

LNE91-28
Final

Northeast Farmer to Farmer Information Exchange
SARE Annual Report
July 31, 1994

1. **Project Number:** LNE91-28
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2. **Project Title:** The Northeast Farmer to Farmer Information Exchange
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4. **Type of Report:** Final
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6. **Reporting Period:** January 1, 1991 - July 31, 1994
7. **Major Participants:** no changes
8. **Cooperators:** no changes
9. **Project Status:** The project is new.
11. **Statement of Expenditures**

Final statement of expenditures will be sent under separate cover.

1. Objectives

1. To improve organic production methods for selected crops through grower-to-grower exchange of information.

Four of the five forum topics selected--apples, strawberries, sweet corn, and livestock--have been identified by Northeastern growers as crops which are particularly hard to produce organically in this region. Organic bedding plants are not readily available for sale in the Northeast, although they will be required for organic production under the Organic Foods Production Act of 1990. In interviews conducted by the Northeast Organic and Sustainable Farmers Network, these production areas were most frequently cited as those needing further research. In Vermont, where whole farm certification is required, farmers may find that their entire farm is ineligible for certification because of the difficulty of producing these crops organically.

Through a process of trial and error, many farmers have been experimenting with ways to overcome their production obstacles. In most cases, the results of these informal experiments never leave the farm or are shared with the larger agricultural community. By facilitating this exchange of information, the experiences of both farmers and researchers working on these crops can build upon each other.

2. To link researchers and other agricultural professionals (extension, land grant, IPM) with organic farmers, and to link farmers with other farmers to share strategies and experiences.

Researchers at land grant universities are increasingly doing work on sustainable practices which is relevant to organic producers. Their results are passed through traditional Cooperative Extension channels which tend to be focused on conventional growers and are not commonly used by organic farmers. As a result, organic farmers have limited contact with this research-based knowledge. Researchers, in turn, may not be familiar with commercial organic operations, particularly in crops like apples which are not commonly produced organically in the Northeast. Thus, neither group has the benefit of the perspectives and knowledge of the other group as they plan their experiments. While this model emphasizes the exchange of information between farmers, it recognizes the important role that researchers can play in disseminating information to farmers and the value of farmer experimentation results to researchers.

Farmers working to produce the selected crops organically are often isolated, and have little opportunity to spend a substantial amount of time with another grower engaged in a similar endeavor. Each farmer may try innovative techniques on his or her farm, and the knowledge they each have would be valuable to others. Nick Cowles, participant in the apple pilot project, confirms that "I attend less and less meetings of any sort, [but] this meeting was an invaluable gathering that I hope continues at least once a year." Another participant acknowledged that "although the anxiety I've been feeling in anticipation of weaning off Imidan and committing to compost teas has not diminished, it was very reassuring to establish contacts with others sharing similar anxieties."

2. Abstract: Description of Project

The Northeast Farmer to Farmer Information Exchange project is focused on five commodities for which there are significant barriers to organic production in the Northeast: apples, strawberries, sweet corn, greenhouse bedding plants, and livestock. Some participating growers are working towards organic production of these crops but are currently unable to manage some aspect of production organically. Other growers are actively looking for alternatives to production methods which, though organically acceptable, may not be environmentally benign, economically viable, or wholly effective. Others are not seeking to produce an organic crop, but are using, or would like to use, innovative, sustainable techniques on their farms. Often these farmers work in relative isolation from other farmers using similar techniques.

8-12 growers of each commodity met for much of two days each winter in 1992 and 1993. At the request of the farmer participants, resource people were also invited to attend. These included researchers, faculty, IPM specialists and Extension agents from land grant universities, professional organic farming technical advisors, representatives of state departments of agriculture, and farmers recommended by others because of their experience and knowledge. Each meeting had two facilitators who assisted farmers in setting and following their agenda and moderated the discussions. Resource people sometimes made informal presentations but primarily were participants in discussions. Meetings included an in-depth introduction to the farm of each participant, discussions of growing philosophy, and discussion of production methods, marketing and farm management as decided by the participants in each meeting.

In 1992, each meeting ended with a planning session on follow-up activities. These activities varied among groups, depending on the particular interests of the participants. All growers planned to test some of the techniques and ideas discussed at the meeting on their own farms. Additional activities ranged from IPM scouting training to replicated research trials on participants' farms to testimony before the National Organic Standards Board on regulations affecting organic livestock producers.

