic science-based regulatory programs designed to protect US crops and natural resources. View this page to learn about PPQ's infrastructure, programs, and activities that strive to deliver an effective systems approach to mitigate risks posed by select agents and regulated pests.</p> <p>Safeguarding American Plant Resources A Stakeholder Review of the APHIS-PPQ Safeguarding System.</p>	pest, disease, USA agriculture, quarantine	http://www.aphis.usda.gov/		Website
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6821	Ufficio federale dell'ambiente UFAM	The diversity of flora and fauna continues to decline. As the federal agency responsible for species management, the FOEN is committed to the preservation of species and biological diversity. Species protection need not exclude the use of these resources.	administrative site, switzerland	http://www.bafu.admin.ch/artenvielfalt/01027/index.html?lang=it#sprungmarke2_23		
8662	Uk National Institute of Statistics	UK Statistics Authority		http://www.statistics.gov.uk/hub/index.html		Database
6262	Ukrainian Hydrometeorological Center	The site is presented only in Cyrillic	Ukraina, weather, climate	http://meteo.com.ua		Website
8581	Umweltbundesamt	Authority for environmental protection and environmental control. Data records, analyses on the state and development of the environment in all areas. GIS-maps about: water, nature, air, landcover		http://www.umweltbundesamt.at/index.php?		Database
2481	United States Departement of Agriculture	The USDA site compreds the new ARS web site navigation, in that only 4 categories of information appear in the top navigation bar: Home, About ARS, Contact Us, and Help. Our Spanish site, En Espa�ol, is also featured in the top navigation. The new left navigation bar contains the remaining information categories: Research, Products & Services, People & Places, News & Events, Partnering, and Careers. A major change is the left navigation elements will remain consistent throughout the site and expand with related content links when clicked.	USA, departement of agriculture, pest managment	www.ars.usda.gov	www.ars.usda.gov	Website
1801	UtahState University Extension	Utah's diverse landscape supports thousands of insects and plant pathogens. UTAH PESTS is your portal for learning more about pests and their beneficial counterparts around the state, and how Utah Extension personnel are working to provide a greater understanding of these organisms in our world. The datasheets, that are contained in the site, help the disease control, that depends primarily on early, accurate identification of the disease and the causal agents.	IPM, guideline pest control, plant disease	www.utahpests.usu.edu	www.uthahpest.usu.edu	Website
4041	Valsts Augu Aizsardzibas Dienests	VAAD Latvian is a site that presents a map of the regions of this state, made in connection with a list of articles regarding plant pests and plant diseases and other.	latvia, VAAD	www.VAAD.GOV.LV	www.VAAD.GOV.LV	Website

8243	VaxtEko	this site contains 125 000 pages Swedish literature on the plant, plant pathogens and nutrients and organic farming.	pathogen plants Sweden	www.vaxteko.nu	www.vaxteko.nu	Website
8245	Virgin Island Beetle Database	<p>Number of specimens in the database: 34,698 Number of species represented by specimens in the database: 489</p> <p>These pages are web gateways to an Oracle database containing the data on the beetle fauna of the Virgin Islands. The information itself is the result of years of collecting and organizing effort by Mike Ivie (Montana State University). The pages you see here were created by Norm Johnson (Ohio State University).</p> <p>Rather than providing an SQL interface and requiring an understanding of the underlying structure of the database, we've provided some structured queries that we believe users will most commonly need. More specific requests should be directed to us by e-mail.</p> <p>There are three different places from which queries may begin: island, taxon, and specimen. As we develop the web pages and database procedures, we will try to interconnect these. Constructive suggestions are welcomed!</p> <p>Query by: Island Family Specimen</p>		http://iris.biosci.ohio-state.edu/vi_beetles/		Website

9181	Virus Diseases of Plants Image Database Collection	Image Database Collection CD contains 1,218 images of symptoms, vectors, viruses, viroids, and also diseases that might be confused with viruses, across a broad range of more than 120 host plants. Each image contains information about the current scientific classification of the virus based on the 8th Report of the International Committee on Taxonomy of Viruses. Names of viruses from images in older APS Compendia have been updated and the newest literature information has been incorporated. Scientists currently working on the crop viruses have written the captions for the images and assisted in editing the compilation.	image virus plants		www.apsnet.org	Software
1501	Virus and virus-like diseases of stone fruits, with particular reference to the Mediterranean region	The text is the activity report of the Mediterranean Network on Fruit Tree Viruses (MNFTV) in the period 2000-2002 and contains information and data concerning presence, incidence and distribution of virus and virus-like diseases on stone fruits in several countries of the mediterranean region.	virus, virus-like, stone fruits,		Virus and virus-like diseases of stone fruits, with particular reference to the Mediterranean region. Myrta A, Di Terlizzi B, Savino V (Eds), CIHEAM (Centre International de Hautes Etudes Agronomiques Méditerranéennes), Bari, p. 172, 2003	Book

