Supporting the Research Lifecycle with the National Agricultural Library

FDLP Academy
April 27, 2021
NAL facilitates the creation of agricultural knowledge through the acquisition, curation, and dissemination of information needed to solve agricultural challenges.
Objectives

- Introduce publicly available research tools and services of the National Agricultural Library
- Learn how to use these tools and services to conduct and support research throughout each stage of the research lifecycle
Overview

I. Research Idea Development
II. Research Planning
III. Conducting Research
IV. Writing and Publishing
V. Dissemination and Preservation
I. Research Idea Development
AGRICOLA

https://agricola.nal.usda.gov

AGRICOLA database comprehensively covers agricultural literature:

• 5,200,000+ records to as far back as the 15th century

• Print and Electronic Materials from the NAL Collection
African indigenous knowledge on edible insects to guide research and policy

Title: African indigenous knowledge on edible insects to guide research and policy
Author: Niasey, S.
Other Author(s): Flaboe, K.K.M., Affognon, H.D., Akutse, K.S., Tanda, M.C., Ekei, S.

Found in: Journal of insects as food and feed. 2016 June 15, v. 2, no. 3
Electronic Resource: Available from publisher’s site

Holdings Information
Database: NAL Cataloging Database
Location: Electronic Resource (NON-CIRCULATING)
Call Number: GN409.5
Number of Items: 0
NAL Thesaurus

https://agclass.nal.usda.gov

• Contains over 265,000 terms, including 153,000+ descriptors in English and Spanish

• NAL Thesaurus includes hierarchical, equivalents and associate relationships among concepts

• NAL Thesaurus is used to select controlled vocabulary terms for subject indexing of AGRICOLA, PubAg and other databases
PubAg

https://pubag.nal.usda.gov

PubAg is a free, searchable database containing links to:
• 300,000+ full-text articles* relevant to the agricultural sciences
• indexed citations to peer-reviewed journal articles in the agricultural sciences
Determination of 7α-OH cholesterol by LC-MS/MS: Application in assessing the activity of CYP7A1 in cholestatic minipigs

Author: Yun, Changhong, Yin, T'ai-jun, Shatzer, Katherine, Burrin, Douglas G., Cui, Liwei, Tu, Yifan, Hu, Ming

Source: Journal of Chromatography 2016 v.1025 pp. 76-82

ISSN: 1570-0232

Subject: acetonitrile, cholesterol, chromatography, formic acid, liver, liver microsomes, miniature swine

Abstract: An LC-MS/MS method was developed and validated to determine 7α-OH cholesterol in liver microsome. This method was convenient and fast with high specificity and sensitivity. Briefly, a gradient elution was performed on a Synergi polar-C18 column (50×4.6 mm i.d., 3 μm). The mobile phase (consisting of 0.1% HCOOH solution and acetonitrile) eluted in gradient at a flow rate of 1 ml/min. MS detection was operated on APCI (+) mode; the MRM transitions for 7α-OH cholesterol and D7-cholesterol (I.S.) were 385.1→159.1 and 376.4→266.3, respectively. The linear response range of 7α-OH cholesterol was covered from 1.563 to 100.0 ng/ml. All of the validation items meet the requirement of FDA guidance for bioanalytical method validation. This method was applied to enzymatic studies for determination of cholesterol 7alpha-hydroxylation activity catalyzed by CYP7A1 in the cholestatic minipigs liver microsomes.
PubAg Links to USDA-funded Publications

• Free public access to the best available full-text version of USDA-funded scholarly publications

• Access to full text will occur after at least a 12-month administrative interval.

• Access will be provided earlier when the publisher makes a full-text version available for free
Food Safety Research Projects Database

• Browse food safety categories, commodities, and funding sources from the homepage.

• Dynamic filtering in advance search allows you to choose any combination of categories, food types, and funding agencies.

• Features that allows you to sort by relevance, date, or title.

