

# **Planning For Whole Farm Management:**

## **Lessons From Midwest Farmers**

A Publication of  
The Minnesota Project  
And The Great Lakes Whole Farm  
Planning Network

**By Michelle Miller**

**Diane Jensen, Steve Bonney, Laura Ann Bergman**

**The Minnesota Project** connects people and policy, nurturing collaborations that build strong local economies, vibrant communities, and a healthy environment.

**The Great Lakes Whole Farm Planning  
Network is comprised of the following  
organizations:**

Innovative Farmers of Ohio

The Michigan Agriculture Stewardship  
Association

The Minnesota Project

Sustainable Earth (Indiana)

University of Wisconsin, Center for  
Integrated Agricultural Systems

The Great Lakes Whole Farm Planning Network works toward profitable farms that protect the Great Lakes water system using successful Whole Farm Planning and decision making.

*Planning For Whole Farm Management* highlights the research projects of North

Central Region SARE that best demonstrate Whole Farm Planning

principles. 1885 University Ave W

Suite 315

St. Paul, MN 55104

Tel: 651-645-6159

Fax: 651-645-1262

The Minnesota Project and the Great Lakes Whole Farm Planning Network gratefully acknowledge the North Central Region Sustainable Agriculture Research and Education Program for making this publication possible.

[www.mnproject.org](http://www.mnproject.org)

## **Low Cost Waste Management System**

FNC 94-79

Joel Rissman

Waterman, IL

Joel Rissman raised a number of crops on nearly 400 acres in an extended rotation – corn, soybeans, wheat, alfalfa, oats, and hairy vetch. He planned to extend the rotation further with highvalue crops such as spelt and sesame. Within two years of the project’s initiation, Rissman expected all his crops to be certified organic.

Rissman also purchased about 250 head of feeder cattle that he fattens on typical cement lots with sheds, and beds with straw, cobs, or stalks. Rissman realized three project goals throughout the course of the project. He learned how to handle waste water runoff from his cattle operation, how to handle raw manure for composting, and how to eliminate off-farm soil amendments through use of compost and extended crop rotation.

He built a retention pond to handle runoff water from his cattle lot. He measured the total surface area of the cattle lot in square feet and then multiplied this number by the amount of rainfall (in feet) to give the cubic foot of water storage needed. Rissman used a 50 year maximum rainfall number to determine the size of his pond and an elevations map to site the pond. He reduced the cost of the project by ensuring that all materials needed to construct the pond could be found on his property. Finally, he installed a safety fence around the pond to discourage his children from playing near the water.

To accomplish the second goal, Rissman built a composting pad so that runoff from the immediate area would drain into his retention pond. He simply graded an area, applied hi-calcium lime to seal the soil surface and after it sealed, added a layer of gravel to create an “all weather road.” He then allowed the compost pad to rest for at least a year to allow the ground to settle.

The composting process he developed starts in the cattle sheds. Rissman spreads hi-calcium lime on the

bare floor to absorb the nitrogen-rich urine. He prefers hi-cal lime to dolomite because it is low in magnesium, one mineral for which his soil tests high.

Once the bedding in his shed is four inches deep, he sprays it with a compost starter inoculant that helps lock up the nutrients, speed the breakdown process, and eliminate odor.

Rissman cleans the sheds every four to six weeks, and moves the material to the compost pad in piles four to five feet high and 10 feet wide. He composts using the controlled microbial composting (CMC) method pioneered in Austria. It is a completely aerobic composting process that reduces the volume of manure and bedding by 60%, makes more nutrients available to his crops, and renders pathogens and weed seeds unviable. He tests his piles daily for carbon dioxide and temperature criteria, and turns the piles based on his measurements. He uses water from the retention pond to maintain the proper moisture level in his compost, and within six to eight weeks has good compost to apply to his fields.

Compost allowed Rissman to eliminate the need for purchased nutrients for his farm, saved him labor, and made it easier to go organic.