

# CREATE AN ON-LINE WALNUT RESEARCH INDEX WITH LINKS TO PDF FILES OF THE RESEARCH REPORTS

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## ABSTRACT

Walnut research reports, printed annually since 1972, are housed with the Walnut Marketing Board (WMB) Research Director, WMB Office, and the UC Cooperative Extension Specialist. A complete index of the reports does not currently exist. The 1972 through 1997 index is a MS Word document which is cumbersome to maintain. A secure and easily updated on-line index linking to a pdf file of each report will allow researchers to quickly access research reports of interest from over 30 years of walnut research.

## OBJECTIVES

- Create a database of walnut research from 1971 through 2006, listing: the project title; project leader; report year; and page number.
- Create a web interface maintaining the current index's structure and a simple search for specific words, year, project leader, etc. which links to pdf files of the ~ 1,300 reports.

## PROCEDURES

- **Clean up the current MS Word index listing of 909 reports (1971 – 1997):**
  - Delete extraneous information; confirm section associations, etc.
- **Create a database:**
  - Set up, in Excel, database fields using a structure similar to the current index's table of contents
  - Export MS Word data to Excel, populating the database with project title, project leader, report year, and page number
  - Add data for an additional ~425 reports (1998 – 2006)
- **Develop an effective user interface:**
  - Design web interface so that it will display a listing of reports with the information in sections and sub-sections similar to those in the current table of contents, includes a simple search, and links to pdf files of individual reports.
- **Program the background functionality for search and retrieval**
- **Create pdf files for each report (~1,300)**
  - Prepare documents for scanning.
  - Send to vendor for scanning
  - Break down annual pdfs in to separate file for each report and save with appropriate filename

- **Test, verify, and revise:**
  - Include usability testing before database is completely populated to confirm that structure is sound and user friendly.
  - When complete, verify that information is accurate.
  - Revise, as needed.
- **Bring on-line:**
  - Establish a link to the database interface.
  - Announce existence and password to appropriate audience
- **Update annually**

## RESULTS

All steps listed above were completed, the database was tested by members of the walnut research community, and brought online during September 2007. The url/web address is: <http://walnutresearch.ucdavis.edu>. The research reports can be accessed and/or searched in several different ways:

1. Linked from the main index page to reports by category: sorted by year and listed by title; author; year; page number.
2. Linked from the main index page to reports by sub-category: sorted by year and listed by title; author; year; page number.
3. Search for words in title: matching results are sorted by year and listed by title; author; year; page number.
4. Search by author's last name: matching results are sorted by year and listed by title; author; year; page number. Note that sorting by author's last name will give the best results as names were entered in many different ways throughout reporting history.
5. Search by year: matching results are sorted by year and listed by title; author; section; page number.

## DISCUSSION

A secure and easily updated on-line index linking to a pdf file of each report will allow researchers to quickly access research reports of interest from over 30 years of walnut research. Integrity of the system will be maintained by the University of California (UC) Fruit & Nut Research and Information Center, in the Department of Plant Sciences, at UC Davis. The programs, developed by Jerry Schmierer, and the pdf files are housed on a UC Agriculture and Natural Resources web server.

The following screen shots show the opening/main page and options 1 through 5, listed above.

**Walnut Research Reports**

Words in Title  Search

Author-last name  Search

Year --Select Year-- Search

**Cumulative Index 1971-2006**

Genetic Improvement | Rootstocks | Water Management | Development | Tree Growth and Development | Mite Pests | Bark, Fruit, and Foliage Diseases | Integrated Pest Management | Nematodes | Handling | Economics | Soil Management | Climate

- I. [Genetic Improvement](#)
  - A. [Cultivar Testing](#)
  - B. [Walnut Breeding](#)
  - C. [Biotechnology and Genomics](#)
- II. [Rootstocks](#)
  - A. [Waterlogging](#)
  - B. [Salinity](#)
  - C. [Effect on Cropping](#)
  - D. [Rootstock Testing](#)
  - E. [Propagation](#)

**Walnut Research Reports**

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Index Section: **Water Management**

Title	Author	Year	Page
<a href="#">Using Soil Moisture and Midday Stem Water Potential Monitoring Data to Manage a Water Table Impacted 'Chandler' Orchard. 92 WMB 1.</a>	Lampinen, Bruce, Janine Hasey, Sam Metcalf, and Claudia Negrón	2006	89
<a href="#">Assessing Irrigation-Related Problems in Hillside Orchards in Lake County.</a>	Lampinen, Bruce, Rachel Elkins, Steve D'Agostini, and Sam Metcalf	2006	93
<a href="#">Assessing Irrigation-Related Problems in Hillside Orchards in Lake County.</a>	Lampinen, Bruce, Rachel Elkins, Steve D'Agostini, and Sam Metcalf	2005	121
<a href="#">Irrigation Management as a Tool to Stabilize</a>	Lampinen, Bruce, Janine Hasey, Sam Metcalf,	2005	115
	Janine Hasey, Samuel Gamble	2004	137
		2004	113
		2003	113
	Reil, David Ramos,	2003	147

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Section : **Bark, Fruit, and Foliage Diseases**

