Basic Methods of Scientific Research

LITERATURE SEARCH

Introduction

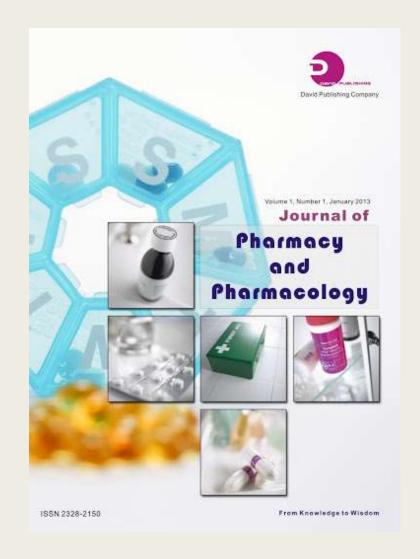
- "There are two kinds of knowledge: either we have the necessary information, or we know where to find it." (Samuel Johnson)
- Ca. 60 million pages of literature sources are published per year:
 - 40-50 thousand scientific journals
 - 200 thousand books

TYPES OF PUBLICATIONS

Types of publications 1. Journals

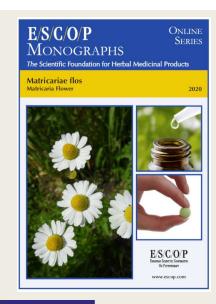
- Regularly (weekly, monthly, quarterly)
 up-to-date information
- Not publishing comprehensive results

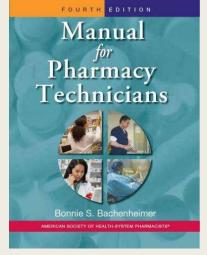
 research outcomes can be
 published already after finishing
 certain stages of a research project
- Each research field specific journal for each field

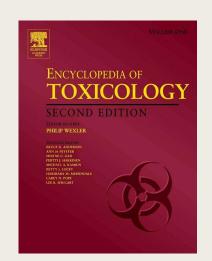


Types of publications 2. Books

- Monograph: comprehensive summary of a single topic; reports new research results, too
- Textbook: educational purposes
- Manual: systematic review, summary of a field
 - based on scientific evidence
- Collection: a joint volume of works somehow related to each other
- Encyclopedia: systematic arrangement of knowledge in a given field, defining concepts together with their interrelations

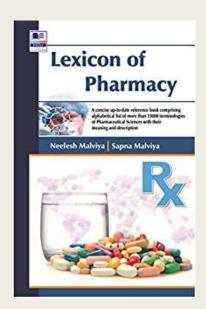


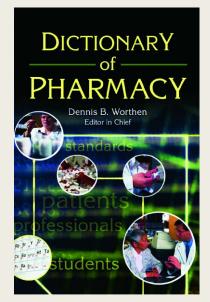




Types of publications 2. Books

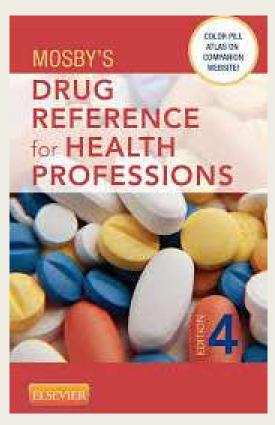
- Lexicon: alphabetic collection of short definitions of concepts
- Dictionary: alphabetic list of words, expressions in a given language or specific field:
 - Explanations in the same language
 - Definitions in another language (bi- and multilingual dictionary)
- Annuals: collections summarizing the new results of a scientific field yearly
 - E.g. Annual Reviews of Biochemistry, Annals of Botany,
 Jahresberichte ...
- Congress publications
 - often as a special issue of a journal

