Training 2: Pest Management June 27-30, 2005

“The producer must use preventive practices to manage crop pests, weeds, and diseases, including but not limited to crop rotation, soil and crop nutrient management, sanitation measures, and cultural practices that enhance crop health. Such cultural practices include the selection of plant species and varieties with regard to suitability to site-specific conditions and resistance to prevalent pests, weeds, and diseases. Mechanical and biological methods that do not entail application of synthetic substances may be used as needed to control pest, weed, and disease problems that may occur. Pest control practices include augmentation or introduction of pest predators or parasites; development of habitat for natural enemies; and nonsynthetic controls such as lures, traps, and repellents. Weed management practices include mulching with fully biodegradable materials; mowing; livestock grazing; hand weeding and mechanical cultivation; flame, heat, or electrical techniques; and plastic or other synthetic mulches, provided that they are removed from the field at the end of the growing or harvest season. Disease problems may be controlled through management practices which suppress the spread of disease organisms and the application of nonsynthetic biological, botanical, or mineral inputs. When these practices are insufficient to prevent or control crop pests, weeds, and diseases, a biological or botanical substance or a synthetic substance that is allowed on the National List may be used provided that the conditions for using the substance are documented in the organic system plan. ” (NOP Production and Handling preamble)

Pest Management Learning Outcomes
* Participants can identify and explain a range of cultural practices used on organic farms to manage insect pests, diseases and weeds.
* Participants are aware of the range of pesticides allowed for use on organic farms and can help clients and colleagues obtain and utilize information to make decisions about organic pesticide use.
* Participants are aware of the range of cultivation equipment used to manage weeds and can help clients and colleagues obtain information and make decisions on their selection and use.
* Participants understand and can explain practical techniques for managing common weeds, insect pests and diseases on northeastern organic vegetable farms.
* Participants understand and can explain the role of crop rotation in pest management on organic farms and can help farmers and colleagues obtain information and make decisions about crop rotation.

Expectations of work before the workshop
* Please review:
  1. Joe Lewis article
  2. Spiral Path case study
  3. weed website: [http://www.css.cornell.edu/weedeco/WeedDatabase/index2.html](http://www.css.cornell.edu/weedeco/WeedDatabase/index2.html)
  4. farm websites listed below
Day 1, Mon. June 27

am: Travel to State College, Pennsylvania

12:00 LUNCH

1:00 pm - 2:30 pm. Re-aquaint and participant updates on “organic pest management in your world”; activities, goals, how does pest management fit in to projects and goals in their professional lives (Facilitator: Anu)

2:30 – 3:30 pm. Organic pest management. Brief overview of systems level approaches and ecological principles as they relate to pest management. (Discussion leaders: Brian and Abby.) Ideally, organic pest management differs from normal IPM practice by tending to heavily emphasize cultural controls and de-emphasize use of pesticides. Approved pesticides are to be used only "When [cultural] practices are insufficient to prevent or control crop pests, weeds, and diseases..." How feasible is this? Natural controls and balances in agro-ecosystems can be enhanced and supported by the farmer, leading to reduced need for pesticide sprays in many cases (see Lewis article). The group will discuss this article based on what they are seeing in their areas. Homework assignment: W. J. Lewis, J. C. van Lenteren, Sharad C. Phatak, and J. H. Tumlinson, III. 1997. A total system approach to sustainable pest management Proc. Natl. Acad. Sci. USA 94: 12243–12248.

3:30 – 4:00 pm BREAK

4:00 – 5:00 pm Overview of approaches to organic insect pest management (Discussion leader: Kim) General overview of cultural, biological and chemical controls, includes new trap cropping designs and coverage of approved insecticides and other materials.

5:00 – 6:00 pm Diseases – Overview of organic plant disease management (discussion leader: Meg McGrath). General overview of cultural, biological and chemical disease controls.

6:30 pm MIXER

6:30 - 8:30 pm DINNER

Day 2 – Tuesday June 28 - On-farm discussions/presentations

7:00 am Continental Breakfast

8:00 am - 9:00 am. Weed ecology (discussion leader: Chuck Mohler). Overview of principles, ecology and prevention.
9:00 – 9:15 am Participant discussion and Q&A on weed ecology
Homework assignment: review website:
http://www.css.cornell.edu/weedeco/WeedDatabase/index2.html

9:15 - 10:00  Weed management equipment: cultivation and flaming. (Discussion leader: Vern)

10:00 – 10:30 am Break

10:30 – 11:15 am Weed management –Control options and management (discussion leader Chuck Mohler). How to approach setting up an organic cultivation system. Approved materials.

11:15 - 11:45 am Pulling it all together. (Full group discussion: Facilitators: Anu and Brian). Combining weed management tactics into an organic weed management system.

