

AGRICOLA:

SPECIFICATIONS FOR CATALOGING AND INDEXING RECORDS
FROM THE NATIONAL AGRICULTURAL LIBRARY

These specifications apply to the May 2011 AGRICOLA Reload

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NATIONAL AGRICULTURAL LIBRARY
TECHNICAL SERVICES DIVISION
Updated May 2011

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AGRICOLA
Specifications for Cataloging and Indexing Records
from the USDA National Agricultural Library

1. GENERAL INFORMATION

1.1 SUMMARY

AGRICOLA (**AGRICultural OnLine Access**) provides a machine-readable file of the National Agricultural Library's (NAL) cataloging and indexing records. The AGRICOLA database contains bibliographic records of books, serials, audiovisuals, and other materials acquired by NAL and cooperating institutions in agricultural and related sciences. There are nearly 4.4 million records in AGRICOLA. Seventy seven percent describe journal articles and book chapters, and the remaining twenty three percent describe monographs, serials, maps, electronic resources, and audiovisuals. Together they provide worldwide coverage of the literature of agriculture.

In order to carry out its congressional mandate for the widest possible dissemination of agricultural information, NAL has in the past and continues to make available the AGRICOLA database to the public. To this end, the National Technical Information Service (NTIS) of the U.S. Department of Commerce distributes both the current and retrospective AGRICOLA files. These files are available to both domestic and foreign users.

A paper version of the AGRICOLA indexing records, known as the Bibliography of Agriculture, was available from Oryx Press from 1942-2000. Rowman and Allanheld issued the paper version of the cataloging records, known as the NAL Book Catalog, which covered records from 1862-1985. Since 1970, AGRICOLA has been available online through various information retrieval brokerage services such as Dialog, OCLC's (Online Computer Library Center, Inc.) FirstSearch system, etc. In 1998, AGRICOLA (<http://agricola.nal.usda.gov/>) became freely available via the NAL Web site. OVID (formerly SilverPlatter) produces a CD-ROM version of AGRICOLA.

1.2 NATIONAL AGRICULTURAL LIBRARY

The Technical Services Division is the unit within NAL primarily responsible for entering bibliographic records into the AGRICOLA database. Within Technical Services, the Bibliographic Services Branch typically enters about 11,000 new indexing records a month through the Indexing Subsystem of Voyager. Beginning in July 1, 2010, NAL began the process of redesigning its entire indexing workflow and operations to significantly increase its annual indexing output. During this period, which will extend into 2011, indexing production will be reduced by at least 50%. It is NAL's intent to index articles published during this period when the redesign is complete. The list of journals indexed in AGRICOLA may be found at: <http://www.nal.usda.gov/agricolajournals/>.

The Bibliographic Services Branch also enters approximately 750 new cataloging records per month into AGRICOLA. The cataloging records are entered into the OCLC union catalog system located in Dublin, Ohio. These records are then downloaded into NAL's online public access catalog (OPAC).

Since 1970, NAL has used an automated system for bibliographic control of library holdings. From 1970 through 1978, the Cataloging and Indexing (CAIN) Software System was used

not only for bibliographic control, but also to print the NAL Book Catalog and to produce a monthly sale tape that was distributed to other library information centers and vendors both within the United States and abroad.

In 1979, the MARC/SAMANTHA Software System was implemented. Developed jointly by the Library Systems Branch of NAL, the Communications and Data Services Division of USDA, and Information and Publishing Systems Inc. of Bethesda, Md., SAMANTHA was installed at the USDA Departmental Computer Center in downtown Washington, D.C. and enabled NAL to produce machine readable files in the USMARC Communications Format.

In November 1993, NAL migrated the production of the monthly AGRICOLA sale tape to the VTLS-based (Visionary Technology in Library Solutions) integrated library system, ISIS (Integrated System for Information Services). Minor modifications to the tape and record content included: change in domain space name on tape label to AGRICOLA.NAL from NALSPR.AGRICOLA; the order of subfields of MARC tag 773; the use of multiple 072 tags instead of a single 072 with multiple subfield \$a's; and identifier information in MARC tag 001.

Since November 2003, NAL has been using its library management system, Voyager, from Ex Libris, for entering bibliographic and holdings information for cataloging and indexing records. The AGRICOLA file is selected from the new, corrected, and deleted records entered or modified in Voyager each month. In January 2005, the complete AGRICOLA database was extracted from the Voyager system in MARC 21 format and sent for distribution to NTIS.

In June 2006, Unicode was introduced into AGRICOLA. From June 2006 through January 2007, NAL sent out two files each month using both MARC-8 and UTF-8 character sets. The AGRICOLA file has been distributed exclusively in UTF-8 format since March 2007. The Library of Congress's website contains the complete specification at: <http://www.loc.gov/marc/specifications/speccharucs.html>

2. DESCRIPTION

2.1 SCOPE AND HISTORY

The AGRICOLA database contains bibliographic records of books, serials, audiovisuals, electronic resources, and other materials acquired by the National Agricultural Library (NAL) and cooperating institutions in agricultural and related sciences. There are nearly 4.4 million records in AGRICOLA. Seventy seven percent of these describe journal articles and book chapters, and the remaining twenty three percent describe monographs, serials, maps, electronic resources, and audiovisuals. Together they provide worldwide coverage of the literature of agriculture. AGRICOLA has citations for titles in 114 languages, the majority of which are in English.

AGRICOLA covers the literature on all aspects of agriculture. Table 1 lists the major subject areas represented in the database.

Table 1. Subject Areas of the AGRICOLA Database

- Animal science and animal products (includes veterinary medicine)
- Biological sciences
- Breeding and genetic improvement

- Economics, business and industry
- Farms and farming systems
- Food and human nutrition
- Forest science and forest products
- Government, law, and regulations
- Health and pathology
- Insects and entomology
- Natural resources, earth and environmental sciences
- Physical sciences
- Plant science and plant products
- Research, technology and engineering
- Rural and agricultural sociology

Records indexed between 1970 and 1978 have bibliographic identification (BIB ID) numbers consisting of the four-character acronym "CAIN" followed by eight digits. CAIN is the format the National Agricultural Library (NAL) used when the Library started making bibliographic records available in machine readable form in 1970. The acronym, CAIN, is a combination of the first two letters of the words **C**ataloging and **I**ndexing. All of the data in the CAIN records were in upper case with control characters indicating how the alphabetic characters were to be displayed; as a result, there may be some anomalies in the converted records with regard to capitalization. The CAIN format was used through the end of 1978, when NAL began using the MARC format for the output of its bibliographic records.

Although licensees of NAL's AGRICOLA database have had access to the CAIN records since 1970, the records were not available in NAL's master online database. The indexing CAIN records were converted to MARC for loading into NAL's AGRICOLA Indexing Database in 2002. The cataloging CAIN records were converted and loaded in the mid 1980s.

Before 1985, in order to identify the various contributors to the AGRICOLA database, a convention was adopted to begin the identification number of each record with a three- or four-character acronym corresponding to the contributor. Table 2 lists the contributors, their acronym(s) and the type(s) of records they supplied (i.e., cataloging and/or indexing). The 8-digit number within the identification number was made unique only by prefixing it with the subfile acronym. All records created since 1985 are now identified as either cataloging (CAT) or indexing (IND) records.

