

# Landscape Ecology of Organic Farming Systems

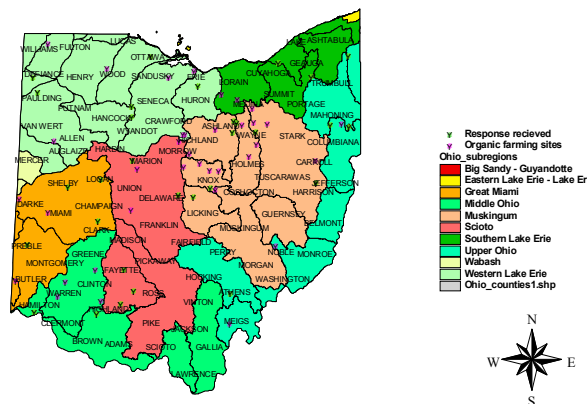
Krishna Prasad Vadrevu<sup>1</sup>, Deborah Stinner<sup>2</sup>, John Cardina<sup>3</sup> and Casey Hoy<sup>2</sup>

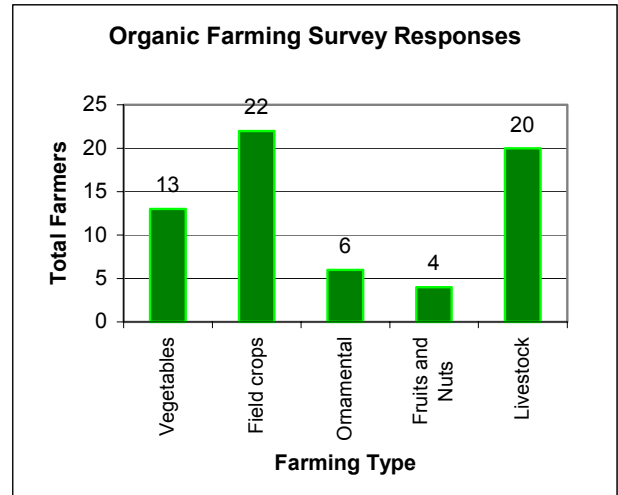
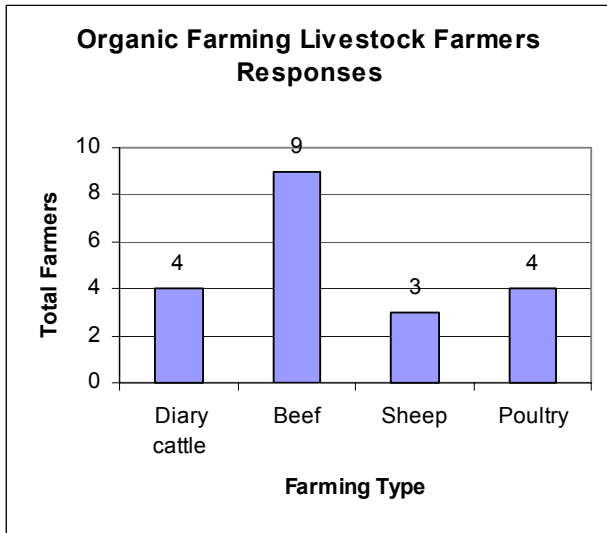
<sup>1</sup>Agroecosystem Management Program, Departments of <sup>2</sup>Entomology and <sup>3</sup>Horticulture and Crop Science

The Ohio State University - OARDC  
1680 Madison Ave., Wooster OH 44691

This project has been started to understand and provide ways to characterize landscapes in terms of their suitability, the sum of challenges and opportunities for organic farming. The main objectives of the study were 1. To understand and help farmers with the challenges and opportunities presented by the landscape (the land and the people) surrounding organic farms. 2. From the perspective of the landscape, how challenging will it be for organic farms? 3. From the perspective of an individual organic farm, how can the farmer optimize connections with the surrounding landscape? The input data for this project has been acquired from Remote sensing derived land use cover data and Geographic Information Systems. As a part of the study, detailed information on different organic/transitional organic farming sites throughout Ohio was obtained through a detailed structured questionnaire. Information relating to inflows and outflows of nutrients, organisms (pests, weeds, etc) energy, supplies, income/currency, market information etc., has been collected from farmers practicing organic agriculture. This was achieved through interacting with farmers and also expert scientists in organic farming. In addition to detailed questions that were asked on these flows, questions on general information on crop type categories, acreage, typical crop rotations, yield, socioeconomic details were included. These questionnaires were communicated to nearly 65 farmers covering different ecoregions of Ohio.

## ORGANIC FARMING SURVEY





Nearly 36% percent of the farmers responded providing most of the information on organic farming practices. Specifically, the responses for different crops were vegetables (13 farmers), field crops (22), Ornamental (6), fruits and nuts (4) and Livestock (20 farmers). In case of livestock, the different types were diary cattle (4), beef cattle (9), sheep (3) and poultry (4). The responses from these surveys were structured, ordered and entered into GIS database. We then used spatial network analysis in GIS framework to examine the spatial arrangement of social and economic networks surrounding different organic farms in Ohio. Further, the information received from the farmers is being used to better understand the organic farming practices in different geographic and landscape ecological regions of Ohio. The GIS database and information is also being shared with researchers and farmers interested in organic farming. Specific results obtained from spatial network analysis in addition to overall results relating to organic farming practices will be discussed during the presentation.