Sub-section selected: **Deep Bark Canker**

Title	Author	Year	Page
<a href="#">Real-Time PCR Detection and Development of a Bioassay for the Deep Bark Canker Pathogen, <i>Brenneria Rubrifaciens</i>.</a>	McClellan, Ali E., Padma Sudarshana, and Daniel A. Kluepfel	2006	247
<a href="#">Development of a PCR-Based Method for the Detection of <i>Brenneria Rubrifaciens</i>: The Causal Agent of Deep Bark Canker of Walnut.</a>	McClellan, Ali E., Padma Sudarshana, and Daniel A. Kluepfel	2005	327
<a href="#">Use of a Polymerase Chain Reaction System (BIO-PCR) for Detection of <i>Erwinia Rubrifaciens</i> in Symptomless Tissues of Walnut Trees.</a>	Teviotdale, Beth L., et al	1997	377
<a href="#">Use of a Polymerase Chain Reaction System (BIO-PCR) for Detection of <i>Erwinia Rubrifaciens</i> in Symptomless Tissues of Walnut Trees.</a>	Teviotdale, Beth L., et al	1996	245
<a href="#">Use of a Polymerase Chain Reaction System (BIO-PCR) for Detection of <i>Erwinia Rubrifaciens</i> in Tissues of Walnut Trees.</a>	Teviotdale, Beth L., et al	1995	287
<a href="#">Development of a Polymerase Chain Reaction (PCR)</a>			

Walnut Proceedings search results by author - Windows Internet Explorer

http://walnutresearch.ucdavis.edu/author.asp

## Walnut Research Reports

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Search results for - Author: sibbett

Title	Author	Year	Page
<a href="#">Long-Term Effects of Rootstock on Yield and Quality Performance of Several Walnut Cultivars in Hedgerow Configuration</a>	Sibbett, G. Steven	2001	75
<a href="#">Long-Term Effects of Rootstock on Yield and Quality Performance of Several Walnut Cultivars in Hedgerow Configuration</a>	Sibbett, G. Steven	2000	129
<a href="#">Efficacy of Actigard for Control of Walnut Blight</a>	Sibbett, Steve	1999	457
<a href="#">Efficacy of Esteem in Control of 1st Generation Codling Moth in Walnut</a>	Sibbett, Steve	1999	455
<a href="#">Armillaria Root Rot: Role of Site Preparation and Rootstock Susceptibility on Survival of Replanted Walnut Trees - 1999</a>	Tevis		
<a href="#">Long-Term Effects of Rootstock on Yield and Quality Performance of Several Walnut Cultivars in Hedgerow Configuration</a>	Sibbett		
<a href="#">Armillaria Root Rot: Role of Site Preparation and Rootstock Susceptibility on Survival of Replanted Walnut Trees - 1998</a>	Tevis		
<a href="#">Effects of Various Copper Regimes on 1st Generation Codling Moth Control in Walnuts</a>	Sibbett		

Walnut Research Reports results from year search - Windows Internet Explorer

http://walnutresearch.ucdavis.edu/year\_results.asp

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Search results for - Year: 2006

Title	Author	Section	Page
<a href="#">Pistillate Flower Abortion and Ethylene Production in Walnut</a>	Johnson, H, J. Grant, and V. Polito	Flower and Fruit Development	101
<a href="#">Evaluation of Retain for Reducing Pistillate Flower Abortion and Increasing Yield in 'Serr' Walnuts</a>	Anderson, Kathy Kelly, Joe Grant, Janine Hasey, and Wilbur Reil	Flower and Fruit Development	109
<a href="#">Retain Applications on Tehama County 'Chandler' Walnuts</a>	Buchner, Richard P, Allan Fulton, Cyndi K. Gilles, and Kari Resch	Flower and Fruit Development	113
<a href="#">Comparison of Growth and Productivity of Pruned and Unpruned Young 'Howard' Walnut Trees as Impacted by Crop Load. 92 WMB 1</a>	Lampinen, Bruce, et al	Tree Growth and Development	127
<a href="#">Using Aerosol Pheromone "Puffers" for Area-wide Suppression of Codling Moth In Walnuts: Year Two and Demonstration of Aerially Applied</a>	Pickel, C., J. Grant, S. Welter, R. Buchner, and S. Goldman Smith	Insect and Mite Pests	137
		Insect and Mite Pests	155

Walnut Research Proceedings results from title search - Windows Internet Explorer

http://walnutresearch.ucdavis.edu/title\_results.asp

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Search results for - Words in Title: mite

Title	Author	Year	Page
<a href="#">Control of Twospotted Spider Mites, Tetranychus Urticae, in Walnuts - 2003</a>	Fouché, Benny, et al	2003	445
<a href="#">Spider Mite Control in Walnuts in 1997</a>	Hendricks, Lonnie C. and Simon Bautista	1997	433
<a href="#">Efficacy of Agri-Mek for Control of Spider Mites in Walnut</a>	Sibbett, G. Steven	1997	427
<a href="#">Spider Mite Control in Walnuts</a>	Hendricks, Lonnie C.	1996	185
<a href="#">2-Spotted Mites</a>	Brown, L.C. and C.S. Davis.	1971	10