Table 2. Contributors to AGRICOLA

<u>Acronym</u>	<u>Contributor</u>	<u>Indexing</u>	<u>Cataloging</u>
4-H	Educational Materials Project of the North Central Region	yes	no
ADL	Arid Lands Information Center	yes	no
ADU	Educational Materials Project of the North Central Region	no	yes
AGC	Agricultural Economics, Canada	yes	yes
AGE	American Agricultural Economics Documentation Center	yes	no
BEE	USDA Bee Research Laboratory	yes	yes
BRU	Brucellosis	yes	no
CAIN	NAL cataloging & indexing format used from 1970-1978	yes	yes
CAT*	Cataloging Branch, NAL	no	yes

CUY	Biosciences Library	yes	no
ENR/ENE	Energy in Agriculture	yes	no
ENV	Environmental Impact Statements	no	yes
FNC	Food and Nutrition Information Center	no	yes
FNI	Food and Nutrition Information Center	yes	no
GUA	University of Georgia, Library	yes	no
IND*	Indexing Branch, NAL	yes	no
JYD	North Carolina Biotechnology Center	yes	no
NON3	Non-OPAC records and cataloging records issued from September 1993 through February 1994	no	yes
ocm	NAL Cataloging Cooperators	no	yes
PAR	Index-Catalogue of Medical and Veterinary Parasitology	yes	no
UIU	University of Illinois	no	yes

* = current contributors

Identification numbers on ISIS-produced AGRICOLA records contain the following prefixes: CAT (cataloging records), IND (indexing records), and NON3 (NON-OPAC records and cataloging records issued from September 1993 through February 1994 to avoid duplication during the transition of our older system to ISIS). ISIS was NAL's online public catalog available through the VTLS system and accessible via telnet until December of 2003, when NAL implemented the Voyager library management system.

On March 1, 2007, NAL began using the CONSER standard record to catalog serials. The CONSER standard record provides simplified and concise rules for creating new serial records that are clearer, less redundant, and more easily understood. Some elements of the CONSER standard record that are different from previous practice are:

- access points and linking entries will suffice without duplicative notes
- only the current frequency of a journal will be noted
- there is limited use of differentiating uniform titles
- the use of indicators in field 246 (Varying form of title) and coding of control fields is simplified
- there will always be a description based on note and source of title statement to indicate which issue and where on the issue the title information is found
- the number of volumes, illustrations and size will no longer be noted

These guidelines primarily will be employed in the creation of newly cataloged serial records, where no previously cataloged record exists in national databases. However, when using an existing record, some elements that are not in the CONSER standard record will be retained, while adding some of the new elements. This may result in serial records that are a hybrid containing a mix of both old and new practices.

In May of 2007, NAL began adding bibliographic records for electronic resources that have been deposited in NAL's DSpace Digital Repository (DDR) to AGRICOLA. The DDR is located at: <http://ddr.nal.usda.gov/>

The DDR contains USDA-authored and/or USDA-published content, primarily journal articles. Eventually the DDR will include unpublished content such as datasets, lab notes, presentations, and other materials in any digital format (text, image, audio, or video).

DDR records contain NAL Handles in field 856. Field 856 of DDR records also contains a subfield "y" that reads: "Available in AgSpace, NAL's Digital Repository."

AgSpace (<http://agspace.nal.usda.gov/>) is the name of NAL's Digital Documents Repository, which includes the DDR records as well as records from the National Agricultural Library Digital Repository (NALDR). The main focus of the NALDR (<http://naldr.nal.usda.gov/>) is historical USDA publications either digitized by NAL or through NAL's partnerships with other institutions. Field 856 of NALDR records contains a subfield "y" that reads: "Available in the NAL Digital Repository."

All AgSpace records, including the cataloging records, contain NALT terms in fields 650 _3 and 651 _3.

As of May 2011, over 46,000 digital objects have been deposited in the DDR; AGRICOLA contains a bibliographic record for each of these digital objects. It is estimated that 10,000 DDR records will be added to AGRICOLA every year, thereby greatly increasing access to full-text articles and documents via links in AGRICOLA.

DDR records contain a field 655, as do most records for electronic resources. However, DDR records also contain a subfield x:

655 _3 \$a Internet resource \$x AgSpace

Example of a DSpace Digital Repository Indexing Record:

000 02325caa a2200433 450
001 3949700
005 20071002031320.0
008 070913e200707 ||| 000 0 eng
016 7_ |a IND43949700 |2 DNAL
035 __ |a 3949700
040 __ |a AGL
072 _0 |a F821
072 _0 |a L100
072 _0 |a L001
072 _0 |a L500
100 1_ |a Ekesi, S.
245 10 |a Adaptation to and small-scale rearing of invasive fruit fly *Bactrocera invadens* (Diptera: Tephritidae) on artificial diet |h [electronic resource].
300 __ |a p. 562-567.
504 __ |a Includes references

- 520** ___ |a Larval rearing of *Bactrocera invadens* Drew, Tsuruta & White (Diptera: Tephritidae) on artificial diet is described. The adaptation process for this insect, when moved from whole mango, *Mangifera indica* L., fruit rearing to artificial diet based on wheat bran, took between three and five generations to reach the plateau of quality control parameters observed for rearing the insect on whole mango fruit. Small-scale rearing on wheat, *Triticum aestivum* L., or carrot, *Daucus corata*-based diet revealed significantly higher pupal recovery for flies reared on the wheat-based artificial diet (68.8%) compared with the carrot-based diet (58.2%). Weekly production of puparia was 3,966.8 on wheat- and 3,012.1 on carrot-based diet. Other quality control parameters, including pupal weight, adult emergence, flight ability, fecundity, and fertility did not differ significantly between the two artificial rearing media tested.
- 650** _3 |a *Bactrocera*
- 650** _3 |a fruit flies
- 650** _3 |a invasive species
- 650** _3 |a insect rearing
- 650** _3 |a artificial diets
- 650** _3 |a adaptation
- 650** _3 |a pupae
- 650** _3 |a quality control
- 655** _3 |a Internet resource |x AgSpace
- 700** 1_ |a Nderitu, P.W.
- 700** 1_ |a Chang, C.L.
- 773** 0_ |t Annals of the Entomological Society of America. |g 2007 July, v. 100, issue 4 |o 1022882455 |x 0013-8746 |7 nnas |9 jnl44731
- 852** ___ |a DNAL |i 420 En82
- 856** 41 |u <http://hdl.handle.net/10113/3752> |y Available in AgSpace, NAL's Digital Repository
- 856** 40 |u [http://dx.doi.org/10.1603/0013-8746\(2007\)100\[562:ATASRO\]2.0.CO;2](http://dx.doi.org/10.1603/0013-8746(2007)100[562:ATASRO]2.0.CO;2) |y Available from publisher's Web site
- 910** ___ |a USDA |b ARS
- 930** ___ |a 20070924 |b 20071002 |c 00000000
- 945** ___ |a IND |d NZM |e 2007/09/24
- 946** ___ |a Other US

Example of a DSpace Digital Repository cataloging record:

- 000** 01918cam a2200469Ia 450
- 001** 987585
- 005** 20070802141119.0
- 006** m d f
- 007** cr cn|||||
- 008** 070326s2007 coua sb f000 0 eng
- 016** 7_ |a CAT30987585 |2 DNAL
- 035** ___ |a (OCoLC)ocm86175165