Learn more at: https://www.nal.usda.gov/fsrio/research-projects
FSRIO Research Publications Feed

- Provides ready access to the latest food safety research publications, including ahead of print.
- Currently tracks 200+ journals
- Publications generated by these feeds are grouped by:
  - Journal
  - Subject

Learn more at: https://www.nal.usda.gov/fsrio/research/publications
Animal Welfare Literature Review Training

Meeting the Information Requirements of the Animal Welfare Act

This in-person workshop is intended for the regulated community (any personnel working with animals in research, testing, or education) and is typically held at the National Agricultural Library (NAL) in Beltsville, Maryland. However, due to COVID-19, AWIC is offering this workshop through a virtual platform.

About the Workshop

The regulations of the AWA require that investigators provide Institutional Animal Care and Use Committees (IACUCs) with documentation demonstrating that alternatives to procedures that may cause more than momentary pain or distress to the animals have been considered and that activities do not unnecessarily duplicate previous experiments. A thorough literature search regarding alternatives meets this Federal mandate. An alternative is any procedure which results in the reduction in the numbers of animals used, refinement of techniques, or replacement of animals.

Real-Time Workshop

Self-Paced AWIC Workshop

Online Animal Welfare Workshop

To Register: http://bit.ly/2ZLkAtd

This online version of the workshop provides an interactive environment where participants can learn about conducting literature searches, the history of animal welfare law and the specific responsibilities of researchers and IACUCs.

Combining the expertise of the AWIC staff and the flexibility of self-paced learning, the online workshop meets the needs of researchers, librarians and IACUC members nationwide.

What You'll Cover

- A historical overview of the Animal Welfare Act (AWA), and regulations
- What is meant by the Information requirements of the Animal Welfare Act (AWA).
- 3Rs Alternatives of Reduction, Refinement, and Replacement
- Databases and resources available to access scientific literature
- A systematic approach to accessing information and creating effective literature search strategies.
Customizable Trainings

Freely provided upon request

- Information Requirements of the AWA
- History of the Animal Welfare Act
- 3Rs Alternatives/Resources
- Conducting a Literature Search
- Animal Welfare Information Center (AWIC)
II. Research Planning
Data Management Challenges

People (Researchers)
- Not trained in data management
- Don’t think about long-term preservation
- Career demands to produce papers outweigh managing data
- Great need for effective collaboration tools (with controls)
- Few researchers know about services offered by libraries

7 Greatest Causes of Data Loss
(+media degradation over time)
- Deleting files accidentally
- Viruses and damaging malware
- Hardware crashes
- Power failures
- Computer theft
- Spilling coffee/water other damaging fluids

What is a Data Management Plan?

• A guideline for the life cycle of your data

• A brief outline
  – Who
  – What
  – When
  – Where
  – How

• Easy to understand
A Data Management Plan is NOT...

• An in-depth documentation of your protocol
• Workflows instructions, charts, diagrams, the names of every person or company who will interact with the project, or in-depth review guidelines
• The end of the conversation about data management
• Concerned with paper or manuscript publication
Why Create a DMP?

• Proper management of data
  – The FAIR data principles
    • Findable
    • Accessible
    • Interoperable
    • Reusable
• Follow the US Federal public access and open data directives
• Funding agency requirements
Data Management Plan Overview

1. Expected data types
2. Data formats and standards
3. Data storage and preservation of access
4. Data sharing and public access
5. Roles and responsibilities
6. Monitoring and reporting
DMP Consultations

• NAL will review DMP drafts (subject to capacity and priorities)
  – Send DMP draft and Project Summary draft to agref@usda.gov
  – We will provide review and propose improvements for DMPs
  – Requirements: at least 5 business days

III. Conducting Research
Domain Specific Data Applications


NAL provides an integrated portfolio of data products that support ARS and external agricultural research communities

Federal Life Cycle Assessment (LCA) Commons
A workbench for arthropod genome communities to curate, visualize and share data.

i5K Workspace

FoodData Central
Nutrient profile data and links to related agricultural and experimental research.