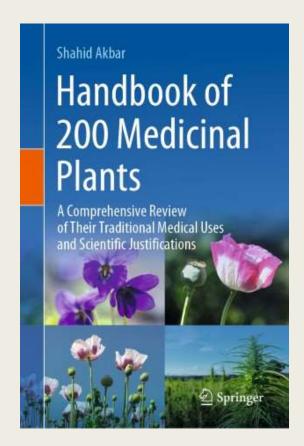




Types of publications 2. Books

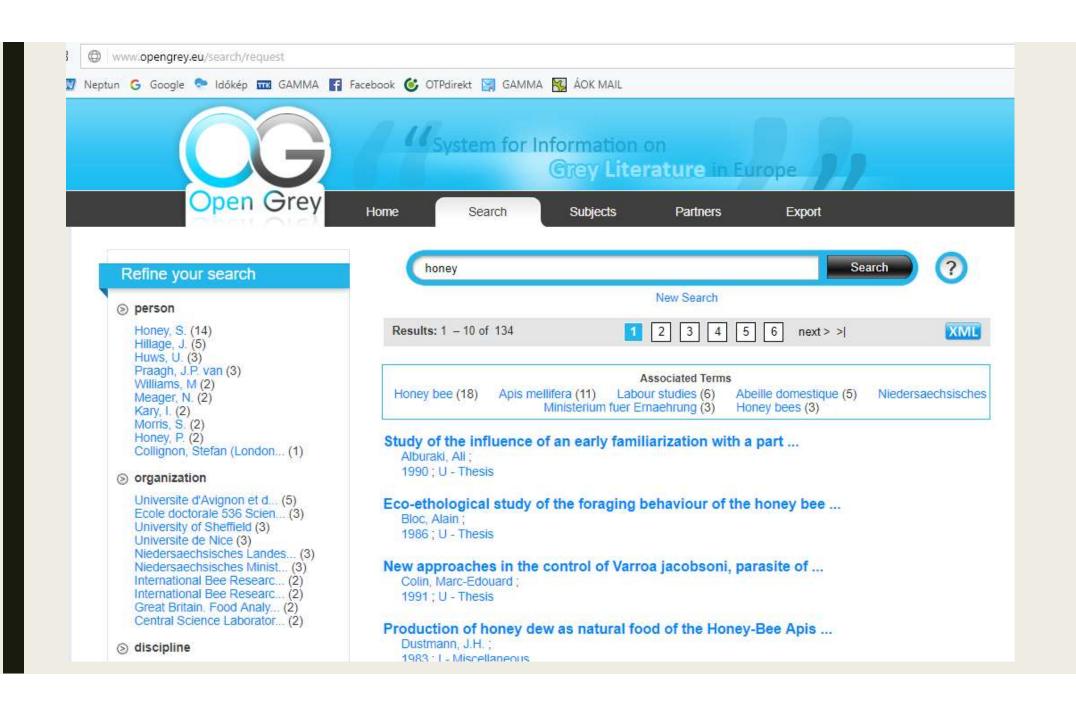
- Well-known publishers guarantee:
 - Springer
 - Wiley
 - Academic Press
 - Elsevier
 - Birkhäuser Verlag





Types of publications 3. "Grey literature"

- Not marketed, not sold in bookstores:
 - Research reports
 - Theses
 - Doctoral dissertations
 - Available in libraries
 - EU: SIGLE: System for Information on Grey Literature in Europe <u>www.opengrey.eu</u>
 - Google Scholar



PROCESS OF LITERATURE SEARCH

Process of literature search Where and how?

- Library: journals, books
- Orientation: catalogues, manuals, indexes
- Our own system about publications interesting for us:
 - Author, title, place and time of publishing
 - Paper-based
 - Computer database (easier to store and access)
 - Can be used well when writing our own paper

Process of literature search Detailed, comprehensive literature search

■ WHEN?

- Selecting a research topic
- Writing a grant application (for funding of research)
- Obtaining a scientific degree
- Preparing for a university lecture

■ WHAT?

- monographs
- Textbooks, encyclopedias, dictionaries
- Review articles (Advances in..., Annual Reviews of..., Progress in..., Trends in)
- Collection of specific terms → list (mother tongue, foreign language)
- References of books, review papers \rightarrow further research papers

Process of literature search Catalogues

- Printed catalogue
 - alphabetical (author's name, book titles)
 - According to specific fields
- online catalogue (OPAC: Online Public Access Catalogue)
 - Can be accessed from a distance
 - Can be searched according to multiple aspects:
 - author
 - full title
 - a word in the title
 - key words

Process of literature search Online bibliographical databases

- Databases: collection of records
- Each record is a journal paper, book, conference presentation
- records: basic data = fields (title, author, year of publication)
- Search for: words, expressions, names
- Records that meet search criteria on screen, can be printed, saved

Process of literature search Online bibliographical databases

- Analytical Abstracts
- Biological Abstracts
- Chemical Abstracts
- EMBASE (medicine)
- Medline
- Science Direct
- Scopus



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 - An announcements-only e-mail list that notifies subscribers of **major system problems** with PubMed, the MeSH Database and the NLM Catalog (Monday through Friday, 8:30am to 5:00pm ET).

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www.ncbi.nlm.nih.gov/nlmcatalog/journals

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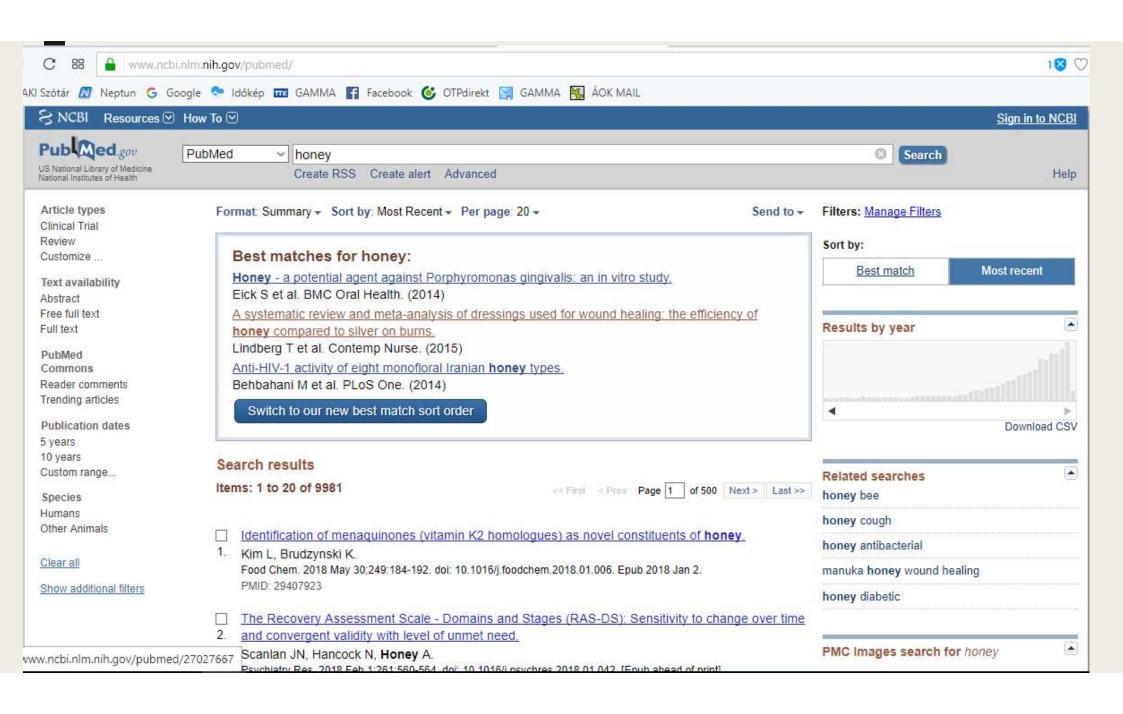
Haploinsufficiency leads to neurodegeneration in C9ORF72 ALS/FTD human induced motor neurons. Nat Med. 2018.