At the 1993 meetings, the growers discussed the results of trials, both formal and informal, that were conducted during the growing season as a result of the previous year's meeting. In addition, several of the groups focused on topics selected the previous year with the help of resource people with expertise in those areas. These included farm record-keeping and pasture management. Several new growers attended the meetings, and growers agreed that adding new participants to the network is valuable because of their different experience and knowledge; in addition, however, growers commented that coming together for a second year increased the supportive value of the network. Four of the five groups discussed ways to continue meeting and sharing information beyond the duration of this grant.

Publication of summary "Proceedings" of the meetings of each grower group was an important part of this project. Understanding and exposing others to several different production methods, each designed for and suited to a particular farm and farmer, was an important objective of this project. Through the proceedings, both the detailed information on specific techniques and the broader understanding of particular farm systems which the participants shared with and gained from each other are made available to other farmers.

3. Specific Project Results

A. Findings and Accomplishments

Unlike many projects, the Northeast Farmer to Farmer Information Exchange is not aimed at testing a specific production method but at helping growers to find solutions to their particular problems through exposure to other growers and researchers working with the same crop. Thus, the results achieved are different for each of the growers participating in the project. Some of the achievements of each grower group follow:

Objective 1: Improvement of organic growing methods

- Participants in the livestock meeting are experimenting with ways to rely more on pastures and forages to meet feed requirements, because organic grain is expensive and difficult to obtain. During the 1992 and 1993 season, farmers experimented with frost seeding New Zealand ladino clover, overseeding orchard grass, brome grass interseeded with alfalfa, metua interseeded with ladino clover, frost seeding puna chicory and annual rye, and seeding typhon. Results of the 1992-93 and 1993-94 seeding trials are included in the Proceedings of livestock meeting. At the close of the 1992 meeting, the livestock growers decided to focus on grassland improvement at the 1993 meeting. Lisa McCrory, a University of Vermont pasture specialist, was invited to speak and to be a resource at the 1993 meeting. All of the participating growers from Vermont were selected to take part in McCrory's recently-funded on-farm pasture trials in rotational grazing and parasite control.

- Sweet corn growers tried a number of new practices in 1992, many of which came out the 1992 meeting. One grower had received a small grant to build a flame weeder so had this experience to report. Another, who already had a flamer, experimented with new ways to use it for weed control in potato, corn and other crops. Following 1992 discussions of fertility and soil organic matter, two participants in the corn meeting increased their use of manure as the primary source of nutrients. One grower, who plants all at once because he grows a traditional flint corn, planted earlier after hearing more about corn earworm biology in his region, and thereby avoided corn earworm damage. One participant tried a new yellow SE variety that was recommended by the other farmers, and found that it produced well and was tremendously successful in his markets. He also tested a mixture of sunspray oil, BT and Pyrellin and had good control of sap beetles and moderate control of CEW. Another grower purchased a new weeding implement, the Lely, after discussions about it at the 1992 meeting. As in 1992, at the 1993 meeting the farmers talked with each other nonstop from early morning until late at night, about corn as well as all their other crops and their lives and businesses.

- Several apple growers are exploring the use of mating disruption pheromone for codling moth management. They shared both techniques for using the pheromone, and advice about working with the pheromone manufacturers, who are managing the use of the pheromone under an experimental use permit. In 1993, one manufacturer agreed to test the use of the pheromone on small acreage after successful one-acre trials in Michigan. Several participating growers tested the pheromone in 1993.

Objective two: Information exchange between growers, and among growers and agricultural professionals:

- The 1992 livestock meeting expanded an existing group of organic dairy farmers who are exploring alternative herd health remedies such as homeopathy. In 1993, the farmers reviewed the previous year's herd health problems shared information on remedies. Due to the interest in homeopathy at the meetings, the coordinator of the livestock meetings worked with the participating farmers and representatives of the University of Vermont to organize a 2-day on-farm homeopathy workshop in May, 1993. Over 50 farmers and veterinarians attended the event and learned the basics of homeopathy as well as remedies for specific ailments.

- The apple growers were invited to meet in 1993 at the Rodale Research Center, one of the few research institutions which has conducted trials of organic apple production methods. Meeting at Rodale allowed Rodale researchers, who participated in the full two days of meetings, to become familiar with the operations of 6 organic and low spray apple growers. The participating farmers learned of Rodale's research results, and suggested some ways to combat several of Rodale's most persistent pests. Rodale researchers presented their plans for future trials for comment from the growers. Sarah Wolfgang, Rodale Orchard Manager, was invited to become a regular member of apple grower group and to attend future meetings.