11:45 am – pick up box lunch, travel to Spiral Path Farm, On vans: review the host farm prior to arrival
Spiral Path Farm: Mike and Terra Brownback. Loysville, Pennsylvania.

2:00 pm - 5:00pm Spiral Path Farm. The farmer has been requested to provide a tour around the farm and discuss with us why they are an organic producer (as opposed to conventional), their philosophy and approach to pest management (insects, weeds, disease, vertebrates), their main pest management challenges and what has and hasn't worked in dealing with these challenges. Assessment of overall pest management system on an organic farm – what works, doesn’t work, why? (Facilitator: Anu.)
Homework assignment: http://www.spiralpathfarm.com/, NEON CASE STUDY, Organic System Plan (may not be available)

3:30 – 3:45 pm –pick up snacks/drink

3:45 – 5:00 pm Spiral Path Farm. Field Scouting - Continued Discussion: Assessment of overall pest management system on an organic farm – what works, doesn’t work, why? (discussion leaders: Abby and Kim, Meg, Chuck M.)

5:00 pm leave for dinner

6:30 pm Dinner at Russell Larson Research Center, wagon tour of organic and cover crop field plots and social (Bill Curran, Andy Hulting)

Day 3 – Wednesday June 29

7:00 am Continental Breakfast
8:00 – 9:00  Management of soil-dwelling pests. (discussion leaders: Meg and Mary)

9:00 – 10:00 am Examples of key pest challenges in organic vegetables. Discussion leaders: Abby and Meg.
9:00-9:30 am Foliar diseases of tomato (Septoria and early blight)
9:30-10:00 am Powdery mildew in cucurbits

10:00 – 10:15 am Break, snack/drinks

10:15-10:45 Ruth - Flea beetles attacking brassicas and solanaceous crops
10:45-11:15 Kim - Tarnished plant bug
11:15-11:45 Abby - Striped cucumber beetle and bacterial wilt

Noon – pick up box lunch, eat in van, leave for Village Acres (45 miles, 1 hour)

1:00 – 3:00 pm Village Acres, Mifflintown, PA, Juniata Co. Roy, Hope, Angela Brubaker, RR1, Mifflintown, PA 17059. (717) 436-2111. villageacres@pa.net Farm Tour and Organic Pest Management. The farmer has been requested to provide a tour around the farm and discuss with us why they are an organic producer (as opposed to conventional), their philosophy and approach to pest management (insects, weeds, disease, vertebrates), their main pest management challenges and what has and hasn't worked in dealing with these challenges. Assessment of overall pest management system on an organic farm – what works, doesn’t work, why? (Facilitator: Leslie Zuck)
Homework assignment: Village Acres Website http://www.localharvest.org/farms/M3597, Organic System plan (may not be available)

3:00 pm – pick up Drinks/snacks, leave for Tait Farm (36 miles, 45 min)

3:45 – 5:45 pm Tait Farm Centre Hall, Centre Co., Kim Tait. 179 Tait Rd., 16828. 814-466-7032. (Owner/Operator Kim Tait, Farmer Dave Sandy) Farm Tour and Organic Pest Management. The farmer has been requested to provide a tour around the farm and discuss with us why they are an organic producer (as opposed to conventional), their philosophy and approach to pest management (insects, weeds, disease, vertebrates), their main pest management challenges and what has and hasn't worked in dealing with these challenges. Assessment of overall pest management system on an organic farm – what works, doesn’t work, why? Issues related to enterprise diversification (Facilitator – Mary)
Homework assignment: Tait Farm Website, http://www.taitfarmfoods.com/index.html, Organic System Plan (may not be available)

5:45 pm Leave for State College
6:30 – 8:30 pm Dinner

Day 4  Thursday June 30  - in class - discussion & presentations

7:00 am Continental Breakfast

8:00 – 9:00 am Review of farm visits – what did we learn? Facilitator: Vern

9:00 am – 10:00 am: Integrative session. Crop Rotation Part 1 (more in Maine) for Pests and Farm Planning. (Facilitator: Anu). Overview of rotation systems - intensive and extensive. What can be done to improve rotations? Integration of concepts into real farm plans, using crop rotation planning tools

10:00 – 10:15 Break

10:15 – 11:30 am: Group discussion: Synthesis of second workshop, discussion of how the information from this workshop will be useful and/or used. What will you (participants) do next? What do you still need to learn? (Facilitator: Brian and Vern).

11:30 - noon Evaluation and feedback

noon – Box lunch from Penn State. Also - Many restaurants near Penn State. Local foods/products market – Stone Soup Store on College Ave. Also nearby Wegman’s Grocery Store, carries Tuscarora Organic Grower’s Coop and other (non-organic) local produce.

Travel safely home. See you in Maine!