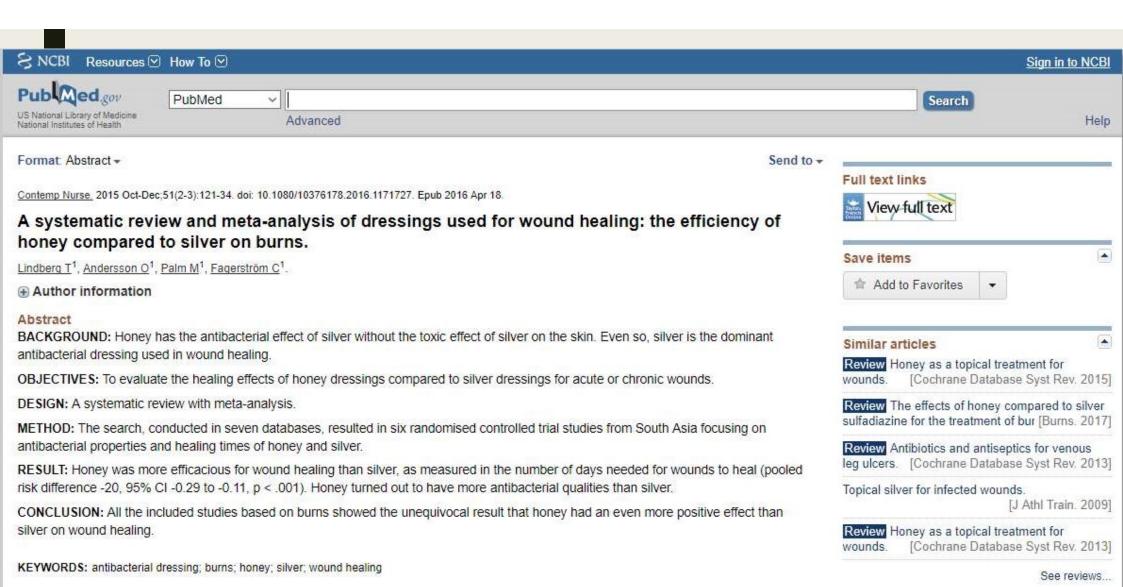
Eradication of spontaneous malignancy by local immunotherapy.

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Search words:

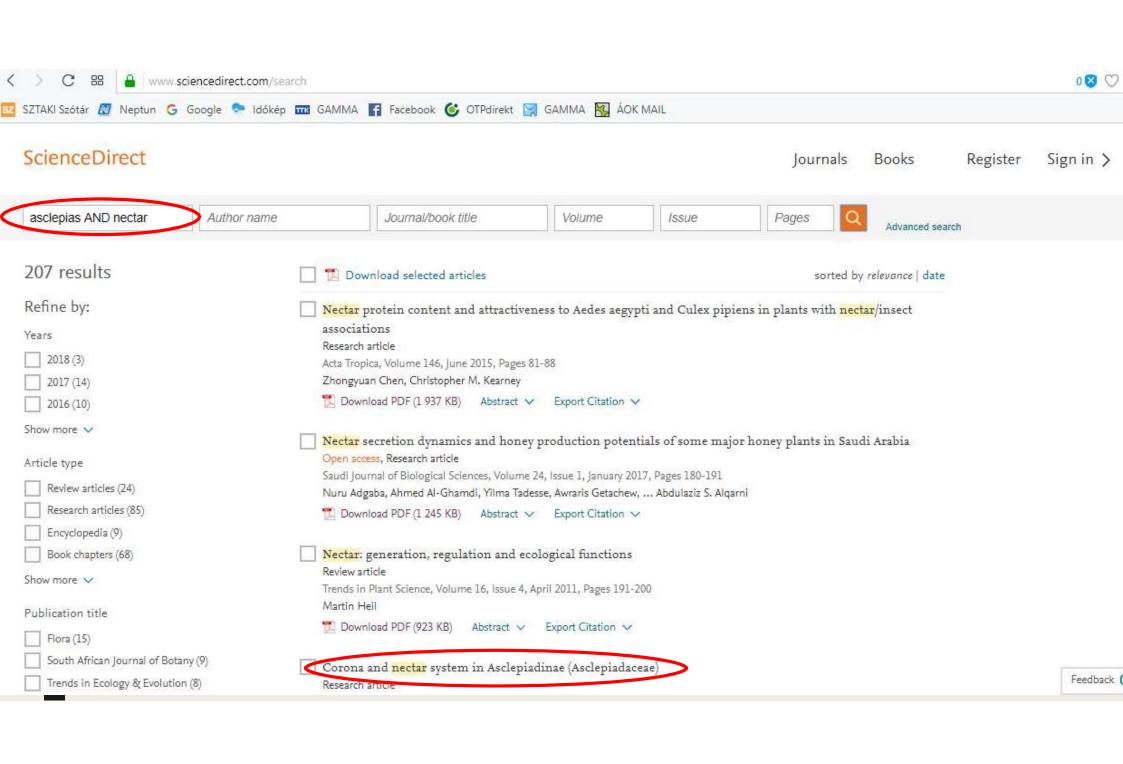
AND: records with both search words appear

