

Risk Management Guide for Organic Producers

EDITED BY KRISTINE M. MONCADA AND CRAIG C. SHEAFFER



BRUCE FRITZ/ARS

College of Food, Agricultural
and Natural Resource Sciences
UNIVERSITY OF MINNESOTA



Southwest Research
and Outreach Center
Lamberton, MN



Minnesota Agricultural
Experiment Station
UNIVERSITY OF MINNESOTA
Driven to Discover™

Risk Management Guide for Organic Producers

EDITORS

Kristine M. Moncada
Craig C. Sheaffer

AUTHORS

Mary P. Brakke, Education Specialist,
Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN

Jeffrey A. Coulter, Assistant Professor,
Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN

Carmen M. Fernholz, Organic Agriculture Research Coordinator,
Southwest Research and Outreach Center, University of MN, Lamberton, MN

Jeffrey L. Gunsolus, Professor,
Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN

Sheri C. Huerd, Scientist,
Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN

John A. Lamb, Professor,
Department of Soil, Water, and Climate, University of Minnesota, St. Paul, MN

Kristine M. Moncada, Assistant Scientist,
Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN

Craig C. Sheaffer, Professor,
Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN

James B. Stordahl, Extension Educator,
University of Minnesota Extension – Polk County, McIntosh, MN

Jochum J. Wiersma, Associate Extension Professor,
Northwest Research and Outreach Center, University of Minnesota, Crookston, MN

Donald L. Wyse, Professor,
Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN

PUBLICATION DESIGN

Arlene West Communications | arlenekwest@gmail.com

Acknowledgments

We are greatly indebted to our learning group network of Minnesota organic producers. Without their perspectives and input on the concept and contents, this project would not have been possible. We would like to thank the field crews and researchers at the Southwest Research and Outreach Center, at the Southern Research and Outreach Center, and at the St. Paul campus for coordinating our organic field research. Participants in the development of our organic research grants and associated field research include Pauline Nickel, Don Wyse, Deborah Allen, Carmen Fernholz, Jim Riddle, Milt Haar, Matthew Harbur, Steve Quiring, Lee Klossner, LaMoine Nickel, Joshua Larson, Doug Swanson, Adria Fernandez, and Matthew Leavitt. We would also like to recognize the diligent work other organic researchers in the region, whose data helped support our conclusions. Elizabeth Wieland and Scott Schroeder provided many constructive comments during the editing of these chapters. The skills of Jane Grimsbo Jewett, Molly Werner, and Paul Brady were indispensable in the development of the publication's companion websites and interactive quizzes. Lastly, our gratitude goes to Arlene West for her extreme patience and excellent work on the manual layout and design.

This manual was funded by the USDA Risk Management Agency (RMA) through a Research Partnership Grant titled "Tools for Managing Pest and Environmental Risks to Organic Crops in the Upper Midwest". The RMA was created in 1996 to help farmers manage their business risks through effective, market-based risk management solutions. For more information about RMA programs and services in Minnesota, call the regional office in St. Paul at 651-290-3304 or visit their website (<http://www.rma.usda.gov/>).

Other research support for this project is through the "Beyond Corn and Soybean: Alternative Organic Crops for the Upper Midwest" grant from the USDA National Institute of Food and Agriculture (NIFA). For more information about NIFA and its programs, visit their website (<http://www.csrees.usda.gov/>) or call 202-720-4423.

DISCLAIMER

Reference to commercial products or trade names is made with the understanding that no discrimination is intended and that no endorsement is implied by the authors or the University of Minnesota.

AVAILABILITY

The University of Minnesota shall provide equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression.

Inquiries regarding compliance may be directed to the Director, Office of Equal Opportunity and Affirmative Action, University of Minnesota, 274 McNamara Alumni Center, 200 Oak Street S.E., Minneapolis, MN 55455, (612) 624-9547, eoaa@umn.edu. Website at www.eoaa.umn.edu.

This publication/material is available in alternative formats upon request. Please contact: Kristine Moncada, Department of Agronomy and Plant Genetics
411 Borlaug Hall, 1991 Upper Buford Circle, St. Paul, MN 55108
612-626-4906 monc0003@umn.edu

Contents

Chapter 1	Introduction
Chapter 2	Rotation
Chapter 3	Soil Health
Chapter 4	Soil Fertility
Chapter 5	Weed Biology
Chapter 6	Weed Management
Chapter 7	Weed Profiles
Chapter 8	Transitioning
Chapter 9	Corn Production
Chapter 10	Soybean Production
Chapter 11	Small Grains
Chapter 12	Forages
Chapter 13	Winter Cover Crops
Chapter 14	Alternative Crops

CHAPTER 1

Introduction

ABOUT THIS PUBLICATION

Organic agriculture is an ecologically-based management system with the primary objective of optimizing the health of soil, animals, and people. The term “organic” is defined by federal law so that any crop or livestock labeled or sold as “organic” must be produced according to the national regulations in the National Organic Program (NOP) rules. Most states in the Upper Midwest have seen an increase in the number of organic farms from 2000 to 2008 (Table 1-1), evidence that organic agriculture in our region is still growing. Even with the poor economy, sales of organic food products have been increasing, although at a slower pace than earlier in this decade



Figure 1-1. Weeds are one of the biggest challenges for organic producers.

(Minnesota Department of Agriculture, 2010).

Why is it important to address risk management in organic

farming? We believe that organic agriculture intrinsically has greater risk than conventional agriculture because of the greater

Table 1-1. Number of certified farms in the Upper Midwest by state in 2000 and 2008. Adapted from the USDA-ERS, 2010.