- 035** ___ |a 987585
- 040** ___ |a GPO |c GPO |d AGL
- 070** 0_ |a aQK171 |b .F67 2007
- 086** 0_ |a A 13.88:RMRS-GTR-186
- 049** ___ |a AGLL
- 245** 00 |a Forest descriptions and photographs of forested areas along the Breaks of the Missouri River in eastern Montana, USA |h [electronic resource] / |c Theresa Jain ... [et al.].
- 260** ___ |a Fort Collins, CO : |b U.S. Dept. of Agriculture, Forest Service, Rocky Mountain Research Station, |c [2007]
- 440** _0 |a General technical report RMRS ; |v GTR-186
- 538** ___ |a Mode of access: Internet from the Forest Service web site. Address as of 3/22/07: <http://www.fs.fed.us/rm/pubs/rmrs%5Fgtr186.pdf> ; current access is available via PURL.
- 500** ___ |a Title from title screen (viewed Mar. 22, 2007).
- 500** ___ |a "February 2007."
- 504** ___ |a Includes bibliographical references.
- 650** _0 |a Forest plants |z Montana |z Missouri Breaks |v Classification.
- 650** _0 |a Vegetation classification |z Montana |z Missouri Breaks.
- 650** _0 |a Forest surveys |z Montana |z Missouri Breaks.
- 650** _0 |a Forests and forestry |z Montana.
- 650** _0 |a Forests and forestry |z Montana |z Missouri Breaks.
- 650** _3 |a forests
- 650** _3 |a forest surveys
- 650** _3 |a descriptions
- 650** _3 |a photography
- 651** _3 |a Montana
- 655** _3 |a Internet resource |x AgSpace
- 700** 1_ |a Jain, Theresa B.
- 710** 2_ |a Rocky Mountain Research Station (Fort Collins, Colo.)
- 856** 41 |u <http://hdl.handle.net/10113/438> |y Available in AgSpace, NAL's Digital Repository
- 910** ___ |a USDA |b FS
- 930** ___ |a 20070627 |b 20070702 |c 00000000
- 945** ___ |a |d rgalletta |e 2007/06/22
- 946** ___ |a USDA

2.2 PROCUREMENT PROCEDURES

In July 1980, the National Technical Information Service (NTIS) became the sole distributor of the AGRICOLA database files. For subscription information, technical assistance, or copies of the current files, contact:

National Technical Information Service
Computer Products Division
U.S. Dept. of Commerce
5285 Port Royal Road
Springfield, Virginia 22161, U.S.A.
Telephone: 703-605-6125
<http://www.ntis.gov/>

2.3 STANDARDS FOR BIBLIOGRAPHIC DESCRIPTION

Bibliographic data for cataloging records is transcribed from source documents using the Anglo-American Cataloging Rules (AACR2). AACR2 was first adopted by NAL in January 1981. A new set of cataloging rules called Resource Description and Access (RDA) is currently being reviewed and may be implemented in 2011. ISBD (International Standard Bibliographic Description) punctuation is used in most bibliographic records for both cataloging and indexing records. All records contain a leader, a record directory, control fields, and variable fields. For cataloging records, the MARC 21 Formats for Bibliographic and Authority Data are followed. MARC 21 conventions for the use of indicators and subfields are also used. The AGRICOLA file will also reflect local practices. Some records, e.g. retrospective records and publisher-supplied data records, may not comply with current rules. See Appendix A for resource information.

The AGRICOLA file has been issued in unblocked format since January 2005, with each record following the previous one with no intervening spaces.

2.3.1 Field 016 NATIONAL BIBLIOGRAPHIC AGENCY CONTROL NUMBER

Field 016 contains the AGRICOLA accession number. This number is used to track records across different systems at NAL.

2.3.2 Field 043 GEOGRAPHIC AREA CODE

In AGRICOLA records created from 1979 through 1984, field 043 contains the AGRIS Geographical Code. This provides a subject approach to material and contains a four-position alpha-numerical code incorporating a semi-hierarchical structure for continents, countries, states or provinces, and natural features. This code can be useful for geographic retrieval of a hierarchical nature (e.g., all of Africa or all of Asia) with the use of truncation. The codes used are shown in Appendix B. In addition, NAL's Cataloging Branch adds the Library of Congress faceted geographic area code in this field for all serial and CIP (Cataloging in Publication) records. These codes are not added to original monographic cataloging records, but they are left on OCLC records which already have them.

2.3.3 Field 070 NAL CALL NUMBER

Field 070 in cataloging records contains the National Agricultural Library call number. NAL has used the Library of Congress (LC) classification scheme since 1966. Prior to that time, the classification scheme of the USDA Library was used (see Appendix C). The USDA Library call numbers continue to be used in some indexing and cataloging records. The types of call numbers that may be found in field 070 are:

- LC Classification Scheme Numbers
- USDA Library Classification Numbers

- Audiocassette Numbers (Preceded by "Audiocassette")
- Audiotape Numbers (Preceded by "Audiotape")
- Digital Video Discs (Preceded by "DVD")
- Dissertation Numbers (Preceded by "DISS")
- Filmstrip Numbers (Preceded by "Filmstrip")
- Game Numbers (Preceded by "Game")
- Graphic Numbers (Preceded by "Graphic")
- Kit Numbers (Preceded by "Kit")
- Manuscript Numbers (Preceded by "Manuscript")
- Microfiche Numbers (Preceded by "Fiche")
- Microfilm Numbers (Preceded by "FILM")
- Model Numbers (Preceded by "Model")
- Motion Picture Numbers (Preceded by "Motion picture")
- Record Numbers (Preceded by "Record")
- Reprints from ARS scientists (Followed by "ARS" in field 852 of indexing records)
- Slide Numbers (Preceded by "Slide")
- Translation Numbers (Preceded by "TRANSL")
- Videocassette Numbers (Preceded by "Videocassette")
- Videodisc Numbers (Preceded by "Videodisc")

Dissertations, translations, films, microfiches, and other special materials are assigned accession numbers rather than classification numbers. Diskettes, CD-ROMs, and other electronic resources are assigned LC classification scheme numbers.

The MARC 070 field has two subfields, \$a (Classification Number) and \$b (Author Cutter Number). Prior to 1998, subfield \$b was used by NAL to record a volume number, a date or a shelf arrangement number. Currently, subfield \$b is used to designate the Author Cutter Number as described in MARC 21.

Note: Call number information for indexing records is carried only in MARC field 852. Cataloging records contain the NAL call number information in field 070, with additional call number and holdings data in field 852 for records provided by cooperators. Field 852 provides a link between the institutional NUC (National Union Catalog) holding symbol and the call number of the item at that institution. See Section 2.3.12 for specifics on the use of field 852.

2.3.4 Field 090 LOCAL CALL NUMBER

Field 090 is used in AGRICOLA cataloging records to carry local call numbers from other institutions. Its subfield structure is similar to that of 070, but its implementation varies with subfile producer. The following subfiles use or have used the 090 field:

- Agriculture Economics (Canada)
- AGX
- American Agricultural Economics Documentation Center
- Brucellosis
- Educational Materials Project of the North Central Region
- Food and Nutrition Information Center
- Index-Catalogue of Medical and Veterinary Parasitology
- U.S. National Arboretum
- USDA Bee Research Laboratory

2.3.5 Field 072 NAL SUBJECT CATEGORY CODE

When creating bibliographic records, catalogers and indexers assign the narrowest terms available from either the Library of Congress Subject Headings or the NAL Thesaurus (<http://agclass.nal.usda.gov/agt/agt.shtml>). The NAL Subject Category Codes group records under broader subject classifications, thereby allowing searchers to retrieve a greater number of relevant records. For example, without the Subject Category Codes, a researcher looking for information on soil fertility, fertilizer technology, and composting would need to search individually for each of these terms; however, category code J500 covers all of these topics.