OR: when the same thing / field can be found under multiple names

NOT: we want to exclude a word from our search

chunks: using only the stem of a word

Search word occurring only in certain fields (e.g. title, authors)



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Feedback C

Journal of Ethnopharmacology (114)

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Research article

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Contents lists available at ScienceDirect

Phytochemistry

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Review

Coping with toxic plant compounds - The insect's perspective on iridoid glycosides and cardenolides

Susanne Dobler*, Georg Petschenka, Helga Pankoke1

Biocenter Grindel, Hamburg University, Martin-Luther-King Platz 3, 20146 Hamburg, Germany

ARTICLE INFO

Available online 26 May 2011

Keywords: Iridoid glycosides Cardenolides Insect metabolism Sequestration Exclusion Excretion Na*/K*-ATPase Target site insensitivity

ABSTRACT

Specializing on host plants with toxic secondary compounds enforces specific adaptation in insect herbivores. In this review, we focus on two compound classes, iridoid glycosides and cardenolides, which can be found in the food plants of a large number of insect species that display various degrees of adaptation to them. These secondary compounds have very different modes of action: Iridoid glycosides are usually activated in the gut of the herbivores by B-glucosidases that may either stem from the food plant or be present in the gut as standard digestive enzymes. Upon cleaving, the unstable aglycone is released that unspecifically acts by crosslinking proteins and inhibiting enzymes. Cardenolides, on the other hand, are highly specific inhibitors of an essential ion carrier, the sodium pump. In insects exposed to both kinds of toxins, carriers either enabling the safe storage of the compounds away from the activating enzymes or excluding the toxins from sensitive tissues, play an important role that deserves further analysis. To avoid toxicity of iridoid glycosides, repression of activating enzymes emerges as a possible alternative strategy. Cardenolides, on the other hand, may lose their toxicity if their target site is modified and this strategy has evolved multiple times independently in cardenolide-adapted insects.

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Sifting the evidence, The Guardian, 14 September 2016

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Antidepressant treatment for postnatal depression

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Clinical Answers -

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Version published: 13 February 2021 Version history https://doi.org/10.1002/14651858.CD013560.pub2 ☑

Collapse all Expand all

Abstract

Available in English | Español

Background

Depression is one of the most common morbidities of the postnatal period. It has been associated with adverse outcomes for women, children, the wider family and society as a whole. Treatment is with psychosocial interventions or antidepressant medication, or both. The aim of this review is to evaluate the effectiveness of different antidepressants and to compare their effectiveness with placebo, treatment as usual or other forms of treatment. This is an update of a review last published in 2014.

Objectives



Plain language summary

Available in English Español

Antidepressant treatment for postnatal depression

Review question

In this Cochrane Review, we wanted to find out how well antidepressants work for treating women with postnatal depression.

Why this is important

Postnatal depression is depression that starts within 12 months of a woman having a baby. Many women are affected. Postnatal depression can have serious short- and long-term effects on the mother, the baby, and the family as a whole.

There are several ways to treat postnatal depression. These include antidepressant medication, psychological therapy, support or counselling. The type of treatment offered depends on how severe the depression is, other illnesses and the woman's choice. In general, women who are pregnant or breastfeeding are often anxious about the potential unwanted effects of antidepressant medicines on their baby.

It is important to know whether antidepressants could be an effective and acceptable treatment for women with postnatal depression.