9221	Viruses and virus diseases of poaceae (gramineae)	This 857-page book is significant because it is the definitive resource on viruses that infect the plant species that make up the most important food crops in the world – Poaceae (Gramineae) – which include barley, maize, rice, rye, sorghum, sugarcane, triticale, wheat, forage, ornamental, and lawn. This grass family is among the largest of all plant families consisting of approximately 700 genera and 10,000 species. Nearly twenty percent of plant viruses are known to infect graminaceous hosts resulting in significant agricultural economic losses.	gramineae virus, poaceae diseases		INRA	Book
6421	WMO for Gabon	There isn't a meteorological official site in Gabon, then the easiest and fastest way to get news climatological this African country is to consult the WMO site that collects weather data worldwide in various forms and reworks them.	Africa, Gabon, climatological data	http://www.wmo.int/pages/index_en.html		Website
4502	WRB Map of World Soil Resources 1:25 000 000	This is the most general digital map of the World's soils, now using the international standard soil classification WRB. Available as a maps or GIS data	soil, soil maps, soil types, soil properties, FAO, World Reference Base	http://www.fao.org/ag/agl/agll/wrb/soilres.stm		Database
8502	WTO on-line training course	WTO distance learning		http://www.wto.org/English/res_e/d_learn_e/d_learn_e.htm#spe		Website

8222	Weeds Gone Wild: Alien Plant Invaders of Natural Areas	<p>Weeds Gone Wild: Alien Plant Invaders of Natural Areas is a web-based project of the Plant Conservation Alliance's Alien Plant Working Group, that provides information for the general public, land managers, researchers, and others on the serious threat and impacts of invasive alien (exotic, non-native) plants to the native flora, fauna, and natural ecosystems of the United States.</p> <p>This site provides a compiled national list of invasive plants infesting natural areas throughout the U.S., background information on the problem of invasive species, illustrated fact sheets that include plant descriptions, native range, distribution and habitat in the U.S., management options, suggested alternative native plants, and other information, and selected links to relevant people and organizations.</p> <p>Participation in the Weeds Gone Wild project is open to anyone interested in getting involved and includes federal, State, and local government agencies, non-governmental organizations, universities, private firms and individuals. If you are interested in writing a fact sheet or otherwise helping with this project, please write to: Jil Swearingen, Chair, Alien Plant Working Group, 4598 MacArthur Blvd., NW, Washington, DC 20007, or send an e-mail message.</p> <p>Fact sheets and other information on this web site may be used (i.e., printed, copied, distributed) for educational purposes without permission, as long as a credit line to the PCA-APWG is included. Materials may not be published or sold. For other intended uses, please contact the APWG Chair.</p>		http://www.nps.gov/plants/alien/index.htm		Website
9001	Westcott's Plant Disease Handbook	<p>The seventh edition uses the traditional convenient format of previous editions providing easy access to essential information quickly with special dictionary-type entries on plant hosts and on symptoms. New and updated material includes: (1) Significant taxonomic changes in fungi, bacteria, viruses and nematodes, (2) Recently discovered diseases and new hosts for previously known plant-pathogens, (3) Changes in chemicals and pesticides and changes in regulations governing their use, (4) Integrated pest management and biological control.</p>	Westcott's Plant Disease Handbook,		Springer- Verlag	Book

