

Enhancing Organic Research Update From the Northeast Organic Network (NEON)

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Organic agriculture is slowly entering mainstream U.S. agriculture for several reasons, including expanding markets, improved profitability and concerns for the environment. Currently, there are between 10,000-15,000 farms working more than 1 million acres of crop and grazing land in the U.S (Lipson, 1997). While this only represents about 0.2% of all U.S. crop land as certified organic, acreages are steadily increasing. Many growers are considering organic production since these products generally receive 20% higher price in the market. Organic farming has been shown to be more profitable for small farmers – even without premium prices that organic crops generally receive. Organic agriculture is also well suited for high value crops (vegetables and herbs) where increased labor costs are more readily justified. Large-scale production of organic grains (for both livestock and human consumption) continues to be a rapidly growing sector. In addition, the recent creation of a National Organic Program and Standards is expected to increase acres undergoing transition (for details on the full rule, please see <http://www.ams.usda.gov/nop/>).

Domestic sales of organic products have increased at 20% per year for each of the last seven years. Food production in the US retail food sector is \$756 billion, and organic production is valued presently at 1% of this total, but is growing. The Hartman report found that 90% of American consumers were either buying or considering buying organic products – and this figure is up from 60% two years ago. Organic food products' retail value was \$0.5 billion in 1990, \$4 billion in 1996 and is estimated to be \$8 billion in 2000. Conventional food processors and distributors are linking with organic producers (Small Planet Foods and Hain Foods). Although the business climate for organic agriculture is more favorable, there is also greater pressure from outside the region (e.g. California and Mexico) to meet the increased demand. It has been estimated that >75% of the food consumed in the northeastern U.S. is imported from other regions, and the same is probably true for organic products marketed in the region.

Organic farming's potential, particularly as an alternative strategy for small farms, remains largely undeveloped. More research, extension and educational efforts are needed to fulfill the promise of organic agriculture. Historically, inadequate support has hindered organic agriculture's development. During 1995-6, the National Organic Research Policy Analysis (NORPA) project conducted a study to identify federally-funded organic agriculture projects. Of nearly 30,000 summaries of research projects examined through the CRIS database, only 34 were identified as focused on organic systems or methods (for full report, see <http://www.ofrf.org/publications/oword/oword.html>). Since this represents only about 0.1% of USDA's research portfolio, NORPA's report states, "The national agricultural research system has failed to recognize...[or] help improve the performance of organic farming systems."

Despite insufficient federal funding, organic agriculture has been able to survive primarily through the efforts of dedicated producers, their grassroots organizations, and foundation support for the organic mission. Focused efforts, especially partnerships with private and public entities, are urgently needed to develop strategies to overcome biological and social constraints facing organic agriculture. In addition, creative crop-marketing initiatives would

assist producers. Resources within the Land Grant Universities can help organic producers manage their production and marketing practices, but this must be done in a coordinated and collaborative fashion, with strong partnerships and shared leadership between the private and public sectors.

The Northeast Organic Network, or NEON, is just such a collaborative of farmers, researchers, extension educators and grassroots nonprofits working together to improve organic farmers' access to research and technical support. Funded by a \$1.2 million grant from the USDA's IFAFS in 2001, this multi-state, multidisciplinary team has been conducting research and extension and education programs on organic agriculture throughout the Northeast. NEON is hosted by Cornell University, but collaborators are located at universities, agriculture experiment stations, organic farms and organic nonprofit organizations throughout the northeastern U.S. Unlike OAC, NEON's focus is on improving understanding of established organic farms, and defining conditions under which a transition to organic may be feasible to enhance small farm viability. NEON has three main target outcomes:

1. NEON will strengthen collaboration among growers, non-profit organizations and Northeast academic institutions to facilitate research, extension and educational programs on organic agriculture.
2. We will develop enterprise budgets and farm business management information that focuses on established organic farms in the Northeast, to evaluate current farm success, based upon farmer goals and objectives.
3. Targeted applied research will address specific knowledge gaps in current soil fertility, crop and pest management practices to develop decision support tools to improve organic farming management. Specific questions included:
 - What are the contributions of various organic amendments to nutrient balances on organic farms, and in which cases might we be over-applying?
 - How can crop rotations, crop diversity and cover crops be used to reduce severity of insects, diseases and weeds in organic crops?
 - How effective are organically accepted 'rescue treatments' at reducing crop losses from pests?
 - What new cover crop species may be well adapted to organic farms in the Northeast?

A major effort within NEON is our study of 11 exemplary organic farms in the Northeast. We call this our Focal Farm Project. These farms were nominated by their peers and are recognized as innovative and highly successful operations. These farms are participating as NEON partners to profile each farm's cropping system, production, weeds, insects, soils, and economics. The farms, the farmers and crops being focused on at each farm are:

- Fair Hills Farm, Ed Fry, Chestertown, MD.
 - Silage corn, alfalfa, rye
- Paradise Organics, Chris Petersheim, Paradise, PA.
 - Salad greens, lettuce, spinach, kale, collards, peppers, tomatoes
- Spiral Path Farm, Mike and Terra Brownback, Loysville, PA.
 - Lettuce, summer squash, tomatoes, peppers, salad greens
- Watershed Organic Farm, Jim Kinsel, Pennington, NJ
 - Tomatoes, broccoli, potatoes, winter squash, lettuce, strawberries
- Beech Grove Farm, Anne and Eric Nordell, Beech Grove, PA

- Garlic, storage onions, lettuce, potatoes, carrots
- Blue Heron Farm, Lou Johns and Robin Ostfeld, Lodi, NY.
 - Lettuce, tomatoes, potatoes, strawberries
- Mary-Howell and Klaas Martens Farm, Penn Yan, NY.
 - Spelt, soybeans, field corn, processing snap beans & cabbage
- Myer Farm, John Myer, Ovid, NY.
 - Soybeans, spelt, field corn, winter wheat, alfalfa hay
- Kestrel Farm, Tom and Merrilee Harlow, Westminster, VT.
 - Lettuce, parsnips, sweet corn, green beans
- New Leaf Farm, Dave and Christine Colson, Durham, ME.
 - Salad greens, tomatoes, summer & winter squash, brassicas
- Upper Forty Farm, Kathy, Bennett and Andy Caruso, Cromwell, CT
 - Green beans, winter squash, peppers, sweet corn

In its first two years, the NEON Focal Farm field research will gather information describing the production system, pest pressures, and yields of sample beds or fields of key crops on each focal farm. Guided by the farmer and each farms' cropping system, representative beds of key crops will be sampled throughout the season for yield, weeds, pests and beneficial insects. Economic profiles will be prepared during the winter.

Together, we seek answers to these questions about organic farms:

- What are the production strategies & yields of key crops?
- What are the weed problems and how are they managed?
- What are the problem pests for key crops and how are they managed?
- What practices are used on the farm to manage soil health & fertility?
- How do farmers determine the crop mix and how do they evaluate the business profitability?
- What are the financial benchmarks for profitable organic farming operations?

To address the multitude of systems research questions facing organic agriculture in the longer term, the focal farm study is a first step to developing a better overall collaborative approach to meet the specific research needs of organic agriculture.

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