Unlocking the Secrets of Soil Health
-A Soil Health Workshop-

Increasing Farm Production, Profitability and Protection Of Natural Resources for Long Island Agriculture

August 15, 2014
1:00 p.m. - 4:30 p.m.
Long Island Horticultural Research and Extension Center
3059 Sound Ave. Riverhead, NY 11901

Maintaining on-farm soil health is integral to ensuring productive, profitable, and sustainable agricultural operations while improving water, wildlife, and air quality. Soil health is vital for Long Island as its prime agricultural soils lend to high levels of agricultural production and valuation of this region. Unfortunately, the agronomic practices commonly applied to our sandy loams readily degrade soil health and its functional abilities to support production while buffering against erosion, leaching, disease, pests and weeds.

This science-based workshop will introduce soil principles and properties including the concepts and benefits of best management practices that improve soil health, with a focus on the assets and liabilities of Long Island soils. Hands on soil health demonstrations will reveal how varying management practices can improve soil health and productivity. An array of soil health management systems including cover crop and reduced tillage demonstrations will also be highlighted for the specific commodities grown on Long Island.
Agenda

1:00 p.m. – 1:10 p.m. Welcome and Introductions

1:10 p.m. – 2:00 p.m. Unlocking the Secrets of Soil Health: The Basics and the Benefits of Improved Soil Health (45 minutes)
Raymond Covino, District Conservationist, USDA- Natural Resources Conservation Service, CT

This presentation will provide a comprehensive introduction and the most up-to-date scientific-based information on the soil characteristics and properties paramount to understanding and appreciating the diverse ecosystem beneath our plows/feet. Special attention will be focused on the assets and liabilities of regional soils as well as the economic and environmental returns provided by improved soil health, function and resiliency. Sustainable agricultural practices including chemical application, nutrient immobilization, tillage, and diversity in cropping systems will be key topics of discussion. (NYSDEC 15 Minutes)

2:00 p.m. – 2:30 p.m. Soil Health: Soil Properties and Soil Demonstrations

This presentation provides a-hands on demonstration of differing regional soil properties (dynamic and inherent) and how varying management practices can further improve soil health and productivity. Three soil health demonstrations emphasize the importance soil management and how it can affect soil behavior. For each demonstration similar soil types will used on soils with different management. The management systems most favorable to growing crops use cover crops and reduced tillage. These soils have less runoff, increased water holding capacity, better soil structure, and more soil biota. These demonstrations show cover crops not only control erosion but build organic matter in the soil which lends to reduced nutrient leaching and pesticide applications through improved plant health. Using cover crops and reduced tillage allows farmers to keep the soil covered and minimize disturbance which reduces the pesticide applications, while diversifying soils and crops, and keep root systems growing for as long as possible. (NYS DEC 10 minutes)

2:30 p.m. – 2:45 p.m. Best Management Practices for the Implementation of On-Farm Soil Health Management Systems.
Liz Camps: District Conservationist- USDA- Natural Resources Conservation Service
Polly Weigand: Senior Soil District Technician - Suffolk County Soil and Water Conservation District

An array of sustainable USDA- NRCS conservation practices such as cover cropping, reduced tillage, and pesticide management will provide the necessary techniques and tools to facilitate the implementation of these BMPS by the varying agricultural producers (nursery and landscaping, sod, vegetable, orchard, livestock) growing on Long Island. (NYS DEC 7 minutes)

2:45 p.m. – 3:00 p.m. Break with Refreshments
3:00 p.m. – 3:15 p.m. Improving Soil Health and Disease Suppression in Vegetable Production with Reduced Tillage: Discussion and On-Farm Demonstration of Deep Zone Tillage.
Sandra Menasha - Vegetable Specialist - Cornell Cooperative Extension of Suffolk County
Dr. Meg McGrath – Vegetable Pathologist – Cornell University, LI Research and Horticulture Center

Sandra Menasha and Dr. Meg McGrath will discuss the benefits of using a zone builder as a means of improving soil health and minimizing disease potential in vegetable production systems. They will share results from studies conducted at LIHREC and through observations on grower farms comparing zone-tillage to conventional tillage. Through improved infiltration, drainage, and increased microbial populations, phytophthora incidence has been reduced. The idea that improving soil health and organic matter levels will in the long term lead to healthier plant that can better withstand attack by disease and insect pests will be explored. (NYS DEC 10 minutes)

3:15 p.m. – 4:00 p.m. How to Use and Manage Cover Crops and Cover Crop Mixes for Improving Soil Health, Productivity and Resiliency to Extreme Weather Events
Paul Salon, USDA-NRCS Plant Materials Specialist DEC approved Instructor

The speaker will discuss methods for establishing cover crops including species selection, seed consideration, timing, rates, seed bed preparation and concerns about herbicide carry over and how to consider which herbicides to use when establishing cover crops in rotations. He will discuss how certain cover crops can be used for weed control but also if not managed correctly can become a weed problem. Discuss how some cover crops can suppress disease but can also be a host for insects as well as insects which carry and spread plant diseases. Improving soil health, soil structure, aeration and microbial populations is another benefit of how cover crops can enhance the crop plants ability to reduce symptoms of soil borne diseases. Improving above and below ground biotic diversity allows for more macro invertebrates which can eat and damage weed seeds and also increase beneficial organisms which prey on insect pests on crop plants. Managing cover crops for balancing the carbon to nitrogen ratio (C:N), and for improved soil function will be covered. The speaker will cover the use of perennial cover crop systems for use in perennial cropping systems like for the fruit and nursery industry. (NYS DEC 30)

4:00 p.m. – 4:15 p.m. Mowing and Cover Crop Alternatives for Under-trellis Management
Alice Wise - Viticulture Specialist: Suffolk County Cornell Cooperative Extension

This presentation will address mowing and cover crops as alternatives to the use of herbicides under the grapevine trellis. There are risks and benefits to these strategies. An under-vine mower will be displayed. Management as well as effects on vine health will be reviewed (NYS DEC 10 min).

4:15 p.m. – 4:30 p.m. Cover Crop Strategies for Nursery Production
Mina Vescera: Nursery and Landscape Specialist, Suffolk County Cornell Cooperative Extension

This presentation will review the benefits of cover crops in both field and container nursery production with emphasis on best management applications for IPM, erosion control, and nutrient management. The main benefits that will be addressed are reduction in pre- and post-emergent herbicides, increase in soil organic matter, and nutrient credits. Cover cropping strategies used in local nursery production and regional production will be covered. (NYS DEC 5 Min)

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