

Web-based reference databases and subject gateways to locate current research information in agricultural and food sciences — a Finnish perspective

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Databases and the World Wide Web have overwhelmed the information market. Bibliographic reference databases with links to electronic journals that publish full text manuscripts provide information seekers with a wide range of fast and convenient searching methods. Increasingly organisations present their activities on the WWW which allows them to disseminate updated information about their experts, publications and on-going research projects better than was possible previously. The web technology has a major advantage over printed products since it allows end-users to search, browse and print the information in different formats according to their own specific needs. Agricultural and food science papers published in Finland have been documented annually in this journal for a number of years, but the advent of web technologies have made this much less valuable.

Key words: agricultural research, food research, publications, databases, current research information systems, subject gateways, Internet, information resources, Finland

Current research information systems

There has been considerable increase in the current research information systems (publication, project and expert databases) in Finland

during the last few years. Most universities and research institutes are following a common national recommendation prepared by a Ministry of Education working party in 1994. Most of these databases utilise web technology for the dissemination of information.

In the fields of agricultural and food sciences there has also been a project called MATRI,

funded by the Ministry of Agriculture and Forestry since 1993, that has promoted construction of current research information databases in Finland. MATRI has contributed to the creation of AGRI /Articles and Books databases. AGRI is provided by Viikki Science Library, superseding the Agricultural Library in 1999. The Veterinary Medicine Library, Finnish Game and Fisheries Research Institute, Libraries of Joensuu and Oulu Universities also contribute to the content of AGRI. The Agricultural Research Centre of Finland (MTT) produces its own publication database (JUKURI), that will in the future be downloaded and included into AGRI. During this year, the Viikki Science Library will merge its AGRI, Forestree and SIEPPO databases. This new resource will serve as a national database with a comprehensive set of references in the fields of agriculture, food science, nutrition, forestry, biological and natural sciences.

In a coordinated effort with MATRI the major research organisations have generated their own project and expert databases in order to improve the management of their own knowledge resources and to enhance the dissemination of information to a variety of interested groups, clients and stakeholders. No national database was built by MATRI because it was not possible to neglect specific content requirements and the updating procedure could not be guaranteed. For the same reasons, it was recommended that expert databases were independently constructed on an individual organisation basis.

Reference databases with links to full text articles

High quality databases apply production criteria, namely selected contents, prompt and comprehensive bibliographic descriptions with indexing that are combined with a user-friendly interface. In addition, the best web-based databases also have thesauri integrated in the search forms.

Access to web-based databases are generally easy and straightforward to use. With one search term and a press of the Submit button it is possible to locate relevant information. However, more often the user encounters a greater challenge in successfully retrieving this information. In order to overcome these difficulties the user has to become acquainted with the search form and evaluate one's own information requirements. Although many database providers could improve the quantity and quality of user instructions, it is essential that the user becomes sufficiently familiar with the information that is already available.

A reference database is an essential tool for a scientist, representing the primary step to identify the most relevant and current information. A comprehensive literature search is a recommended procedure for the planning of a new research project, since it can enhance the scientific quality as a result of a more focused and reasoned research protocol. Furthermore, a focused plan for the proposed research will save time and other resources by preventing repetition of previous studies, providing more novel and original information, satisfying the expectations of funding authorities and research clients.

An increasing number of databases are accessible free of charge on the WWW. There has also been an increase in the number of scientific journals published as electronic journals. In Finland licenses have been acquired by the National Electronic Library programme FinELib, funded by the Ministry of Education. The programme includes universities and other institutes of higher education. Research institutes and polytechnics have also been able to participate using their own resources. Depending on the organisation, a research scientist has access to a substantial variety of information tools that can include up to 2700 electronic journals and 100 databases. More information and training is available to scientists from libraries, information services within an organisation and scientific libraries. Information specialists can also assist the selection and use of information sources in addition to other chargeable information services.

Web technology databases have recently launched a further service that allows full text documents to be directly accessed from reference lists. This innovation effectively transports the library to the desktop. One database producer providing this service is SilverPlatter, while other major international scientific publishers are developing their own joint service (Reference Linking Service, press release, 16 November 1999).