From 1970 to 1979, the CAIN Subject Category Codes were used. The CAIN Subject Category Code list is attached as Appendix D.

In February 1980, the Library adopted AGRIS-compatible Subject Category Codes. The Subject Category Codes are alpha-numeric codes created by NAL to aid record retrieval. The four-character code broadly categorizes the subject content of the document being described. In 2008 the NAL Subject Category Codes were revised for the first time since 1993 with the addition of 16 new codes. The present category code list can be found in Appendix D and at <http://agricola.nal.usda.gov/help/categorycodes.html>

Until November 1993, indexing records contained only one Category Code. Indexing records from 1993 to 2011 contain as many Category Codes as are needed, with the exception of publisher-supplied data records. Publisher-supplied data records do not contain category codes unless they have been indexed by NAL staff.

Beginning in 2003, Subject Category Codes were no longer added to monographic cataloging records; serial records and indexing records continued to carry the codes. Due to the implementation of automated indexing, use of Subject Category Codes will be discontinued in serial records and indexing records beginning in 2011.

2.3.6 Field 242 TRANSLATED TITLE

Prior to December 31, 1997, catalogers and indexers translated non-English titles; the translated title was recorded in MARC field 242. After December 31, 1997, translated titles appear in field 242 of cataloging and indexing records for non-English language materials only when a translated title appears on the item.

Since NAL catalogers and indexers no longer supply translations for all non-English works, there will be fewer occurrences of field 242 in the AGRICOLA database after 1997.

2.3.7 Field 245 TITLE STATEMENT

2.3.7.1 Title Enrichment

Prior to 1985, indexers provided words and phrases that enhanced retrieval and placed them in square brackets in field 245. These enriched titles with bracketed keywords have been moved to MARC field 246. The 245 field has been restored to the original form as found in the journal article or chapter title.

2.3.7.2 Erratum

Effective January 1, 1997, NAL began modifying indexing records to indicate when a published erratum exists and to cite the source of that published erratum. The errata policy applies only to journal article records and has not been implemented for cataloging records. Errata appear in AGRICOLA as notations on the records of the original articles. The erratum notation is entered in the 245 field as bracketed information following the title. When the title of the indexing record displays, AGRICOLA users are informed that the original citation has been amended and are referred to the source of the revised information.

Example of Indexing Record with Erratum:

001 3622963
005 20040525234354.0
008 040429e200404 ||| 000 0 eng
016 7_ |a IND43622963 |2 DNAL
035 __ |a 3622963
040 __ |a AGL
072 _0 |a F600
072 _0 |a F200
100 1_ |a Schrick, K.
245 12 |a A link between sterol biosynthesis, the cell wall, and cellulose in Arabidopsis. [**Erratum: 2004 May, v. 38, no. 3, p. 562.**]
300 __ |a p. 227-243.
504 __ |a Includes references
650 _3 |a Arabidopsis thaliana
650 _3 |a mutants
650 _3 |a phytosterols
650 _3 |a plant development
650 _3 |a biosynthesis
650 _3 |a biochemical pathways
650 _3 |a embryo (plant)
650 _3 |a embryogenesis
650 _3 |a cell walls
650 _3 |a histology
650 _3 |a cellulose
700 1_ |a Fujioka, S.
700 1_ |a Takatsuto, S.
700 1_ |a Stierhof, Y.D.
700 1_ |a Stransky, H.
700 1_ |a Yoshida, S.
700 1_ |a Jurgens, G.
773 0_ |t Plant journal. |g 2004 Apr., v. 38, no. 2 |o 1022655640 |x 0960-7412 |7 nnas |9 jnl47643
852 __ |a DNAL |i QK710.P68
930 __ |a 20040525 |b 00000000 |c 00000000
945 __ |a IND |d JIT |e 2004/05/03
946 __ |a Non-US

2.3.7.3 Article Retractions

Prior to 1997, retracted articles were identified by the addition of a retraction note in the 500 field. Effective January 1, 1997, NAL began to add the retraction note as bracketed information following the title in the 245 field. As in the errata notice, the retraction notice includes the citation to the source of the retraction.

Example of Indexing Record with Retraction:

```
000 03152caa 2200409 450
001 3614845
005 20040408095124.0
008 040304e20031009||| 000 0 eng
040 __ |a AGL
072 _0 |a L600
072 _0 |a M001
072 _0 |a M120
100 1_ |a Adhikari, S.
245 10 |a Effect of calcium and magnesium hardness on acute copper toxicity to Indian major carp, Labeo rohita (Hamilton) and catfish, Channa punctatus (Bloch). [Retraction: 2004 Mar. 25, v. 35, no. 4, p. 311.]
300 __ |a p. 975-980.
504 __ |a Includes references
650 _3 |a Labeo
650 _3 |a carp
650 _3 |a fingerlings
650 _3 |a Channa punctatus
650 _3 |a catfish
650 _3 |a juveniles
650 _3 |a freshwater fish
650 _3 |a mortality
650 _3 |a copper sulfate
650 _3 |a toxic substances
650 _3 |a algicides
650 _3 |a acute toxicity
650 _3 |a calcium carbonate
650 _3 |a magnesium
650 _3 |a water hardness
653 __ |a Labeo rohita
773 0_ |t Aquaculture research. |g 2003 Oct. 9, v. 34 no. 12 |o 1022630051 |x 1355-557X |7 nnas |9 jnl53865
852 __ |a DNAL |i SH1.F8
945 __ |a IND |d NZM |e 2004/03/12
946 __ |a Non-US
```

2.3.8 Field 591 – IN-PROCESS NOTE

Indexing records for which subject indexing terms and codes have not yet been assigned contain a note in field 591 that reads "In process."

2.3.9 Field 592 - PUBLISHER-SUPPLIED DATA RECORDS

In April 2005, the National Agricultural Library began adding publisher-supplied data records to AGRICOLA's Article Citation Database. Thus far, more than 425,000 records have been added. Using publisher-supplied data allows records to be added to AGRICOLA in a more

timely and cost-effective manner and increases the number of records with author-created abstracts.

NAL receives data records from publishers on a weekly basis. The records are converted into MARC 21 format by means of an in-house conversion program. Edits and validations are performed on the records, and the records are added to AGRICOLA. Links are created from the article records to the journal (host) record.

Currently, NAL receives publisher data records for 706 journal titles. The list of journal titles for which NAL receives publisher-supplied data may be found in Appendix E. Some publisher data records will be enhanced with 072's and 65x's; others will have the authors' keywords mapped to controlled and uncontrolled subject terms.

Publisher-supplied data records may differ slightly from NAL-created indexing records. Authors' names may be formatted differently from the way they appear on NAL-created records. Most author names in NAL-created indexing records consist of the author's last name and initials, whereas publisher-supplied data records may include full first and/or middle names. Since September 2008, complete author names have been included in NAL-created indexing records. Some publisher-supplied records include diacritics and other characters that may not display properly. Publisher-supplied records contain a "dummy" barcode number in field 773 \$o; this occurs because there is no corresponding print version of the publication to which a barcode number has been assigned. Publisher-supplied records contain a note that reads "Publisher supplied data" in field 592 \$a. Field 773 \$d (publication information) occurs only in publisher-supplied data records.