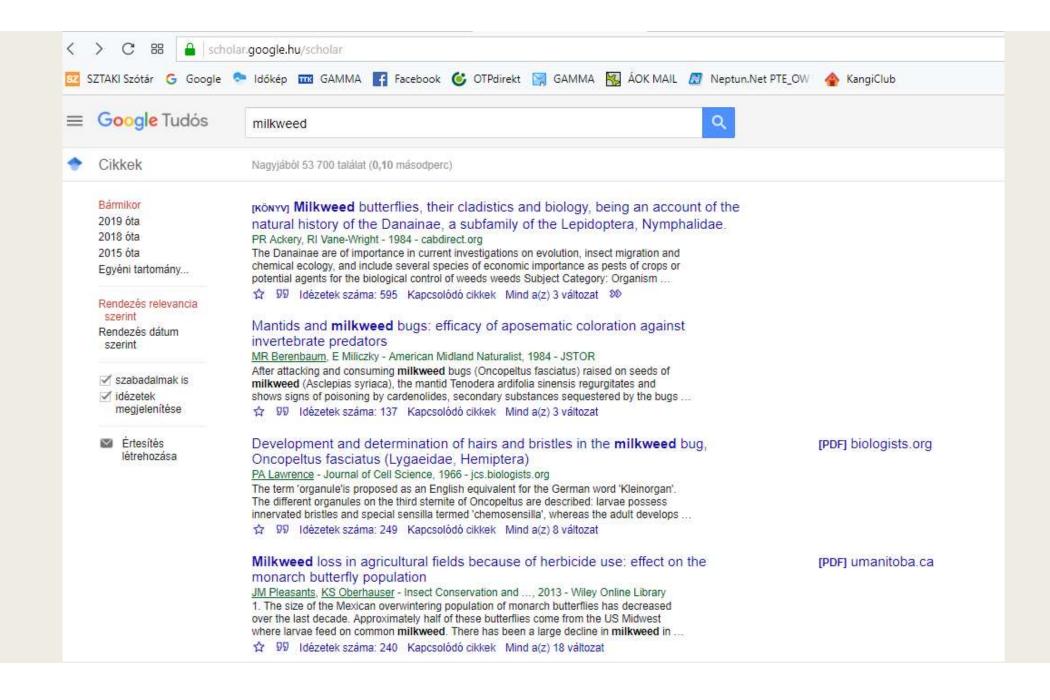
What we did

In May 2020, we searched for studies of antidepressants for women with postnatal depression. We looked for randomised controlled trials, in which treatments were given to study participants at random. These studies give the most reliable evidence.

We included 11 studies involving 1016 women. The studies compared antidepressants with placebo (dummy pill), treatment as usual (watch and wait, regular visits with a care co-ordinator), psychological interventions (therapy), psychosocial interventions (peer support or counselling), any other other medicines or another type of antidepressant; and complementary medicine (food supplements).

Eight of the studies were conducted in English-speaking, high-income countries. The length of treatment ranged from four to 24





Community-wide impacts of herbivore-induced plant responses in **milkweed** (Asclepias syriaca)

PA Van Zandt, AA Agrawal - Ecology, 2004 - Wiley Online Library

The effects of early-season herbivory and subsequent induced plant responses have the potential to affect the diversity of herbivorous insect communities. We investigated the seasonal development of the herbivore fauna on common milkweed (Asclepias syriaca) to ...

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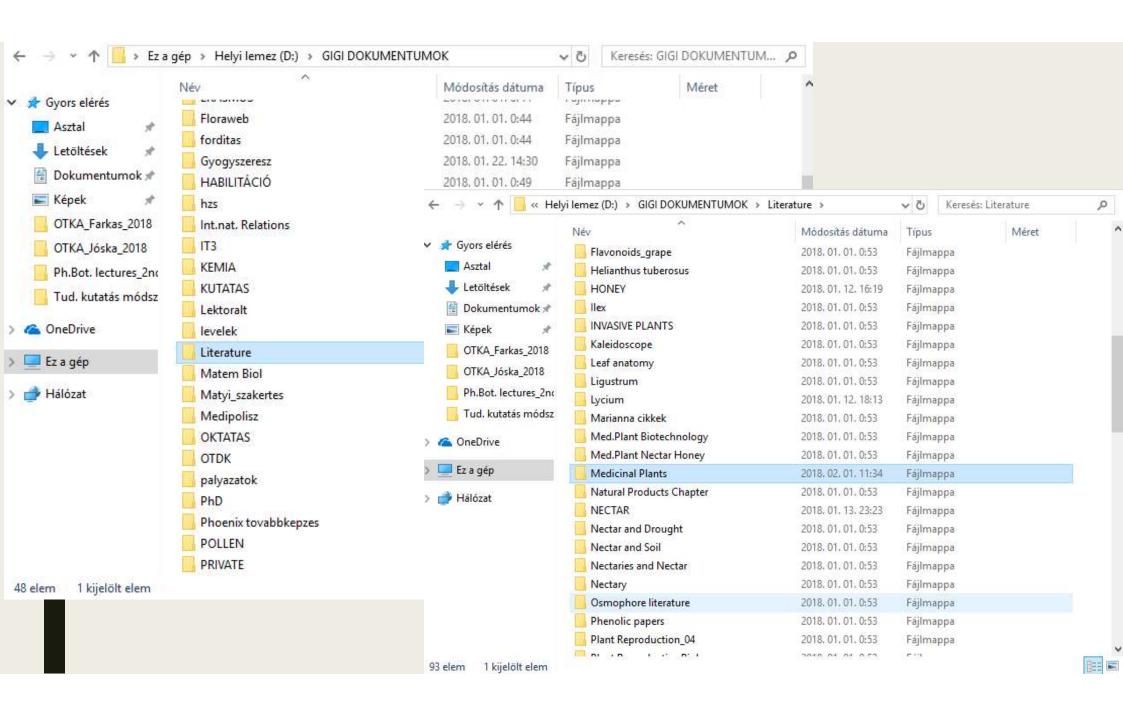
Ecology, 85(9), 2004, pp. 2616-2629 © 2004 by the Ecological Society of America