6841	Western Corn Rootworm: Ecology and Management	<p>Western Corn Rootworm, <i>Diabrotica virgifera virgifera</i> LeConte, has been a major economic pest of maize in the Americas for many years. However, since the early 1990's it has become an increasing threat to crops in Europe and is expected to spread to all maize growing areas of the continent.</p> <p>This book provides a comprehensive review of current knowledge of the biology and ecology of this insect pest and how it might be managed in order to limit its damage as it spreads into new agroecological areas. Cultural, biotechnical, and biological control measures are addressed, as are ecological baseline data such as population dynamics, economic thresholds and aspects of its behaviour. The book also examines the potential of plant protection techniques currently used in North America to be applied in Europe.</p>	Diabrotica virgifera, Europe		Western Corn Rootworm: Ecology and Management	Book
4241	Wheat Diseases and Pests: a guide for field identification	<p>This booklet is designed as a quick guide for identifying wheat and triticale diseases in the field. It is intended primarily for agricultural researchers, technicians and farmers in developing nations, but will also be of value to others. The text comprises a brief description of the major wheat and triticale diseases, insect pests, nematodes, physiologic and genetic disorders, and mineral and environmental stresses. Complementing this text and as an aid to the identification are numerous color photographs 1/, drawings 2/ and a brief diagnostic key. In the case of specific causal organisms, the perfect stage name (when known) is followed by the imperfect stage name in parentheses. While most of the diseases, pests, disorders, or stresses included can be economically significant, some are not and are presented only because they are unique or might be confused with more economically significant problems.</p>		http://wheat.pw.usda.gov/ggpages/wheatpests.html	http://wheat.pw.usda.gov/ggpages/wheatpests.html	Website
9021	Wheat Health Management	<p>The primary purpose of this book is to guide wheat health managers to an understanding of the basic concepts and approaches to wheat health management. The book is not intended as a step-by-step manual of how to grow and manage wheat. As such, it does not name particular wheat varieties, pesticides and fertilizers except as illustrations. This approach allows the reader to concentrate on products and recommendations. Such details are left to the many excellent bulletins made available through the Cooperative Extension Service and advisory programs.</p>	Wheat Health Management, Wheat Plant		The American Phytopathological Society	Book

8561	Wisconsin Department of Agriculture, Trade, and Consumer Protection	We are the agency responsible for food safety, animal and plant health, protecting water and soil and monitoring fair and safe business practices.		http://datcp.state.wi.us/		Website
6282	World Meteorological Organization	The World Meteorological Organization (WMO) is a specialized agency of the United Nations. It is the UN system's authoritative voice on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources. WMO has a membership of 188 Member States and Territories (since 24 January 2007). It originated from the International Meteorological Organization (IMO), which was founded in 1873. Established in 1950, WMO became the specialized agency of the United Nations in 1951 for meteorology (weather and climate), operational hydrology and related geophysical sciences. As weather, climate and the water cycle know no national boundaries, international cooperation at a global scale is essential for the development of meteorology and operational hydrology as well as to reap the benefits from their application. WMO provides the framework for such international cooperation.	weather, climate, UN, Earth's atmosphere	http://www.wmo.int/pages/index_en.htm		Website
8521	World Trade Organization	The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments. The goal is to help producers of goods and services, exporters, and importers conduct their business.		http://www.wto.org/index.htm		Website

4561	World reference base for soil resources 1998	The first edition of the World Reference base, the soil classification system recognized at the global scale published in 1998	soil classification system	http://www.fao.org/docrep/W8594E/W8594E00.htm	World reference base for soil resources edition 1998. World Soil Resources Reports No. 84. FAO, Rome, Italy, 1998.	Book
4541	World reference base for soil resources 2006	The second edition of the World Reference Base (WRB) soil classification system published in 2006. An updated version was published in 2007.	soil classification, soil maps, soil types, soil properties, FAO, World Reference Base	http://www.fao.org/ag/Agll/wrb/doc/wrb2006final.pdf	World reference base for soil resources edition 2006. World Soil Resources Reports No. 103. FAO, Rome, Italy, 2006.	Book

4401	ZMP market report cereals, oilseeds, and feeds 2001; Germany, European Union, and world market.	This book consists of statistics and 5 reports on production of and markets in cereals, oilseeds and feed crops during 1995-2000.	agricultural prices. breadmaking. cereals. compound feeds. costs. crop production. crop quality. demand. European Union. feeds. fuels. international trade. malting. oats. oilseeds. plant proteins. poultry feeding. rape. swede rape. tapioca. world.		ZMP-Marktbilanz - Getreide, Olsaaten Futtermittel 2001. Deutschland, Europäische Union, Weltmarkt. 2001. 238 pp. 13 ref.	Book
4261	climate-charts	perhaps the largest archive of a free consultation today weather data	wold, climate, maps	http://www.climate-charts.com/		Website
4481	euro weather	Archbishop of historical weather data related to major European cities from 1960 to 1990	europe, weather, data	http://www.eurometeo.com/		Website
4801	european climate assement & database	Presented are indices for monitoring and analysing changes in climate extremes, as well as the daily dataset needed to calculate these indices. ECA&D is initiated by the European Climate Support Network ECSN and supported by the Network of European Meteorological Services EUMETNET.	erope, climate, changes, database	http://eca.knmi.nl/		Website
4721	iMapInvasives	A consortium has formed to develop an on-line, GIS-based, all-taxa invasive species mapping tool to be called iMapInvasives which will focus on serving the needs of invasive species managers. A particular emphasis will be placed on applications designed to aid in Early Detection/Rapid Response efforts. The initial consortium is comprised of five partners: the natural heritage program of the state of Florida (Florida Natural Areas Inventory (FNAI), the New York Natural Heritage Program (NYNHP), The Nature Conservancy in Oregon, and the Global Invasive Species Team of The Nature Conservancy (TNC-GIST), and NatureServe.		http://www.imapinvasives.org/index.html		Website