Example of Indexing Record with Publisher-Supplied Data:

000 02645caa a22003495 450

001 3867931

005 20070202062206.0

008 070114e200702 ||| 000 0 eng

016 7_ |a IND43867931 |2 DNAL

035 __ |a 3867931

040 __ |a AGL

100 1_ |a Soleimani, V. D.

245 10 |a Analysis of Genetic Diversity in Barley Cultivars Reveals Incongruence Between S-SAP, SNP and Pedigree Data |h [electronic resource].

300 __ |a p. 83-97.

504 __ |a Includes references

- 520** __ |a Accurate assessment of genetic similarity is important for plant breeding, germplasm enhancement and conservation of plant genetic resources. A comparative analysis of genome diversity among a group of six-rowed spring barley (*Hordeum vulgare* L.) cultivars was carried out using sequence-specific amplified polymorphism (S-SAP) and single nucleotide polymorphism (SNP), with the results compared to the kinship coefficients derived from the pedigree data. Mean pair-wise GS values were estimated to be 0.0957 ± 0.144 (Kinship), 0.491 ± 0.189 (SNPs), and 0.602 ± 0.098 (S-SAPs). S-SAP and SNP-based genetic similarity (GS) values were normally distributed but kinship values had a non-normal and skewed distribution. Pair-wise correlation of GS values were lowest for the S-SAP and the SNP matrices ($r = 0.040$, $p < 0.230$) and highest for the SNP and pedigree matrices ($r = 0.240$, $p < 0.001$). Analysis of molecular variance (AMOVA) attributed about 90.4% of observed variation to the cultivars within each of the malting and feed groups. Variance component between malting and feed groups was 6.6% for both SNP and S-SAP data suggesting lack of a significant genetic differentiation along this agronomic division. The remaining 3% of variation was attributed to genetic diversity within cultivars. Although both DNA-based marker systems were able to differentiate all barley cultivars, significant difference were observed in the pattern of genetic relationships obtained by the two marker systems and the pedigree data.
- 592** __ |a Publisher supplied data
- 650** _3 |a barley
- 650** _3 |a *Hordeum vulgare*
- 653** __ |a Genetic similarity
- 653** __ |a Genome evolution
- 653** __ |a Kinship coefficient
- 653** __ |a SNP
- 653** __ |a S-SAP
- 655** _3 |a Internet resource
- 700** 1_ |a Baum, B. R.
- 700** 1_ |a Johnson, D. A.
- 773** 0_ |t Genetic resources and crop evolution. |d Dordrecht : Kluwer Academic Publishers |g 2007 Feb., v. 54, no. 1 |o DUM0009547 |x 0925-9864 |7 nnas |9 jnl49569
- 852** __ |a DNAL |i SB123.3 .G46
- 856** 41 |u <http://dx.doi.org/10.1007/s10722-005-1886-4>
- 930** __ |a 20070114 |b 20070202 |c 00000000
- 946** __ |a Non-US

2.3.10 Fields 6XX SUBJECT ADDED ENTRIES

Most of the records produced by the NAL Cataloging Branch and its cooperators contain Library of Congress Subject Headings (LCSH). Topical LCSH terms are recorded in MARC field 650, with a second indicator of 0. LCSH terms having a geographic subfield \$a are recorded in MARC field 651. Cataloging records may also contain other MARC 6XX fields (600, 610, 611, 630, 653, and 655), as appropriate. Some cataloging records may contain NALT terms in fields 650 and/or 651, second indicator 3. Cataloging records may contain multi-faceted 6XX fields, using subfields as provided for by MARC 21. Some cataloging records, primarily those for monographs in series ("analytics"), may have no subject headings at all.

All of the records produced by the NAL Indexing Branch and its cooperators now contain National Agricultural Library Thesaurus terms (NALT). Originally, a technique known as title enrichment was used on CAIN records, where alternate terms for words in the title were placed in brackets within the title of an article. During the conversion of these records into MARC format, these phrases and the journal article title were moved into field 246 (Varying

form of title). The original journal article title without the enrichments is in field 245 (Title statement). In 2010, many records that originally didn't have any subject terms were automatically assigned subject terms based on their category codes (072's). These subject terms are identified by the phrase, "auto-assigned by category code" in field 650 \$9.

Some CAIN records produced by NAL cooperators have subject terms that have been validated against the NAL Thesaurus. If they matched a NALT term they were put into field 650 (Subject added entry - Topical term) or 651 (Subject added entry - Geographic term), second indicator 3. If they did not match they were put into field 653 (Index term - Uncontrolled).

Beginning in 2003, all full level indexing records (those produced by NAL's Indexing Branch) have been assigned subject terms from the NAL Thesaurus (NALT). The NALT can be found at: <http://agclass.nal.usda.gov/agt/agt.shtml>. The 2011 edition is the tenth edition of the NAL Agricultural Thesaurus. A complete history of the NALT can be found in Appendix F. NALT topical terms are recorded in MARC field 650, with a second indicator of 3. NALT geographic terms are entered in MARC field 651, also with a second indicator of 3. Terms that had previously been assigned from the CAB Thesaurus (CABT—produced by CAB International and used by NAL from October 1985-December 2002) were converted retrospectively to corresponding NALT terms in the entire file of indexing records. CABT terms that did not correspond to an equivalent term in NALT were moved to MARC field 653 for uncontrolled subject terms.

All DSpace Digital Repository records, including the cataloging records, contain NALT terms in field 65x _3.

In November 2004, as part of an effort to reduce existing indexing backlogs and to improve AGRICOLA's currency, NAL implemented a new, faster approach to AGRICOLA indexing, known as turbo indexing. With turbo indexing, indexers assign subject terms only from the title, abstract, and purpose statement of each journal article. A limit is placed on the amount of time an indexer spends processing each journal article.

In order to improve the quality of the AGRICOLA database, starting in 2011, NAL's distribution file will only include indexing records that have NALT subject terms. This change resulted in a decrease of approximately 620,000 indexing records from the annual reload file. Cataloging records were not affected by this change.

Typical Indexing Journal Article Record with NAL Thesaurus Terms Assigned

000 01016naa 2200373I 450
001 3603555
008 030910e200305 ne 00 0 eng
016 7_ |a IND23340723 |2 DNAL
035 __ |9 3340-72360
040 __ |a AGL
072 __ |a J800
072 __ |a J200
072 __ |a F120
100 1_ |a Arriaga, F.J.
245 10 |a Corn production on an eroded soil: effects of total rainfall and soil water storage.
300 __ |a p. 87-93.
504 __ |a Includes references
650 _3 |a Zea mays
650 _3 |a corn
650 _3 |a grain yield
650 _3 |a silt loam soils
650 _3 |a eroded soils
650 _3 |a water erosion
650 _3 |a long term experiments
650 _3 |a rain
650 _3 |a soil water storage
651 _3 |a Wisconsin
700 1_ |a Lowery, B.
773 0_ |t Soil & tillage research. |p Soil tillage res. |g May 2003. v. 71 (1) |x 0167-1987 |y
SOTRD5 |7 nnas |9 jnl32961
790 __ |a 0195-75360
852 __ |a DNAL |i S590.S48
930 __ |a 20031001 |b 00000000 |c 00000000
945 __ |a IND |d RHF
946 __ |a Non-US