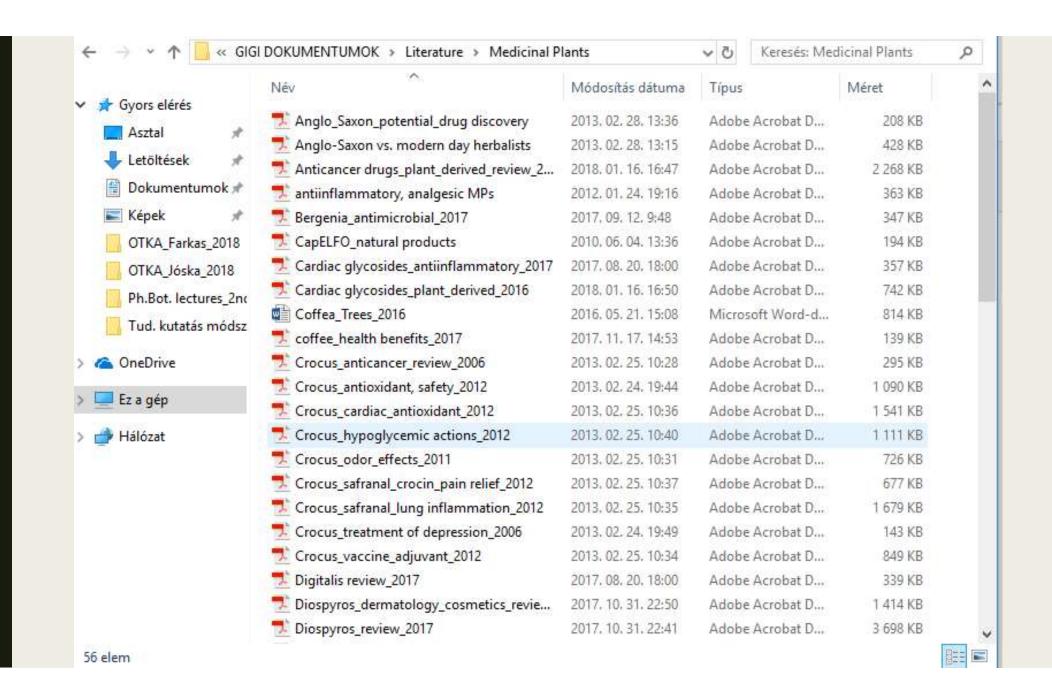
COMMUNITY-WIDE IMPACTS OF HERBIVORE-INDUCED PLANT RESPONSES IN MILKWEED (ASCLEPIAS SYRIACA)

PETER A. VAN ZANDTI AND ANURAG A. AGRAWAL

Department of Botany, University of Toronto, 25 Willcocks Street, Toronto, Ontario, Canada M5S 3B2

Abstract. The effects of early-season herbivory and subsequent induced plant responses have the potential to affect the diversity of herbivorous insect communities. We investigated the seasonal development of the herbivore fauna on common milkweed (Asclepias syriaca) to understand the effect of early-season herbivory by different species on insect growth. natural colonization, and community composition. First, we showed that damage by an early-season stem-feeding weevil (Rhyssomatus lineaticollis) reduced growth of monarch larvae (Danaus plexippus) and leaf beetle larvae (Labidomera clivicollis), suggesting that plant quality is reduced by weevil damage. To better understand the potential for initial herbivore damage to affect subsequent colonization by herbivores in the field, we compared undamaged controls to plants experimentally damaged with one of three herbivores; weevils. monarchs, or leaf beetles. We counted seven species of naturally colonizing herbivores on all plants for the next two months to assess colonization, damage, and insect community richness. Our results showed that initial herbivory by different species altered host plant use by herbivores in two years of experiments. Similarly, induced resistance and susceptibility occurred in both years, but due to different initial damaging species on individual plants. Treatment effects also scaled up to alter herbivore community richness. Initial treatments varied in their persistence through the season. For example, in 2001, the influence of initial monarch damage dissipated due to subsequent damage by colonizing herbivores, but the impacts of initial weevil treatment were unaffected. This result suggests that, although induced responses to weevil feeding persisted through the season, monarch herbivory was more likely to affect the herbivore community via a cascade of indirect effects. In 2002, plant and insect responses were more specific, depending on the identity of both initial and colonizing herbivore species. Despite year-to-year variation, considerable consistency in many responses to our treatments indicates that the identity of the initially colonizing herbivore can affect subsequent plant use and community structure. Given the preponderance of influential early-season herbivores, the effects of induced plant responses