Home pages and quality-controlled services on the WWW

For science information seekers their own organisation Internet and intranet websites can provide a useful insight. Research institutes, universities and educational establishments all document a broad description of research activities, projects and findings on WWW home pages. Finnish organisations have home pages in both Finnish and English. Agricultural and food science research activities in Finland are for example, documented on the Agricultural Research Centre (MTT), Agricultural Economics Research Institute (MTTL), Technical Research Centre (VTT), University of Helsinki and University of Kuopio websites. Furthermore, a very useful list of links is provided by the International Service for National Agricultural Research (ISNAR) called AROW. The site contains a worldwide directory of organisations and universities working in agricultural research that have a home page on the Web. According to ISNAR, agricultural research on AROW also includes research concerning fish, trees, crops, livestock and other natural resources. In addition to link listings there are subject gateways or quality resource discovery systems which have selected and indexed information resources from different scientific fields on the Internet. A subject gateway differs from a simple list of links by providing a platform for browsing and searching. The NO-

VAGate subject gateway is a service targeted to the scientific community, that is produced and maintained by Nordic agricultural and veterinary university libraries. This gateway contains over 700 Internet resources, such as an organisation website and a database, and has been developed as a part of the Finnish Virtual Library project which covers over 50 scientific fields. The NOVAGate and Finnish Virtual Library participate in the European Renardus project launched in the beginning of this year to design an Academic Subject Gateway Service in Europe which merges national subject gateways. Renardus is funded as a part of the Information Societies Technology (IST) within the European Union fifth framework programme.

Selected agricultural and food science databases

The current section introduces a few essential agricultural and food science databases, in addition to those documented previously. Since many research projects are multidisciplinary, scientists are encouraged to investigate which databases are the best and most relevant information sources.

Finnish reference databases

AGRI/ Articles and Books

The Viikki Science Library produces the AGRI reference database that covers the following subject areas: agriculture, food, nutrition, household sciences, consumer research, rural development, environmental sciences, veterinary sciences, game and fisheries. The database contains references primarily of Finnish articles, Finnish and foreign monographs and series of the libraries of the Viikki Campus and the Veteri-

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nary Medicine Library at the University of Helsinki. References are indexed using Finnish terms of the AGRIFOREST thesaurus. The database contains over 102 000 references with approximately 6 000 annual additions.

JUKURI

The Agricultural Research Centre of Finland (MTT) collates its own publication references in the JUKURI database. References are classified according to type, that includes peer reviewed scientific publication and articles in professional journals and magazines. An information seeker can consult publication lists on the home pages of each research unit or via a direct literature search of the database. References are indexed using Finnish terms according to the AGRIFOREST thesaurus. The database contains about 17 000 references, with approximately 1300 annual additions.

JULKI

The University of Helsinki documents publications within the JULKI database that includes information on more than 53 000 publications from 1994 onwards with approximately 10 000 annual additions. The database covers broad subject areas from nine faculties including agriculture, forestry, food sciences, medicine and veterinary medicine. References are classified according to publication type, eg. articles published in scientific journals and non-scientific articles.

a machine-readable database of bibliographic records created by the National Agricultural Library of the United States and certain collaborators. Production of these records in electronic form began in 1970, but the database covers materials dating from the 16th century.

CAB ABSTRACTS database

CAB ABSTRACTS is a bibliographic database compiled by CAB International. It covers the significant literature concerning research and development in the fields of agriculture, forestry, aspects of human health, human nutrition, animal health and the management and conservation of natural resources. Over three million records have been added to the database since its computerisation in 1973. These records are made available through a diverse range of products and services available in printed and electronic form.

FSTA database

Food Science and Technology Abstracts, FSTA, is the source of information documenting innovations and developments in the food industry, and the latest scientific research for the food sector. FSTA contains information on food science, food technology and human nutrition since 1969 and is produced by International Food Information Service (IFIS).

International reference databases

AGRIS database

AGRIS is the international information system for agricultural science and technology produced by FAO. The system identifies both conventional and non-conventional ("grey") literature that deals with all aspects of agriculture.

AGRICOLA database

AGRICOLA (AGRICultural OnLine Access) is

Links to information resources

AGRI database

– <http://www.helsinki.fi/agri> (in Finnish)

AGRIS database

– <http://www.fao.org/waicent/search/default.htm>

– <http://www.fao.org/agris/default32.htm>

AGRICOLA database

– <http://www.nal.usda.gov/ag98/ag98.html>

Agricultural Economics Research Institute, Maatalouden taloudellinen tutkimuslaitos (MTTL)

- <http://www.mttl.fi/DEFAULT.HTM> (in Finnish)
- <http://www.mttl.fi/ENGLISH/DEFAULT.HTM> (in English)

Agricultural Research Centre of Finland, Maatalouden tutkimuskeskus (MTT)

- <http://www.mtt.fi> (in Finnish) – Tutkimus tai Tietokannat
- <http://www.mtt.fi/english/> (in English) – Research or Databases

Agricultural Research on the Web (AROW) produced by the International Service for National Agricultural Research (ISNAR)