Geodata @ NAL
A catalog of location-based agricultural research data, imagery, and more.
NAL Collections

• Houses one of the world’s largest collections devoted to agriculture and its related sciences, with both physical and digital collections

• One of five U.S. National Libraries

• Congressionally designated depository for U.S. Government documents

• Departmental library for USDA
Research from NAL Collections

About the Farm, Field and Fireside Collection
Together with the introduction of rural mail delivery, the telephone, and the automobile, farm newspapers played a key role in the modernization of American agriculture. Historically significant U.S. farm weeklies and daily newspapers titles document a time of transition in American farm life.

About the tool

Introduction
Scope
About microlepidoptera
Specimen preparation
Using the key
Authors
Acknowledgements
References
Copyright, citation, disclaimers

About microlepidoptera
"Microlepidoptera" informally refers to approximately half of the Lepidoptera. These "microleps" have larvae that feed within their host plant, rather than on its surface. This fact makes microlepidoptera important for plant inspection and protection because concealed larvae are hard to eliminate.

In this tool, we focus on two superfamilies, the Scopariae (Gelechiidae) and the Leucinodes (Pyrloidea, Crambidae). These constitute the largest radiations of microleps with a disproportionately great number of economically important species. The few other Solanaceae–specialist microleps in other families are not covered. These...
Special Collections
https://specialcollections.nal.usda.gov

Collections include the:
• records and archives of organizations,
• personal papers of individuals,
• rare books, correspondence, objects, photographs, posters, films, and other unique materials
Special Collections Research
IV. Writing and Publishing
Record Exports and Citation

- Several NAL Databases include record export in common formats
Copyright and Citation


Citation Examples


Sapp, Roy. *U. S. Department of Agriculture, 12th and 14th Streets, Independence Avenue and C Street as Taken from Top of Washington Monument.* Photograph, circa 1950. USDA History Collection. Special Collections, National Agricultural Library.


**Hint:** Scientific names (genus, species, and subspecies) of plants and animals are usually set in italics. The genus name is capitalized and the species name is in lower case. Plant variety names are placed in quotation marks, e.g., “Red Delicious” apple.
V. Dissemination and Preservation
Disseminating and Preserving Research

- **PubAg**
  - Public access to USDA funded research publications

- **Ag Data Commons**
  - Public access to research data
PubAg Submissions (USDA-funded but outside of USDA)

- Send an accepted manuscript to NAL-PubAg-Curator @usda.gov
- Include a DOI with submission
What is an Accepted Manuscript?

- The version of the article that has been accepted for publication and includes all modifications resulting from the peer-review process, which is also called the final peer-reviewed accepted manuscript.

- It is the same content as the published version but does not include the publisher's copyediting, stylistic or formatting edits that will constitute the final "version of record" that appears in a scholarly journal.
What is a Final Published Article?

• The final published article, including copyediting, stylistic edits, and formatting changes per a specific journal publisher. It is considered the "version of record" (VoR) because of potential post-publication updates such as errata, retractions, or other changes.

• When a publisher provides free access to the VoR, this is considered the "best available version," and PubAg will link to it.
Ag Data Commons

https://data.nal.usda.gov

- Catalog & data repository for USDA-funded data
- Services to create, curate, and enable access to machine-readable scientific metadata (FAIR data)
Ag Data Commons Data Submission Manual

This submission manual provides practical information for contributors to the Ag Data Commons data repository and catalog. For further help with using the Ag Data Commons watch the Ag Data Commons User Instruction Series on the National Agricultural Library's YouTube channel. These video tutorials review much of the submission manual content. While videos may look different from the current site, the core function remains similar. We recommend searching the online submission form using a Control/F (PC) or Command/F (Mac) function to find fields listed in the submission manual.

Choose from the following sections to go straight to that information:

- Quick start guide
- Register for an Ag Data Commons account
- Organize data
- Create a dataset
- Add the data
- Embargo
- Viewing unpublished datasets
Ag Data Commons Dataset

- Collection / parent dataset
- DOI
- Suggested dataset citation
- Published articles & manuscripts
- Related datasets and previous versions
- Data files
- Descriptive metadata
- Methods article
- Author ORCID
- Source data
Contact NAL With Your Questions

Use our newly launched chat service for a quick response!

Chat with us or email at:

https://www.nal.usda.gov/ask-question