Selected Books and References

Books

From the Sustainable Ag Network (www.sare.org):
- Managing Cover Crops Profitably.
- Building Soils for Better Crops.
- Steel in the Field: A Farmers Guide to Weed Management Tools.

From University of California Agriculture and Natural Resources (http://anrcatalog.ucdavis.edu/):
- IPM handbooks (alfalfa, apples, citrus, cole crops, lettuce, potatoes, rice, stone fruit, small grains, tomatoes, walnuts).

From Canadian Organic Growers (www.cog.ca):


References

Albrecht, W.A. and C. Walters. 1975. The Albrecht Papers. Kansas City, MO: Acres. A compilation of the published and unpublished research of a University of Missouri soil scientist who examined nutrient cycling and natural methods to maintain or improve crop nutrition through rotations and livestock grazing.

Baker, B.P., C.M. Benbrook, E. Groth, and K.L. Benbrook. 2002. Pesticide residues in conventional, IPM-grown and organic foods: Insights from three U.S. data sets. Food Additives and Contaminants 19(5):427-446. Data on residues in fruits & vegetables labeled as ‘organic,’ foods making other ecolabel claims such as ‘Integrated Pest Management,’ and foods with no market claims regarding practices were compared using data from government and independent testing organizations. Organically grown foods consistently had fewer residues than the other categories.
Comparison of specific residues on specific crops found residue concentrations in organic samples were consistently lower than in the other two categories, across all three data sets.

*Covers all insect pests of orchards in the Pacific Northwest. Each entry includes common name, scientific name, introduction, hosts, life stages, life history, damage, monitoring, biological control, and management. Illustrated with color photos for most pests and diagrams of life cycle. Contains a section on the key natural enemies, and degree day tables. Probably the best single source of information on insect pests of deciduous tree fruits.*

*This is one of the few publications that details organic dairy production, one that is long on practical experience. The majority is devoted to herd health considerations. Written before adoption of the NOP, it may not be current on some of the regulatory and certification issues.*

The American Society of Agronomy sponsored the first ever symposium on organic farming at a professional society meeting in 1981 as a follow up to the USDA Organic Farming report of 1980. The symposium papers were compiled in this publication, and featured leading researchers from land-grant universities and the USDA-ARS.

*From a Dutch report published in 1976: Describes various approaches to ecological agriculture, with a review of techniques, food quality, impact on the environment, yields, and research recommendations.*

*A practical handbook that describes mechanical weed management. Based on interviews of farmers, agricultural engineers, and university researchers. Describes in detail available equipment and its effective and profitable use while complying with erosion-prevention plans, residue conservation, and moisture loss.*

*Western SARE sponsored a major regional conference to highlight a decade of research and education on sustainable agriculture in the western states from the perspectives of leading growers and researchers, many from organic agriculture. The book captures the diversity of agriculture in the Western US and provides insights regarding key sustainability principles and practices that apply to organic farms.*


*Agriculture Canada has carried out a number of long-term cropping systems experiments in the Canadian prairies, mostly dealing with dryland production. These studies have focused on the effects of crop rotation on productivity, soil conditions, pests, economics, and energy use. They provide invaluable insight for the development of organic dryland production systems that will be sustainable in the long-term.*


*This publication is a well-crafted, beautiful, and technically and agronomically sound overview of biological agricultural systems management. While the information was primarily generated from research on agronomic cropping systems in Michigan, the principles are relevant to cropping systems in many regions. The information is meaningful to both farmers and agricultural professionals.*


*Results of a long-term farming systems trial with three treatments, including an organic system.*


*Probably the best single reference on the biophysical demands of wheat production, this handbook is easy to read and technically complete. It proposes the 4 A’s of wheat production – Absolute (genetic potential), Attainable (environment constraints), Affordable (economic constraints), and Actual (net after pests, diseases, etc.). In designing biologically based production systems such as organic farming, this book provides the key foundations for success.*


*Handbook presents information to evaluate soil fertility and determine amounts of nutrients to add. Contains useful information on nutrient credits from manures and legumes, and tips on how to reduce fertilizer costs by smarter management.*


*Publication is organized primarily by pest, with information on life cycle, reproduction, hosts, competition, and non-chemical control mechanisms. It applies to crops grown on the Canadian Prairies, similar to those grown in the Northern Plains of the U.S.*


