The OrganicA Project: A Multi-State, Transdisciplinary Apple Research, Education, and Outreach Project

Lorraine P. Berkett[1], Renae E. Moran[2] , M. Elena Garcia[3], Heather M. Darby[1], Robert L. Parsons[1], Terence L. Bradshaw[1] Sarah L. Kingsley-Richards[1], and Morgan L. Cromwell[1]

[1]University of Vermont, [2]University of Maine , [3]University of Arkansas
Contact address: Lorraine.Berkett@uvm.edu

Synopsis

This project holistically is examining the opportunities and challenges of organic apple production within the two major orchard systems growers are using to change to new cultivars and with five of the top apple cultivars that growers identified as important to the future of the industry. The project was initiated in 2006 and since then, all aspects of the OrganicA Project have received high praise. The project has increased knowledge of organic apple production and has created a change in action among program participants. The OrganicA Project has become a leading resource for organic information on the world wide web. Research results and insights have been presented at regional workshops involving growers, scientists, extension personnel, and agricultural consultants and at national and international scientific conferences. This long-term project was nationally ranked #1 by the USDA Organic Agriculture Research & Extension Program upon review.

Phase 1: Initiated in 2006 and covered the orchard establishment years.
Phase 2: Began in 2009 and covers the early-bearing years of the two organic systems

Objectives: Phase 2

RESEARCH

Objective 1. Continue to evaluate 'new' apple cultivars and incorporate research-generated knowledge of apple ecosystem dynamics into organic production systems to determine sustainability and profitability.

Objective 2. Field test commonly recommended organic foliar nutrient sources and evaluate their impacts on fruit yield, quality, tree nutrition and health including impact on disease and arthropod pests.

Objective 3. Evaluate the benefits of different ground cover strategies in promoting tree health, plant and soil water status, and yield and fruit quality.

OUTREACH

Objective 4. Continue to collaboratively develop and implement with stakeholders a multi-dimensional extension program that addresses their priorities and needs, enables whole farm planning, improves competitiveness, and enhances the ability of growers to grow and market high quality organic apples.

http://www.uvm.edu/organica/

Visit the project website for more information on ***The OrganicA Project*** and organic apple production.

Research Progress

- ***Organic practices initiated in two orchards:*** Two orchard systems that represent the way growers are changing to new apple cultivars were begun with five cultivars ('Ginger Gold', 'Honeycrisp', 'Liberty', 'Macoun', and 'Zestar!') that were identified by growers as important to the future of the apple industry. Orchards are located at the University of Vermont Horticultural Research Center in South Burlington, VT.

Orchard 1. This orchard is a **new planting** with young, nursery trees. For research purposes, the orchard is planted in a completely randomized design with replications of five cultivars


2006


2010

Orchard 2. This orchard is a **top-grafted** orchard. Trees in an existing orchard were cut back prior to grafting of scions. For research purposes, the orchard is grafted in a randomized complete block design with replications of five cultivars


2006


2010

- ***Orchards received organic certification in 2008.***

- ***Extensive data*** are being collected in the following areas for determining differences among cultivars in the two orchard systems: disease incidence and severity; arthropod pest damage and population levels; beneficial arthropod levels; tree growth and development; harvest and yield data; measurements of tree 'health'; measurements of soil 'health'; and economic inputs (i.e., detailed records have been kept on amount of labor used, tasks performed and time required, cost of supplies, maintenance, pest management, harvest, etc. for each orchard system).

- ***Complimentary organic research*** evaluating alternative fungicides for organic apple production in Vermont was conducted by a graduate student, Morgan Cromwell. Terence Bradshaw, another graduate student, conducted research to assess the effects of kelp-extract biostimulants on tree growth, yield, and fruit quality; arthropod incidence and damage; and disease incidence.

- ***Research results have been presented*** at numerous grower and scientific meetings in the state, region, the Midwest, Italy, France and Portugal. Currently, summaries are being prepared for dissemination via the OrganicA website and scientific journals.

Funding sources: USDA Organic Agriculture Research & Extension Initiative, University of Vermont, University of Arkansas, University of Maine, USDA NIFA Integrated Pest Management Program, and the VT Tree Fruit Growers' Association