Typical Cataloging Record with LCSH Assigned

000 01382cam 2200373 a 450
001 928364
005 20041210220045.0
008 041210s2004 wiu a b s001 0beng
010 __ |a 2103020570
016 7_ |a CAT30928364 |2 DNAL
035 __ |a (OCoLC)ocm93131229
035 __ |a 928364
040 __ |a DLC |c DLC |d AGL
020 __ |a 0299196402 (alk. paper)
043 __ |a n-us--- |a n-us-wi
070 0_ |a E748.N43 |b C47 2004
049 __ |a AGLL
100 1_ |a Christofferson, Bill.
245 14 |a The man from Clear Lake : |b Earth Day founder Gaylord Nelson / |c Bill Christofferson.
260 __ |a Madison, Wisc. : |b University of Wisconsin Press, |c c2004.
300 __ |a vii, 403 p. : |b ill. ; |c 24 cm.
504 __ |a Includes bibliographical references (p. 389-392) and index.
600 10 |a Nelson, Gaylord, |d 1916-
650 _0 |a Legislators |z United States |v Biography.
610 10 |a United States. |b Congress. |b Senate |v Biography.
650 _0 |a Environmentalists |z United States |v Biography.
650 _0 |a Conservationists |z United States |v Biography.
650 _0 |a Earth Day |x History.
650 _0 |a Environmentalism |z United States |x History |y 20th century.
650 _0 |a Environmental protection |z United States |x History |y 20th century.
651 _0 |a United States |x Environmental conditions.
650 _0 |a Governors |z Wisconsin |v Biography.
930 __ |a 20041210 |b 00000000 |c 00000000
946 __ |a Other US

2.3.10.1 Use of MARC Field 653 for Identifiers

The NAL Thesaurus and Library of Congress Subject Headings are the sources of the principal subject descriptors employed in the AGRICOLA database and constitute a strong unifying factor for AGRICOLA. From time to time, it is also necessary to employ subject terms which are not contained in these two sources. When this situation arises, these terms are recorded in MARC field 653. We encourage AGRICOLA users to treat terms recorded in field 653 as uncontrolled keywords rather than descriptors. Such a practice will, over time, preserve the integrity of the online descriptor index (which will contain only NAL Thesaurus terms and LCSH) and minimize retrieval "noise" caused by the inclusion of uncontrolled terms.

2.3.10.2 Use of MARC Field 655 -- Index Term--Genre/Form

All AGRICOLA records for electronic resources contain MARC field 655:

655 _3 \$a Internet resource

DSpace Digital Repository records also contain a subfield x which indicates if an item is "in process" for AgSpace or in "AgSpace."

655 _3 \$a Internet resource \$x AgSpace

2.3.11 Field 773 HOST ITEM ENTRY

MARC field 773 is used to convey the "host item" data. The host item may be thought of as the physical volume which contains the bibliographic unit being described (i.e. the "target item"). For example, if the bibliographic record describes a journal article (the target item), then field 773 provides information about the journal issue in which the article appears. If the target item is a book chapter, then field 773 contains data concerning the monograph in which the chapter appears. If the target item is an item or a subunit of a miscellaneous special collection, then field 773 contains data concerning the entire collection, or, as in the case of some item level records, the subunit of the collection.

NAL uses field 773 primarily for indexing records (in MARC terms these are described as "component parts"). Indexing or component part records may be distinguished by examining the MARC record leader, positions 6 and 7 (counting from 0). A value of "aa" in these positions indicates a component part indexing record.

e.g., [LDR] 00000naa**bb**2200000**bb**4500

The presence of an "aa" in these positions indicates that the bibliographic record describes either a journal article or a book chapter (or at least is treated as such by NAL). Whether the item described is a journal article or book chapter is indicated by the value in the last position of the control subfield (\$7) of field 773 (either "s" or "m" -- see below). Additionally, if the item described is part of a collection, this is indicated by "bc" in the last two positions of the control subfield. Field 773 replaces the function previously performed by fields 860 and 861 (now obsolete).

Because it is so critical to the proper processing of AGRICOLA records, field 773 will be examined in detail.

773 Host item entry
Indicator 1: 0
Indicator 2: blank
\$7 Control subfield
\$9 Journal linking identification number for indexing records; links article to the issue of the journal
\$a Main entry
\$b Edition
\$d Place, publisher, and date of publication
\$g Relationship information
\$k Series data for related title
\$o Issue barcode number or, in the case of publisher-supplied records, the prefix DUM followed by a number
\$p Serial title abbreviation
\$r Report number (MARC 088)
\$s Uniform title
\$t Title

\$u Standard technical report number (MARC 027)
\$x ISSN
\$y CODEN
\$z ISBN

The indicators for field 773 are machine-generated and have no particular significance in NAL's implementation.

As previously stated, the control subfield (\$7) provides important information concerning the document type. The control subfield consists of four lower case alphabetic characters; the last character has the greatest significance for AGRICOLA users.

[773] 0# \$7 nnas (journal article)
[773] 0# \$7 nnam (book chapter)

If the last value of \$7 is "s" then the document type is a journal article (first case, above). If the last value of \$7 is "m" then the document type is a book chapter (second case, above). If the third and fourth values contain "bc" the document type is a collection item. For example:

[773] 0# \$7nnbc (collection item; host item is a collection)

To discuss the other subfields it is useful to examine a typical record:

Example of Journal Article Record

```
000 02447caa 2200385 450
001 3651470
005 20041207220350.0
008 041022e20041006||| 000 0 eng
016 7_ |a IND43651470 |2 DNAL
035 __ |a 3651470
040 __ |a AGL
072 _0 |a F831
072 _0 |a S200
072 _0 |a H000
100 1_ |a Kim, Y.M.
245 10 |a Anthraquinones isolated from Cassia tora (Leguminosae) seed show an antifungal
property against phytopathogenic fungi.
300 __ |a p. 6096-6100.
504 __ |a Includes references
650 _3 |a Senna tora
650 _3 |a seeds
650 _3 |a anthraquinones
650 _3 |a antifungal properties
650 _3 |a plant pathogenic fungi
650 _3 |a botanical pesticides
650 _3 |a pesticidal plants
700 1_ |a Lee, C.H.
700 1_ |a Kim, H.G.
700 1_ |a Lee, H.S.
773 0_ |t Journal of agricultural and food chemistry. |g 2004 Oct. 6, v. 52, no. 20 |o
```

1022635697 |x 0021-8561 |7 nnas |9 jnl45611
852 __ |a DNAL |i 381 J8223
930 __ |a 20041207 |b 00000000 |c 00000000
939 __ |a 20041022 |b 20041101 |c 00000000
945 __ |a IND |d RHF |e 2004/12/07
946 __ |a Other US

Notes on subfields for journal articles (773):

\$7: Control subfield

[773] 0# \$7 nnas (journal article)

\$9: Journal linking identification number

\$a: Main Entry: The primary access point of the host item. Comes from the 1XX field of the host cataloging record.

\$g: Relationship Information: Provides date, volume, issue number concerning the journal issue in which the journal article appears. This subfield is mandatory for journal article records. It does not appear for book chapters.

\$o: Issue record barcode number or, in the case of publisher-supplied records, the prefix DUM followed by a number

\$p: Serial Title Abbreviation: The abbreviated title of the serial in which the journal article appears.

\$t: Title: The full journal title in which the journal article appears. In field 773, subfield t is required if available.

\$x: International Standard Serial Number (ISSN): The 8-digit hyphenated identifying code for a serial (e.g., 0095-2494). This subfield occurs as appropriate and when available.

\$y: CODEN: A 5- or 6-character code for the journal title. This subfield occurs as appropriate and when available.

Pagination information is contained in MARC field 300. This is true of both journal articles and book chapters.