- New resource people who attended the corn meeting in 1993 included Don Probst, Entomologist and IPM Coordinator from New Jersey, and Robert Christensen, Agricultural Economist from UMASS. Frank Mangan, Extension Vegetable Specialist and Mary Jane Else, Weed IPM Specialist returned for a second year. Mangan and Else both commented that the meeting was very valuable for them and that they learned a lot from the farmers. Mangan, who is conducting on-farm trials of hairy vetch as a winter cover crop, included one Massachusetts participant in 1993 trials, and has worked with another, who grows and combines his own rye/vetch seed, to put him in contact with regional farmers who want seed.

- Discussions of marketing were an important part of the apple growers' meetings in 1991 and 1992. Many of the participating growers' practices do not fall neatly into categories such as "organic" or "IPM" and are difficult to convey to customers. Growers exchanged ideas for advertising, point of purchase displays, and other ways to explain and promote their growing methods and products to customers.

- Greenhouse growers decided at the 1992 meeting to focus on farm record-keeping and financial planning. David Holm, farm manager at Hampshire College in Amherst, MA, help growers to figure out effective and feasible methods of record keeping which would allow them to analyze costs and profits for each of their crops. Holm has a degree in agricultural economics and has devoted considerable time to developing good methods of keeping labor, yield, and sale records. The small size of the meeting allowed each participant to spend time on one of two computers and to have their particular questions answered, whatever their level of computer expertise. One grower, for example, developed a computerized version of her complex seeding and cutting schedule.

- Managing farm labor was a major topic of conversation at the greenhouse meeting. Growers discussed wages, promotions, firing, incentives, staff meetings, tax obligations, and ways to provide staff with places to eat lunch and fill out time cards and crop records without making their homes public.

- Dan Cooley, Sonia Schloemann, and Arthur Tuttle of the University of Massachusetts Strawberry IPM Program came to the strawberry meeting in both 1992 and 1993. One area of their research in which growers were particularly interested was the use of compost for disease suppression. They provided information about the possible mechanisms for disease suppression from compost, and summarized the results of their trials of different composts. Growers discussed various methods of overcoming obstacles to successful compost production, such as the amount of time and equipment needed and problems with achieving sufficient heat to kill weed seeds. One grower said that he had decided to stop making compost but had changed his mind after talking to the Strawberry IPM Program resource people.

B. Dissemination of Findings

Several of the participating growers have been asked to speak at conferences and workshops, including the New England Vegetable and Small Fruit Growers Convention and the Natural Organic Farmers Association Summer Conference. Ruth Hazzard has presented two talks on "Organic Sweet Corn Production" at meetings of organic farmers, one in Massachusetts at the NOFA summer conference, to an audience of about 45, and one in West Virginia at the annual conference of the Mountain State Organic Growers and Buyers Association, to an audience of 50. In addition, Hazzard developed a fact sheet on organic sweet corn production for distribution to interested growers (attached). Margaret Christie presented a talk on "Organic and IPM Apple Management" to about 50 people at the NOFA Conference in 1992.

At the request of participants in the strawberry meeting who wanted field training in IPM methods, the University of Massachusetts Strawberry IPM Coordinator met with participants and about 25 other growers at a Vermont strawberry farm in June of 1992. This meeting provided hands-on training in scouting methods and identification of insects and diseases, and opportunity for discussion.

Ruth Hazzard presented a poster entitled "Farmer-to-Farmer Information Exchange: A New Model for Extension" at the national conference of the Entomological Society of America, Baltimore, MD, in December 1992. This emphasized the interactive nature of information exchange among farmers, Extension personnel, and private agricultural professionals in these meetings, and the outcomes of the meetings in the form of new research projects, farmer organizing, farmer knowledge, and farming practices. A frequent comment of University and Extension personnel viewing the poster was "yes, we need to do more of this kind of meetings with farmers; I'm really tired of the old way of just giving talks." Margaret Christie, Alex Stone, and Enid Wonnacott led a discussion of farmer-led research and information exchange at the 1992 NOFA Conference in which about 30 farmers and researchers participated.

Based on the knowledge gained by working with the participating dairy farmers, Enid Wonnacott, the livestock meeting coordinator, has been working with Stonyfield Farm, a yogurt manufacturer, to help local farmers make the transition from conventional to organic dairy management. Resource materials gathered for the livestock grower group were

distributed to these farmers.