Agricultural systems and natural ecosystems differ in how carbon and nitrogen are cycled. This study reports the net balances of carbon and nitrogen from a 15-year study in which three distinct maize/soybean agroecosystems are compared. Quantitative differences in net primary productivity and nitrogen balance ecosystems do not account for observed changes in soil carbon and nitrogen. Use of low carbon-to-nitrogen organic residues to maintain soil fertility, combined with greater temporal diversity in cropping sequences, is suggested to significantly increase retention of soil carbon and nitrogen, which has important implications for regional and global carbon and nitrogen budgets, sustained production, and environmental quality.


Farrell, Kenneth R. et al. 1992. Beyond Pesticides, Biological Approaches to Pest Management in California. Oakland: University of California Agriculture & Natural Resources. The University of California commissioned a Study Group to examine the history of pest management in the State's agriculture, both chemical and biological, and the potential to move towards greater reliance on biological control. Examines various pests, emerging tactics for biological control, and the constraints to their expanded use. Well-referenced and represents one of the more bold policy statements on pest management.


Glover, J., H. Hinman, J. Reganold, P. Andrews. 2002. A Cost of Production Analysis of Conventional vs. Integrated vs. Organic Apple Production Systems. Pullman: Washington State University Agricultural Research Center Publication XB1041. Seven years of economic data from a side-by-side comparison of conventional, organic, and integrated apple production are compiled in this research bulletin, starting with orchard establishment. The trial was located on a farm in the Yakima Valley in Washington State and was managed cooperatively among the researchers, growers, and consultants. The data allow a rare comparison of organic production to other management at this level of detail.

Grubinger, V.P. 1999. *Sustainable Vegetable Production from Start-Up to Market*. Ithaca: NAES. Successful vegetable farmers do much more than produce vegetables; they also manage money, people, and natural resources effectively. This publication can broaden the knowledge and guide the planning of those who grow vegetables or are considering beginning a vegetable production business. *Sustainable Vegetable Production from Start-Up to Market* introduces the full range of processes for moderate-scale vegetable production using ecological practices that minimize the need for synthetic inputs and maximize stewardship of resources. The book includes in-depth profiles of 32 vegetable producers. It provides practical information on such essential matters as selecting a farm site; planning and record keeping; marketing options; and systems for starting, planting, protecting, and harvesting crops.


Heaton, Shane. 2002. Organic Farming, Food Quality and Human Health: A Review of the Evidence. Bristol, UK: Soil Association. A report commissioned by the Soil Association to address conflicting research on the impact of organic food production on various food quality attributes. The author, a professional dietician from Australia, approached the project to learn whether the science supported using the principles with his clients. He evaluated over 90 comparison studies, set a number of criteria for valid comparisons across studies, and then analyzed the findings from this smaller group. Results were more consistent in favor of organic foods than in most previous comprehensive reviews. Yet the need for more rigorous experimental design at the outset is evident, as issues such as soil type, crop variety, and seasonal variation probably still confuse the results.


Howard, Sir Albert. 1947. *The Soil and Health*. N.Y: Devin-Adair. An early examination of the depletion of the soil organic matter by techniques that rely on soluble salt fertilizers, contrasted with an examination of sustainable production carried out over centuries that rely on composted organic matter as the main soil amendment.


A University of Wisconsin soil scientist examined nutrient cycling and sustainable agriculture in China.


Proceedings of the sixth international conference on organic agriculture sponsored by IFOAM.


Controlled research demonstrated that organically managed fields had greater diversity of both species and more organisms per unit of soil.


AERO conducted a series of case studies of dryland cereal farms across the Northwest where the growers were using more complex rotations that generally included a legume phase for soil improvement. Each case study described the general rotation along with supporting practices for pest management, moisture conservation, and marketing. The study presents the gross margin budgets (variable costs and gross income) for each farm.


Research on the efficacy of various microbiological inoculants, humic acid derivatives, and other amendments generally not explored in replicated field trials.

Organic Farming Compliance Handbook

Includes four case studies of organic farms and is believed to be the first serious examination of organic agriculture by the National Academy of Sciences. Organic farming was found to be profitable and protective of the environment. Research recommendations.