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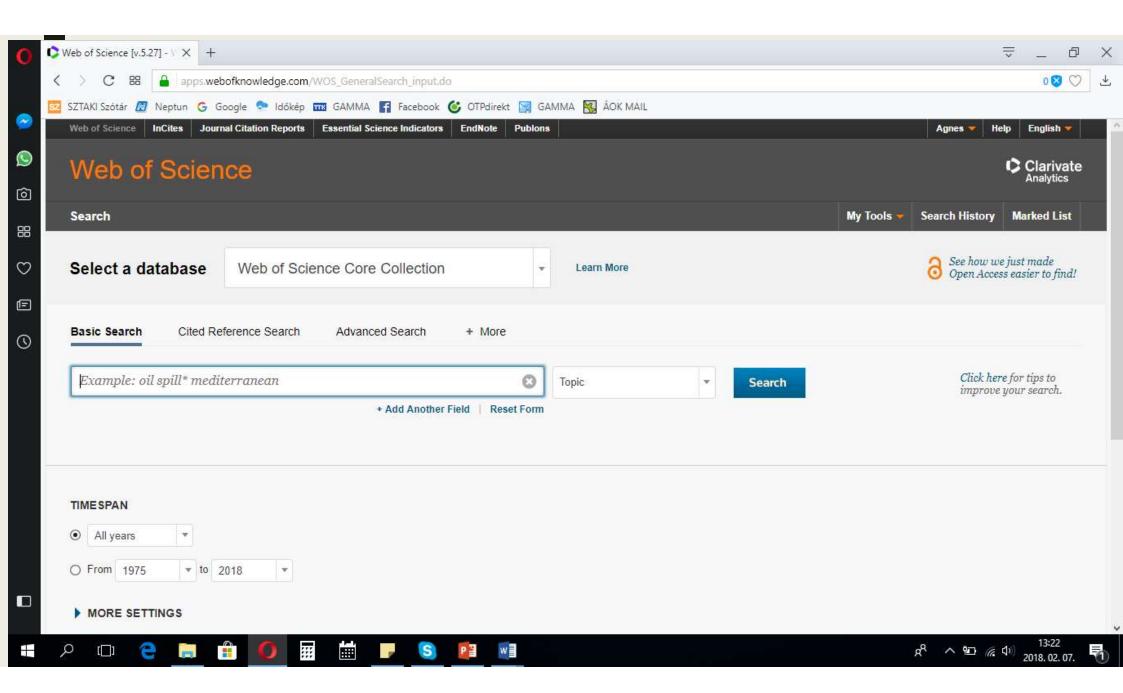
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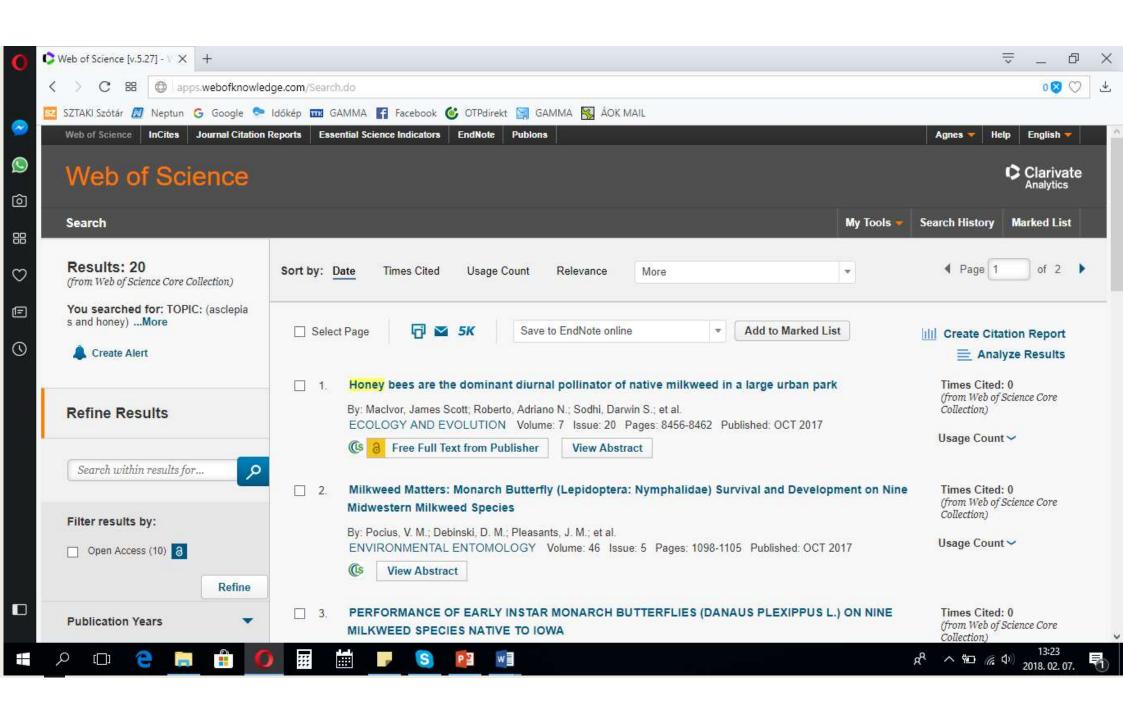