- <http://www.cgiar.org/isnar/arow>

CAB Abstracts database

- <http://www.cabi.org/index.htm>

FinELib (National Electronic Library – supporting research and higher education, Kansallinen elektroninen kirjasto – tutkimuksen ja korkeimman koulutuksen apuna)

- <http://hul.helsinki.fi/finelib/index.html> (in Finnish)
- <http://hul.helsinki.fi/finelib/english/index.html> (in English)

Finnish Virtual Library Project, Virtuaalikirjasto – the Finnish Information Gateway to Selected Internet –resources

- <http://www.jyu.fi/library/virtuaalikirjasto/> (in Finnish),
- <http://www.jyu.fi/library/virtuaalikirjasto/engvirli.htm> (in English)

FSTA database

- <http://www.ifis.org/>

JULKI database

- <http://www.helsinki.fi/julki/> (in Finnish)
- <http://www.helsinki.fi/julki/en> (in English)

JUKURI database

- <http://www.mtt.fi/triphome/wwwjukuri/jukurihaku.html> (in Finnish)
- http://www.mtt.fi/triphome/wwwjukuri/jukurihaku_eng.html (in English)

NOVAGate

- <http://novagate.nova-university.org/>

Reference Linking Service to Aid Scientists Conducting Online Research, Scientific and Scholarly Publishers Collaborate to Offer Ground-Breaking Initiative. Press release 16 Nov. 1999.

- <http://www.doi.org/>

Renardus – Academic Subject Gateway Service Europe

- <http://www.renardus.org>

SilverPlatter, SilverLinker

- <http://www.silverplatter.com/silverlinker/index.htm>

University of Helsinki

- <http://www.helsinki.fi> (in Finnish) – Tietoa yliopistosta – Tutkimus
- <http://www.helsinki.fi/english> (in English)
- Research – Publication database (or Research project database)

University of Kuopio

- <http://www.uku.fi> – Tutkimus – Julkaisutoiminta
- <http://www.uku.fi/english/> – Research – Publications

Technical Research Centre of Finland, Valtion teknillinen tutkimuskeskus (VTT)

- <http://www.vtt.fi> – Tutkimus tai Tuloksia
- <http://www.vtt.fi/indexe.htm> (in English) – Research or Results

SELOSTUS

Maatalous- ja elintarviketieteiden www-pohjaiset viitetietokannat ja aihehakemistot – suomalaisen tiedonetsijän näkökulma

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Tietokannat ja www ovat mullistaneet tiedonhakijan markkinat. Painettu julkaisuluettelo palveli kauan Agricultural and Food Science in Finland -lehden lukijoita, mutta painetun luettelon julkaiseminen ei enää ole tarkoituksenmukaista. Nyt lukijan käytettävissä on viitetietokantoja, jotka yhdessä kokotekstiartikkeleina ilmestyvien verkkolehtien kanssa tarjoavat tiedonhakijalle laajat ja nopeat työkalut tiedonetsintään. Verkkoympäristössä voidaan tarjota usein myös joustavasti erilaisia haku-, selailu- ja tulostusvaihtoehtoja toisin kuin painetussa luettelossa. Korkeakoulut, yliopistot, tutkimuslaitokset, ammattikorkeakoulut ja muut organisaatiot ovat hankkineet käyttöönsä elektronisia aineistoja, ja parhaimmillaan tutkijalla on käytössään tuhansia verkkolehtiä ja noin 100 tietokantaa. Kotimaisten ja kansainvälisten viitetietokantojen lisäksi tiedonhakijalle erittäin hyödyllisiä tie-

tolähteitä ovat tutkimuslaitosten, yliopistojen, korkeakoulujen ja muiden oppilaitosten ja organisaatioiden omat kotisivut www:ssä. Eri tieteenaloille on tuotettu Internet-aihehakemistoja, joihin on valikoitu ja kuvailtu laadukkaita tiedonlähteitä Internetissä. Web-pohjaiset tietokantojen käyttöliittymät ovat tiedonhakijalle varsin helppoja käyttää. Usein kuitenkin onnistunut tiedonhaku vaatii käyttäjältä vähän enemmän hakutekniikkaa koskeviin ohjeisiin tutustumista ja erityisesti oman tiedonhakuongelman jäsentämistä. Oman organisaationsa tietopalvelun tai lähimmän tieteellisen kirjaston asiantuntijoilta ja kotisivuilta tutkija saa lisätietoa hänen yhteisönsä hankituista tietoaaineistoista, opastusta tiedonlähteiden valintaan ja käyttöön sekä lisätietoja tarjolla olevista maksullisista tiedonhakupalveluista.