An early study that describes the historic approaches to organic farming with an examination of the relative profitability and environmental impacts of the two different approaches, with a conclusion about the barriers to adoption of organic farming methods.

A practical handbook that describes organic fertility methods, with useful tables that have data on the nutrient content of various fertilizers used by organic farmers.


Addresses an important gap in the biological control literature by providing the first comprehensive summary of recent findings on habitat manipulation to control pests. Chapters cover habitat modification in such areas as fields, orchards, or vineyards, and along or near the perimeters of fields, including hedges or other uncultivated areas. Generalist and specialist natural enemies are described in full, as are theoretical and practical issues. Experimental designs for studying enhancement include a modeling study that explores how the dispersal of natural enemies interacts with the positioning of refuges.


The long-term field experiments at the Pendleton, Oregon Research Center are the longest running trials in the Pacific Northwest. They have continuously monitored the impacts of various tillage, residue management, and fertility treatments since the 1930s. This bulletin summarizes the key findings, which provide insight to organic matter dynamics, soil quality, and productivity in a semi-arid wheat cropping system. The principles illustrated in this study are crucial for developing organic dryland cereal production in the region.


Biodynamic farming practices and systems show promise in mitigating some of the detrimental effects of chemical-dependent, conventional agriculture on the environment. The physical, biological, and chemical soil properties and economic profitability of adjacent, commercial biodynamic and conventional farms (16 total) in New Zealand were compared. The
biodynamic farms in the study had better soil quality than the neighboring conventional farms and were just as financially viable on a per hectare basis.


Santer, Lewis, ed. 1995. *BIOS for Almonds, A Practical Guide to Biologically Integrated Orchard Systems Management*. Davis, CA: Community Alliance with Family Farmers Foundation. *The BIOS (Biologically Integrated Orchard Systems) projects in California were very successful in eliciting grower innovation and adoption of more sustainable practices. This publication captures the learning from the BIOS efforts in almonds, but provides an excellent template for thinking about the system in any crop. Organized by the growing season, starting after harvest one year and ending at harvest the next. Covers many practices that can be used to increase the biological function and self-regulation of a perennial cropping system.*


Savory, Allan. 1988. *Holistic Resource Management*. Covelo, CA: Island Press. *A systems approach to managing natural resources. Most of the applications have been to animal grazing systems, but the approach can be used to address a wide range of resources and ecosystems.*

Shirley, Christopher, Greg Bowman, Craig Cramer, et al. 1998. *Managing Cover Crops Profitably*. Sustainable Agriculture Network. www.sare.org/handbook/mccp2/index.htm *Detailed charts of cover crop characteristics and management, adaptation maps and essays on soil fertility, crop rotations, pest management and cover crop selection are followed by comprehensive chapters on 18 of the most commonly used and widely adapted cover crops for the continental United States.*


Smolik, James D., ed. 1993. *Agronomic, Economic, and Ecological Relationships in Alternative (Organic), Conventional, and Reduced-Till Farming Systems (Bulletin B718)*. Brookings: South Dakota State University. *Summarizes one a comprehensive systems research trial that includes an organic farming system. Conducted on the western edge of the Corn Belt, the study found the organic systems to*
perform the best over the wide number of parameters studied, including profitability, energy use, and environmental protection.


Swezey, Sean L., Paul Vossen, Janet Caprile and Walt Bentley. 2000. Organic Apple Production Manual. Oakland: University of California Agriculture & Natural Resources Pub. #3403. This is the first university manual on organic apple production, aimed at conditions in California. It is especially useful for harvest, post-harvest, marketing and economics.


USDA. 1980. Report and recommendations on organic farming. Washington: USDA. The first official report on organic farming published by the USDA, after studies showed the potential of organic farms to use less energy. The study team consisted of leading USDA and university scientists from across the country, who conducted case studies, surveys and interviews, reviewed the published literature, and visited organic farms in Europe and Japan. The findings suggested that organic farming was scientifically valid, economically viable, and a modern form of agriculture.


This article published 2005

Organic Farming Compliance Handbook: A Resource Guide for Western Region Agricultural Professionals was developed with funding from the Western Region USDA SARE program. Online version of the resource guide available at http://www.sarep.ucdavis.edu/organic/complianceguide/