6286	invasIBER	Database of invasive species of seaweed or algae (3), other plants (8), insects (1), crustaceans (2), other invertebrates (2), fish (10), amphibian (1), reptile (1), bird (1), and mammals (2), found in the Iberian peninsula. Species profiles include information on photographs, taxonomic definition, description, habitat, native geographic distribution, distribution in the Iberian peninsula, introduction mechanism, ecological impacts, socioeconomic impacts, management, profile author, other information sources, and bibliographic references. (from: the national institute of invasive species science)	alien species iberia, spain invasive species	www.invasiber.org	www.invasiber.org	Website
7741	ksiega gatunkow obcych inwazyjnych w faunie polski	The study recorded 302 species of foreign origin imported by the Polish man, intentionally or unintentionally dragged in different circumstances	Poland, invasive species, fauna	www.iop.krakow.pl/gatunkiobce/default.asp?nazwa=szukaj&je=pl		Website
4441	meteo suisse	The Swiss Federal Office of Meteorology and Climatology is by Federal mandate the national provider for weather and climate services in Switzerland. In this role, it serves the community and industry, monitoring the entire atmosphere over Switzerland, issuing weather forecasts, warning the authorities and the general public of dangerous weather conditions and analysing climate data.	Switzerland, climate, weather forecasts	http://www.meteosuisse.admin.ch/web/it.html		Website
6621	the Euro+Med PlantBase	The Euro+Med PlantBase provides an on-line database and information system for the vascular plants of Europe and the Mediterranean region.	plants, vascular plants, Europe, Mediterranean region	http://www.emplantbase.org/home.html		Database
6961	the Germplasm Resources Information Network	GRIN provides information (classification, nomenclature, common names, geographical distributions, literature references, and economic impacts for its genetic resources and many other economic plants on a worldwide basis.	plant taxonomy, economic plants, plant distribution, genetic resources	http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl?language=en		Database
5241	the british society for plant pathology	The British Society for Plant Pathology (BSPP) was founded in 1981 for the study and advancement of plant pathology. It support the professional interests of plant pathologists worldwide and provide information and communicate with members via a newsletter, website and annual meeting. the society organise regular scientific meetings, edit three international pathology journals and make funds available to members for travel, short term visiting fellowships, student bursaries and innovation projects.	plant pathology, molecular plant pathology, new diseases report	www.bspp.org.uk	www.bspp.org.uk/publications/new-disease-reports/index	Website

2981	ufficio centrale di ecologia agraria	Italian site that contains a series of weather data	climate, region, italy	http://www.ucea.it/		Website
9121	virus diseases of plants grapevine, potato, and wheat image collection and teaching resource	This CD set provides an international collection of color images of virus symptoms and other associated images that emphasize virus disease symptoms and information on identification, epidemiology, losses, and control. Virus symptoms are specifically emphasized and much of the information on field identification is not available in other sources. Most of the information on plant resistance is not easily available as well, especially across several viruses affecting a single plant.	image database virus plants, potato virus image, grapevine virus image		www.shopapress.org	Software
4281	weatherbase	site that presents the weather data collected by the U.S. NOAA network in more than 16,000 cities around the world	weather, world, cities	http://www.weatherbase.com/		Website
4402	world climate database	site that allows the discharge of very large files (even 1 gb of data in compressed *. zip format) that contain within them information on climate across the earth's surface at a resolution of less than 1 km	world, climate, gis	http://www.worldclim.org/		Website
4121	worldclimate	site containing a global weather data for a multitude of locations across all continents	climate, world	http://www.worldclimate.com	http://www.worldclimate.com/	
6882	ŽEMĖS ŪKIO INFORMACIJOS IR KAIMO VERSLO CENTRAS	Agri information and rural business centre. The Centre ensures functioning of registers (Agricultural and Rural Business, Farm Animals and Parcels of Land) of integrated system of administration and control; carries out programmes of farm animal breeding system and accounting of farm animals' productivity, programme on provision and processing of information on utilized agricultural area and crop area		http://www.vic.lt/		Website