A book chapter record is very similar to a journal article record, but has important differences. It is useful to examine a typical book chapter record, as well.

Example of Book Chapter Record

000 01079naa 2200301 450
001 2533944
008 860107t19851984 ab 00000 eng d
016 7_ |a IND86002584 |2 DNAL
035 __ |9 0822-01260
040 __ |a AGL
072 __ |a F120
072 __ |a X600
100 1_ |a Gray, T.I. Jr.
245 13 |a An application of advanced very high resolution radiometer data to monitor the world's agriculture.
300 __ |a p. 387-398. |b ill., maps.
500 __ |a Paper presented at the "Interactive International Symposium on Applications of Remote Sensing for Rice Production," Sept 9/11, 1981, Secunderabad, India.
504 __ |a Includes references.
650 _3 |a Oryza sativa
650 _3 |a radiometry
650 _3 |a data analysis
650 _3 |a Landsat
653 __ |a lacie
653 __ |a agristars
700 1_ |a McCrary, D.G.
773 0_ |t Applications of remote sensing for rice production / edited by Adarsh Deepak, K.R. Rao. |d Hampton, Va. : A. Deepak Pub., [1985], c1984. |z 0937194034 |7 nnam
852 __ |a DNAL |l SB191.R5I584
930 __ |a 00000000 |b 19860107 |c 00000000
946 __ |a Other US

Notes on subfields for book chapters:

\$7: Control subfield

[773] 0~~b~~ \$7 nnam (book chapter)

\$9: Book linking identification number

\$a: Main entry heading.

\$b: Edition.

\$d: Place, Publisher and Date of Publication: Imprint information concerning the title described in \$t.

\$g: Relationship Information: There is *no* \$g for book chapters. This subfield is only appropriate in the case of serial titles.

\$k: Series Data for Related Title.

\$r: Report Number (MARC 088).

\$t: Title: contains the full "statement of responsibility" for the host book. This provides additional identification and verification information for the user.

\$z: International Standard Book Number: A 10- or 13-digit identifying code for a book (e.g., 925102992X). This subfield appears as appropriate and when available.

Collection Item Records:

An item record or subunit record of a miscellaneous special collection contains elements that are found in both book chapter and journal article records. A typical item record would be:

Example of Collection Item Record

000 01367naa 2200469 450
001 3170573
008 960729s1993 xxu f00 0 eng
016 7_ |a IND20523374 |2 DNAL
035 __ |9 0523-37460
040 __ |a AGL
072 __ |a X500
072 __ |a P120
100 1_ |a Dunn, R.O.
245 10 |a Solubilization and related phenomena in nonaqueous triolein/unsaturated long chain fatty alcohol/methanol solutions.
300 __ |a 16 p.
500 __ |a Indexed from reprint: Journal of Dispersion Science and Technology. v. 14 (1), p. 1-16.
504 __ |a Includes references
650 _3 |a triolein
650 _3 |a methanol
650 _3 |a fatty alcohols
650 _3 |a solutions
650 _3 |a solubilization
650 _3 |a viscosity
650 _3 |a fuels
650 _3 |a solubility
650 _3 |a physicochemical properties
653 __ |a micelles
653 __ |a oil miscible concentrates
653 __ |a unsaturated long chain fatty alcohols
653 __ |a miscible phase activity
653 __ |a hybrid fuels research
653 __ |a miscibility
653 __ |a interfacial tension
653 __ |a diesel fuels
700 10 |a Schwab, A.W.
700 10 |a Bagby, M.O.
773 0_ |t ARS reprints collection. |g 1993. [559] |7 nnac |9 iss612
790 __ |a 0747-09960
852 __ |a DNAL |i aS441.A77
930 __ |a 19960801 |b 19960808 |c 00000000
945 __ |a IND |d RAE
946 __ |a USDA

Notes on subfields for collection items:

\$7: Control subfield

\$9: Journal linking identification number

\$a: Main Entry: The main entry of the host item.

\$d: Place, Publisher and Date of Publication: Imprint information concerning the title described in \$t.

\$g: Relationship Information: The \$g is used for multivolume collections to identify the location of items or subunits.

\$t: Title: For item and subunit records, \$t contains the full "statement of responsibility" for the host collection. This provides additional identification and verification information for the user.

2.3.12 Field 852 HOLDINGS LOCATION/CALL NUMBER

MARC field 852 has been used since January 1985 to convey holdings location and call number information. Field 852 is repeatable and allows AGRICOLA to provide an institutional holdings symbol linked to that organization's call number. This is especially important for records input by contributors other than NAL. Field 852 replaced the function of the 860/861 with embedded 070/090 fields in indexing records. In cataloging records, it provides a convenient method of linkage between a holding institution (either NAL or a contributor) and its call number.

852 Location/call number

Indicator 1: blank

Indicator 2: blank

\$a Institution/location

\$b Sublocation/collection

\$i Call number

Following are some typical examples of the use of field 852:

[852] ~~00~~ \$aDNAL \$iSB322.A1B5 (NAL Record)

[852] ~~00~~ \$aAzU-A \$iSB322.A1B53 (Arid Lands; Contributor Record)

Notes on subfields for Holdings Location/Call Number:

\$a: This subfield contains an institutional holding symbol corresponding to the organization which holds the document described in the record. When available, the National Union Catalog (NUC) holding symbol is used. When an NUC holding symbol is unavailable another AGRICOLA-unique symbol is created and employed.

In the first example above, the holding institution is the National Agricultural Library (whose NUC holding symbol is "DNAL").

In the second example above, the holding institution is the Arid Lands Information Center at the University of Arizona (whose NUC holding symbol is "AzU-A").

\$b: This subfield may contain a sublocation (where the document is held) within the institution reported in subfield \$a. The sublocation symbol is only unique within the main institution reported in subfield \$a.

\$i: This subfield contains the call number for the document corresponding to the institution designated in \$a.

Multiple 852 fields may occur within a single bibliographic record, and in such instances will provide information about holdings at more than one location.

2.3.13 Field 856 ELECTRONIC LOCATION AND ACCESS

Field 856 provides the information needed to locate and access an electronic resource. AGRICOLA cataloging records for remote electronic resources contain URLs in field 856 linking directly to full-text documents or related resources. Indexing records for remote electronic resources contain URLs linking either to full-text articles or abstracts, or to publisher Web sites. Although URLs are updated on a regular basis, broken links may occur in bibliographic records.

DSpace Digital Repository records contain NAL Handles in field 856. Field 856 of DDR records also contains a subfield "y" that reads: "Available in AgSpace, NAL's Digital Repository."

2.3.14 Fields 910/946 Subfield \$a DOCUMENT SOURCE CODE

In December 2003, when Voyager was implemented, field 946 replaced field 910. The purpose of field 946 is to provide a means for the identification and grouping of publishers of particular importance to the agricultural community and to the National Agricultural Library. The document source names used in field 946 of AGRICOLA records are listed in Table 3 below:

Table 3. Document Source Names

- USDA (all documents published by the Dept. of Agriculture)
- State experiment station
- State extension service
- FAO (Food and Agriculture Organization of the UN)
- Translation (selected research documents)
- Other US (all U.S. publications not otherwise tagged)
- Non-US (published in a foreign country)

Historical Note

In January 1980, in order to comply with USMARC standards, the use of field 069 for this purpose was discontinued and field 910 was adopted. From January 1979 to January 1980,

a single-digit document source code was recorded in MARC field 069, subfield \$a (see Table 4). The code was applied to reflect any USDA affiliation relationship present. For example, if the document was published outside the U.S., but the journal article being described was authored by a USDA employee, then the code "1" would have been applied. For a brief period, subfields \$b and \$c were added to field 069.