Two of the grower groups have continued to meet after the two meetings funded by the SARE grant were completed. The sweet corn growers met for a third time in Massachusetts in the winter of 1994. New growers were invited to attend this meeting. The apple growers organized a meeting at one of the participant's farms in March of 1994. They invited a New York State Experiment Station technician and orchardist to discuss the research he carries out in his home orchard. In addition, the group focused on marketing low spray fruit and discussed options for disseminating information through a newsletter. Since several of the apple growers participated in a pilot meeting of the Northeast Farmer-to-Farmer Information Exchange in 1991, this was the fourth annual meeting of this group. They intend to continue to meet yearly, inviting new growers to join them. The livestock growers, too, are planning on-farm visits to each other's farms in the next two years. Efforts are being made to add new growers to each of the groups.

Summary proceedings of the information presented at the two years of meetings have been completed. These proceedings make the wealth of information, ideas, and growing methods discussed at the meetings available to other growers and researchers. They are being distributed through the Natural Organic Farmers Association and are enclosed with this report.

D. Economic Analysis

Although not part of the original objectives, economic analysis of the sweet corn weed trials which were conducted in 1992 and 1993 and included several of the corn meeting participants has been completed; this report, "Development of Bio-intensive Sweet Corn IPM," was included with the 1993 Annual Report.

4. Potential Contributions and Practical Applications

A. Potential Impacts

Fifty-five organic or low-spray farmers have improved their knowledge of organic methods as a result of the two meetings, and have moved toward solving some of the most difficult obstacles to organic production of five crops, including providing adequate nutrition, managing weeds, preventing insect damage, and marketing. In addition, they are now aware of other farmers who are trying to solve the same problems; previously, many of these growers felt isolated from any other organic or low spray producers of their crop, and had few external resources for resolving their specific management problems. They have increased their experimentation with new methods.

Eighteen Cooperative Extension personnel and other agricultural professionals are more familiar with the production systems and obstacles faced by organic farmers. Several of these have directed part of their research efforts to evaluation of methods which directly address problems faced by organic farmers, in part as a result of their interaction with farmers at the meetings. Participating resource people were enthusiastic about this method of information exchange because of the in-depth knowledge they gained of participant's farms and their research needs.

B. New Hypotheses

One hypothesis resulting from this project is that the interactive structure used for these meetings is an effective way to enhance knowledge for both farmers and researcher and

can be used as a model for any situation where new agricultural management systems are under development, including with conventional growers. Few agricultural management systems are static, but the meetings of the Northeast Farmer to Farmer Information Exchange suggest that the time investment necessary to meet is most worthwhile to growers trying to produce a crop using management methods which are unusual and largely untried. For example, the organic bedding plant producers who attended the meetings were largely satisfied with their production systems. The meetings were most useful for them for working on record-keeping and labor management. The organic and very low spray apple growers, on the other hand, face many production obstacles, and found these meetings one of the few sources of information which might help them to overcome these obstacles.

A specific, production-related hypothesis related to sweet corn production is that a combination of BT and direct silk treatment with oil can reduce ear damage by late-season caterpillars (including corn earworm, fall armyworm, and European corn borer) to acceptable wholesale fresh market levels at costs which are economically viable to organic growers who receive a 20% premium for their products, and may be economically viable even in the absence of a price premium.

5 Farmer Adoption and Direct Impact

A. Changes in Practice

The examples of findings and accomplishments above illustrate the wide variety of different areas in which impact from this network and others like it might be felt: crop production, marketing, and the environment. The activities were generated by farmers whose interest in more sustainable growing techniques is indicated by their willingness to give up 3 days to travel and meeting; the impact of activities they initiate is highly likely to have beneficial environmental and economic effects. Since the focus of this project was not limited to one production area, the production changes made by farmers vary widely and are difficult to summarize. The summary proceedings include information about specific practices adopted by farmers and about how these practices fit into their overall farm management systems. This project also had important quality of life results. One grower noted "It is not very often one gets the opportunity to 'talk shop' with people in the same business. Also talking about our personal lives and experiences has been extremely valuable." As noted above, several of the groups plan to continue meeting or exchanging information at their own expense.

B. Operational Recommendations

No one set of operational recommendations can be made on the basis of this research, but the day-to-day operational decisions made by a diverse group of farmers are made available to other farmers in the proceedings. Rather than suggesting a specific set of practices, this project and its proceedings highlight the variety of methods and techniques which a group of expert growers have developed for managing their particular farms.