	NUMBER OF CERTIFIED FARMS		
	2000	2008	% CHANGE
Illinois	95	162	+ 71
Indiana	73	180	+ 147
Iowa	332	677	+ 104
Michigan	143	256	+ 79
Minnesota	382	543	+ 42
North Dakota	170	152	- 11
South Dakota	91	103	+ 13
Wisconsin	432	1016	+ 135



An organic farmer from McLeod County says you can judge your overall level of risk in organic farming by gauging the following: 1) your management skill level, 2) your availability of labor resources, and 3) your equipment availability.

complexity in crop management issues such as fertility, weed control and pest control. Also, organic producers lack the many synthetic fertilizer and inputs for flexibility in management of risk. Consequently, there is a need for information directed to organic producers on managing risk. Risk is involved whenever producers make decisions where the outcome is uncertain. Decisions such as cropping sequence, variety selection, planting date, or planting rate are examples of decisions with elements of risk. Part of risk management is choosing to use resources to effectively achieve your objectives and to avoid loss, while still maximizing opportunities. There are many categories of risks affecting organic farmers. The types of risk include production, price, institutional, human, and financial. In this publication, we focus on production risks for crops that include cultural prac-

tices, variety selection, and management of pests and diseases.

A recent survey by the Minnesota Department of Agriculture identified the greatest production risks facing organic crop producers. Weed control is the leading concern, but numerous other factors including soil fertility contribute to the risks facing producers (Figure 1-2). As part of this project, we talked with organic

farmers about important production topics and their concerns matched up closely with those of the survey.

Farmers recognize that decision making relies not only on hard facts, but also on experiences. Thus, the knowledge and practices of current organic farmers are among the most important aspects we included in this project, alongside University-based re-

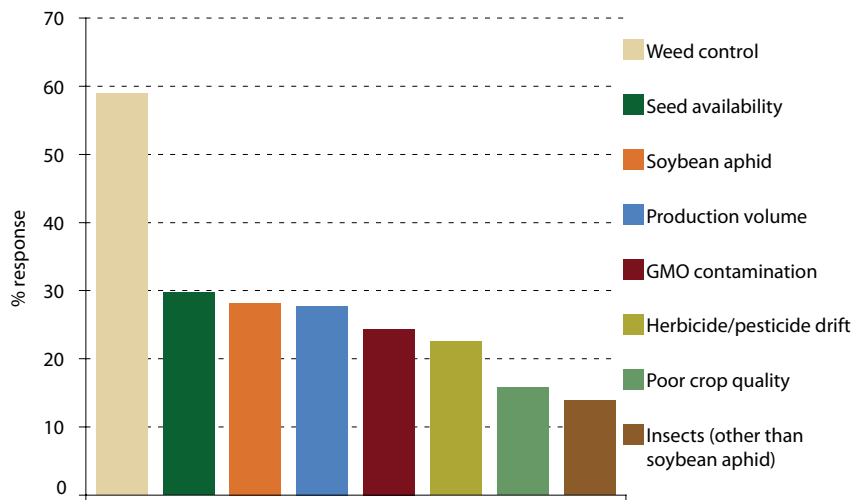


Figure 1-2. Production challenges for Minnesota organic producers. Adapted from the Minnesota Department of Agriculture, 2008.

search. This publication will help growers who are contemplating adopting organic production practices understand the risks that are associated with organic production and make choices that will minimize those risks. Additionally, this guide will also be beneficial to all organic producers, regardless of their level of experience.

HOW TO USE THIS PUBLICATION

This manual is intended as a guide for organic and transitioning producers in the Upper Midwest to lower risk in their operations. The fourteen chapters of this manual cover a wide range of production topics that are relevant to organic farmers. These include the importance of rotation, soil health and fertility, weeds, cover crops, and crop profiles. Each chapter can function as a stand-alone document if you are only interested in a certain topic, although the chapters were designed to be read consecutively.

At the end of each chapter are quizzes to gauge your risk in a given topic. Once you have answered all quiz questions and added up your score, your risk level in that area will be assessed with a “High”, “Medium”, or

“Low” risk rating. Please realize that risk assessment does not predict failure or success; it provides the likelihood of an outcome. If your quiz results indicate high risk, use these results to examine your operation. It may be that there are areas in which you can improve, while still maintaining yield and preserving the ideals of organic agriculture.

REFERENCES

Dimitri, C. and L. Oberholtzer 2009. Marketing U.S. Organic Foods: Recent Trends From Farms to Consumers. Economic Information Bulletin No. EIB-58. USDA Economic Research Service.

Greene, C., C. Dimitri, B.H. Lin, W. McBride, L. Oberholtzer, and T. Smith. 2009. Emerging Issues in the U.S. Organic Industry. Economic Information Bulletin No. EIB-55. USDA Economic Research Service.

Minnesota Department of Agriculture. 2008. Overview: Experiences and Outlook of Minnesota Organic Farmers – 2007 <http://www.mda.state.mn.us/news/publications/food/organicgrowing/2007orgsurvresults.pdf>

Minnesota Department of Agriculture. 2010. Status of Organic Agriculture in Minnesota: A Report to the Minnesota Legislature. <http://www.mda.state.mn.us/~media/Files/news/govrelations/organicstatusreport.ashx>

United States Department of Agriculture – Agricultural Marketing Service. 2010. National Organic Program. <http://www.ams.usda.gov/AMSV1.0/NOP>

United States Department of Agriculture – Economic Research Service. 2010. Organic Production Data Sets. <http://www.ers.usda.gov/Data/Organic/#national>