Table 4. Single-Digit Document Source Code

- 1 USDA imprints
- 2 State Agricultural Experiment Station imprints
- 3 State Agricultural Extension Service imprints
- 4 FAO imprints
- 5 Translations of articles (to be used only with documents to be included in the Translations File in the Public Catalog and the Translation Section of the Monthly Catalog)
- 6 All other US imprints not to include types 1, 2 or 3
- 7 All foreign imprints

For cataloging records, an agency source code was entered in field 910, subfield w. This code denoted the organizational unit responsible for the publication as author, publisher, or sponsor.

For indexing records, an agency source code used to be entered in field 100, subfield u. This code denoted the organizational affiliation of the primary author of the document but is not in our records anymore.

In May of 2007 field 910 was reestablished for use in DDR records only. Field 910 codes are listed in the table below:

Agency Name	Field 910 Code
Agricultural Marketing Service	\$a USDA \$b AMS
Agricultural Research Service	\$a USDA \$b ARS
Alternative Agricultural Research and Commercialization Center	\$a USDA \$b AARC
Animal and Plant Health Inspection Service	\$a USDA \$b APHIS
Center for Nutrition Policy and Promotion	\$a USDA \$b CNPP
Cooperative State Research Education and Extension Service	\$a USDA \$b CSREES
Departmental Administration	\$a USDA \$b DA
Economic Research Service	\$a USDA \$b ERS
Farm Service Agency	\$a USDA \$b FSA
Food and Nutrition Service	\$a USDA \$b FNS
Food Safety and Inspection Service	\$a USDA \$b FSIS
Foreign Agricultural Service	\$a USDA \$b FAS
Forest Service	\$a USDA \$b FS
Grain Inspection Packers and Stockyards Administration	\$a USDA \$b GIPSA
Housing and Community Facilities Programs	\$a USDA \$b RHS
National Agricultural Library	\$a USDA \$b NAL
National Agricultural Statistics Service	\$a USDA \$b NASS
National Appeals Division	\$a USDA \$b NAD

National Institute of Food and Agriculture	\$a USDA \$b NIFA
Natural Resources Conservation Service	\$a USDA \$b NRCS
Office of Administrative Law Judges	\$a USDA \$b OALJ
Office of Budget and Program Analysis	\$a USDA \$b OBPA
Office of Civil Rights	\$a USDA \$b OCR
Office of Communications	\$a USDA \$b OC
Office of Congressional Relations	\$a USDA \$b OCR
Office of Ethics	\$a USDA \$b OE
Office of Human Capital Management	\$a USDA \$b OHRM
Office of Operations	\$a USDA \$b OO
Office of Outreach	\$a USDA \$b OUTREACH
Office of Procurement and Property Management	\$a USDA \$b OPPM
Office of Risk Assessment and Cost-Benefit Analysis	\$a USDA \$b ORACBA
Office of Security Services	\$a USDA \$b OSS
Office of Small and Disadvantaged Business Utilization	\$a USDA \$b OSDBU
Office of the Chief Economist	\$a USDA \$b OCE
Office of the Chief Financial Officer	\$a USDA \$b OCFO
Office of the Chief Information Officer	\$a USDA \$b OCIO
Office of the Executive Secretariat	\$a USDA \$b OES
Office of the Inspector General	\$a USDA \$b OIG
Office of the Judicial Officer	\$a USDA \$b OJO
Office of the Management Services	\$a USDA \$b OMS
Office of the Secretary	\$a USDA \$b SEC
Office of the General Counsel	\$a USDA \$b OGC
Risk Management Agency	\$a USDA \$b RMA
Rural Business-Cooperative Service	\$a USDA \$b RBS
Rural Development	\$a USDA \$b RD
Rural Utilities Service	\$a USDA \$b RUS
World Agricultural Outlook Board	\$a USDA \$b WAOB

2.3.15 Field 947 AGSPACE COMMUNITIES

MARC field 947 is used to identify specific communities for some AgSpace articles in the DDR.

947 \$a USDA \$b ARS Science Hall of Fame \$c Andrew N. Sharpley (2008)

2.3.16 Field 980 COOPERATOR RECORDS

NAL has cooperative agreements with a number of Land-Grant Colleges and some other U.S. universities to distribute AGRICOLA records for agriculturally related publications that are cataloged by those institutions. Field 980 is used to indicate that NAL may or may not have these publications in its collection.

980 \$a Record cataloged by University of Wisconsin, NAL may NOT own this title.

3. AGRICOLA RECORD DISTRIBUTION SYSTEM (ARDS)

3.1 BACKGROUND

NAL produces an AGRICOLA monthly file and distributes it to AGRICOLA subscribers through the National Technical Information Service (NTIS). Each monthly file contains the new, corrected, and deleted bibliographic records produced by the NAL using the Voyager library system.

NAL has been delivering the AGRICOLA monthly file in MARC21 format using the MARC-8 character set since December 2003. Since March 2007, because of the recent introduction of Unicode capabilities in NAL systems, the AGRICOLA file has been distributed in UTF-8 format. The Library of Congress's website contains the complete specification at: <http://www.loc.gov/marc/specifications/speccharucs.html>

3.2 PROGRAM

The AGRICOLA Record Distribution System (ARDS) was written to replace the VTLS programs. This system takes advantage of the Voyager's use of Oracle relational database and the flexibility of the UNIX Operating System.

3.3 FUNCTIONS

The ARDS performs four main functions: selection, conversion, marking and statistics.

Selection:

The ARDS selects cataloging and indexing records based on a tracking system stored in the MARC 930 tags of the bibliographic record. A nightly batch program updates the information in the 930 whenever a record is created or modified. In addition, the program checks for the presence of key fields in the MARC records and prevents duplicate records from being added to the AGRICOLA file.

Conversion:

ARDS makes the following changes to the records before writing them to the monthly file:

- Deletes locally used MARC tags and subfields.
- Moves the AGRICOLA number to the MARC field 001.
- Corrects the record status in the record leader.

Marking:

ARDS updates the 930 tag in the Voyager system to track the status of AGRICOLA records. The program also keeps track of the history of the selection and issuance of the records.

Statistics:

ARDS provides the following statistics on the AGRICOLA monthly file's transmittal sheet:

The number of records produced for AGRICOLA by the Cataloging Branch, the Indexing Branch, and NAL cooperators.

- A breakdown of created, corrected and deleted record by record type.
- A breakdown of records by record status.
- List of AGRICOLA IDs of corrected and deleted records.

3.4 CORRECTED AND DELETED AGRICOLA RECORDS

The National Agricultural Library began issuing corrected records to the AGRICOLA database in January 1997. Corrected records contain a "c" in the leader, character position 5. NAL provides a separate ASCII file of AGRICOLA accession numbers (016 field) for retrospective records to be deleted. Both corrected records and records to be deleted are included on the monthly sale file.

3.5 SPECIAL INSTRUCTIONS

Two types of problems that may occur in AGRICOLA bibliographic records are data entry errors and format errors in the file caused by either hardware or software defects. If a data entry error is discovered in any record, the user should either call or write to Database Manager, Information Systems Division, National Agricultural Library, Beltsville, Maryland 20705, Telephone: (301) 504-6813. If a file or record is unreadable, contact the National Technical Information Service (<http://www.ntis.gov/>).