C. Farmer Evaluations

Please see the attached selection of participant comments.

6. Producer Involvement

Number of growers/producers in attendance at:

<u>55</u>	Farmer to Farmer Meetings
<u>50</u>	Workshops
<u>200</u>	Conferences
<u>30</u>	Field Day

7. Areas needing further study

Participating farmers developed lists of subjects needing further study. Below is a partial list.

- Use of hydrogen peroxide and baking soda for disease control
- Use of mating disruption pheromone on small acreage
- Environmental effects of sulfur-based scab programs as currently used by growers
- Use of compost in orchards and its effect on leaf litter density and potential scab ascospore dose.
- Non-chemical controls of plum curculio, including study of natural enemies and possible monitoring and trapping methods
- sweet corn weed management: most effective and cost-effective equipment and timing; use of flammers; integration with cover cropping
- sweet corn nutrient management: nutrient release from organic amendments such as manure and compost; contribution of winter annual and fallow legume cover crops; interaction of weed growth and cover crops; use of vegetable meals as nutrient source at planting and sidedressing; developing worksheets for assigning credits to all sources; use of pre-sidedress nitrate test.
- sweet corn insect management: corn earworm control; evaluation of *Trichogramma* species as to release rates, timing of release and efficacy.
- Use of compost for disease suppression, at strawberry renovation and as mulch
- Development of small-scale, on-farm compost turners
- Non-chemical weed control methods in second year strawberry beds, including flame weeders
- Effects of forage diversity and management on livestock health
- Increasing feed value of permanent pastures and hayfields
- Effects of a minimal grain feeding program
- Effects of raw manure on soil micro-organisms
- Use of hydrogen peroxide as a cleaner, sanitizer, and teat dip
- Sources of readily-available fertility for organic bedding plants which must be held for an extended period in containers
- Adapting the farmer-to-farmer model to other commodity groups and types of growers, for the purpose of developing sustainable bio-intensive management methods and enhancing communication among farmers and researchers.

Enclosures

1. Selected comments from participating farmers.
2. List of participating growers.
3. "Proceedings of the Northeast Farmer to Farmer Information Exchange: Apple Meeting 1992 and 1993," edited by Margaret Christie.
4. "Proceedings of the Northeast Farmer to Farmer Information Exchange: Greenhouse Meeting 1992 and 1993," edited by Alex Stone.
5. "Proceedings of the Northeast Farmer to Farmer Information Exchange: Livestock Meeting 1992 and 1993," edited by Enid Wonnacott.
6. "Proceedings of the Northeast Farmer to Farmer Information Exchange: Strawberry Meeting 1992 and 1993," edited by Margaret Christie.
7. "Proceedings of the Northeast Farmer to Farmer Information Exchange: Sweet Corn Meeting 1992 and 1993," edited by Ruth Hazzard.

Comments from participating farmers:

- "Excellent organization at these meetings. [I] would use these meetings as a format guideline [for other meetings.] Funding should be sought but if unavailable farmers would find price well worth what is gained."
- "I have learned more from these meetings than any other I've been to."
- "Learning by interaction is the best way....I would come even if I had to pay."
- "Environmentally appropriate farming is very site specific. It's important to hear specific techniques and why each grower does it that way. Without knowing why I have no way to determine if this will make sense for me."
- "It was very useful to have the time to get to know the other participants. An afternoon meeting would not be enough time to get down [to] useful exchange."
- "Yes, [these meetings will improve my production practices; I have a] better understanding of [the] relationship between soil and plant resistance, disease and pest cycles."
- "Being in a community of fellow growers is very important for me."
- "This type of meeting was more useful than others because "specific questions or ideas, problems, can be pursued--in a 'brainstorming' fashion. Seemed to be a non-competitive environment."
- "Small group interaction plus knowledgeable resource people make it possible to learn a tremendous amount."
- "I would like to see this information/process made available to more people. Perhaps we could participate/facilitate in small groups in our own areas."
- "In these meetings, "specific questions are often answered with several suggestions. The shades of gray are pointed out and discussed and everyone who has information can comment."
- "The meeting contributes to intellectual soup and will spin out improvements in the future."
- "These meetings provide "time I set aside for 'simmering ideas and planning my summer's strategies.'"
- "This is a vital way for growers to exchange information that is not possible in other settings."