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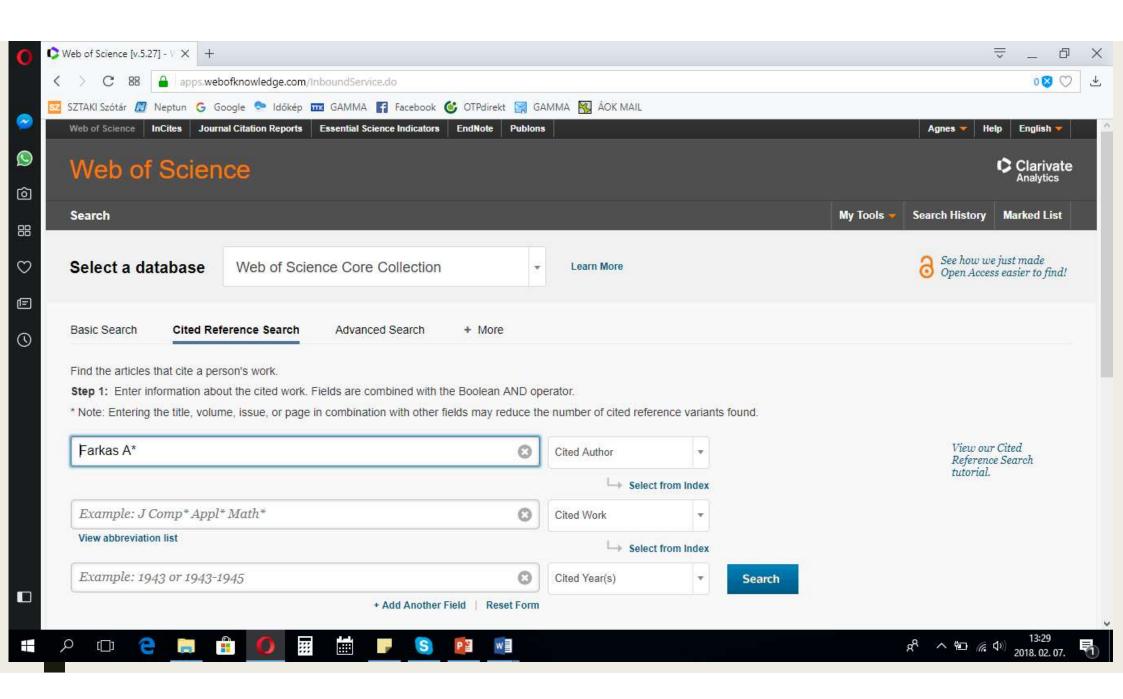
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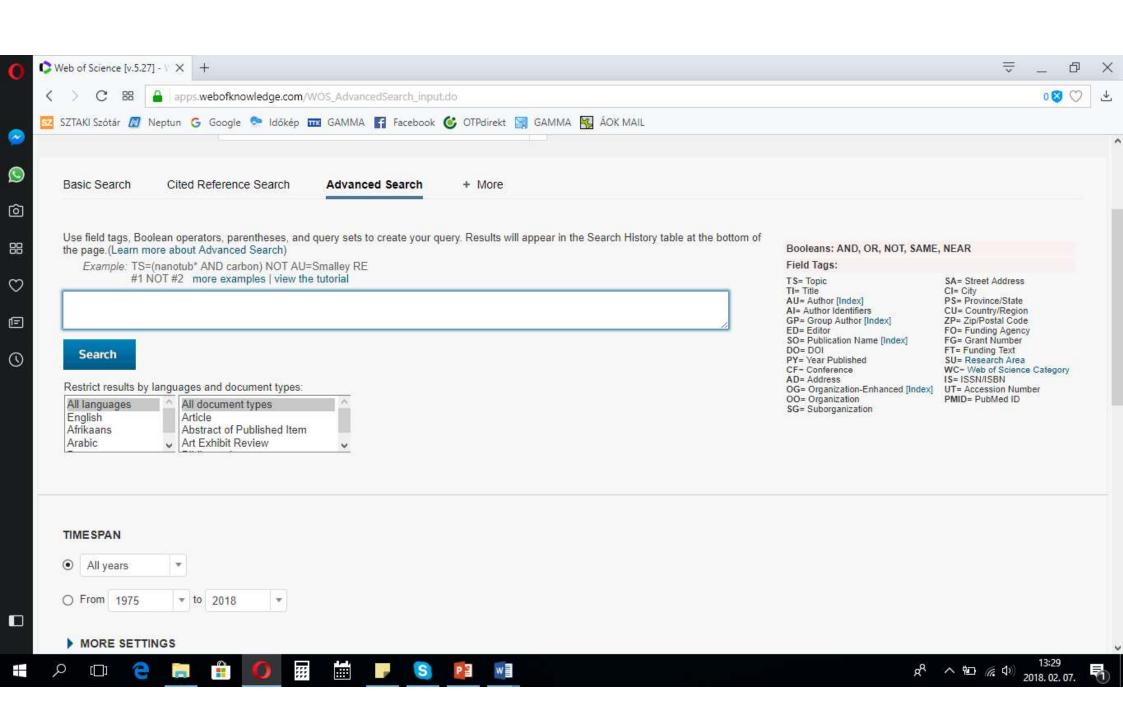
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