

## NEERA1004 – April 1-2, 2014 State Report – Delaware Joanne Whalen

### I. Key Pests:

**(a) Brown Marmorated Stink Bug** – In 2013, this insect caused losses in tree fruit, field corn, soybeans sweet corn and pole lima beans – primarily in New Castle and upper Kent Counties. In general, damage was concentrated on field edges. Significant outcomes of Delaware's research and extension efforts included documentation of the effectiveness of edge treatments for BMSB management in soybeans; identification of key landscape features favoring BMSB; participation in regional trapping trials demonstrating the effectiveness of a two-component BMSB aggregation lure used in combination with the MDT aggregation lure; submission of Section 18's for management of BMSB in fruit; and research in sweet corn and lima beans to identify key growth stages for damage.

**(b) Spotted Wing Drosophila** – The trapping program was expanded and detection occurred once again in all three counties in 2013. Larval damage was once again detected in brambles and expanded to include cherries and grapes.

**(c) Weeds of Concern** – Surveys continue to show that Palmer Amaranth is expanding its area of establishment. Resistance management is a key issue. Jagged chickweed, ivyleaf speedwell, and bulbous oatgrass are becoming more of a problem in small grains.

**II. Staffing** – A new Extension Plant Pathologist was hired in the spring of 2013, Nathan Kleczewski, who will focus on field crop plant pathology. Research and extension programs in 2014 will focus on disease management in small grains, soybean vein necrosis virus in soybeans and BYDV in small grains (a component of our E-IPM Program 2013-2016).

### IV. Program Highlights – 2013

**Agronomic Crops** – One hundred and fifty growers attending two county crops meetings increased their knowledge of new sampling and treatment thresholds for stink bugs in field corn. These new sampling and treatment thresholds were used to manage stinkbugs on 5,000 acres of field corn in 2013 resulting in improved timing of insecticide applications on 1300 acres.

**Specialty Crops (Vegetables)** – Twenty five producers participating in the soil health improvement project improved their knowledge of factors affecting their farms soil health including measurements of pest population levels, compaction, and soil respiration; estimation of microbial biomass; nematode and bean root bioassays. Practices adopted by producers involved in the project included the use of biofumigants (12 producers), the use of biofungicides (one producer) as well as the use of cover crops and crop rotation (25 producers) to improve soil health and reduce losses from crop soil borne diseases and nematodes. Small farmers participating in two field tours of organic eggplant and tomatillos systems gained knowledge on the advantages and limitations of straw mulch as a weed and insect management strategy. Producers attending the meetings identified that they would adopt the following practices: the use of cultivation in combination with straw mulch and the use of organically approved herbicides in combination with the straw mulch.

**Specialty Crops (Christmas Trees)** – Results of a survey of workshop participants indicated that fifty percent of the attendees improved their knowledge regarding sampling for key insect and disease pests and management using reduced risk chemistry. Eighty percent of the participants indicated that they plan to implement the following IPM practices as a result of workshop attendance: improved timing of fungicide applications based on disease monitoring and selection of disease resistant Christmas tree varieties.

**Consumer/Urban** – Five hundred individuals attended IPM workshops for home owners and greens industry professionals. Sixty five percent of the workshop attendees indicated that they

learned new information regarding reduced risk and conventional insecticides. Approximately fifty six percent of workshop attendees gained knowledge about the concept of aesthetic thresholds used to make a treatment decision for insect and the conservation of beneficial insects to help manage insect pest.

## **VI. New E-IPM Grant: 2014 Plans**

**Incorporating Spotted Wing Drosophila (SWD) Monitoring and Management into an Expanding Blueberry Industry:** Increasing grower interest in blueberry production as part of diversified farm operations has resulted in a new Horticultural effort in Delaware related to management practices and variety selection. SWD has been found in blueberries in neighboring states and as we expand our production season it is only a matter of time before they are detected in Delaware blueberries. This project will focus on monitoring for on farm fly detection, sanitation, timely harvest, cultivar susceptibility, canopy and water management, proper selection and timing of insecticide applications, and fruit sampling for larval infestations.

**IPM Education for Small Farms Using High Tunnels:** This area will be led by Rose Ogutu, Extension Horticulture Specialist at Delaware State University in partnership with the University of Delaware IPM Team. Although the High Tunnel Production System makes it an attractive system for many pests it also lends itself to the incorporation of many sustainable IPM practices. This project will focus on the use of cultural controls, resistant plants, management of weeds, use of beneficials for insect management and grafting tomatoes for disease management. Demonstrations will occur on two commercial farms and at Delaware State University's Outreach farm.

**Incorporating Total Crop Management into Soybean IPM Programs:** In Delaware, soybean growers have started to incorporate rye covers into their full season no-till soybean management systems. The use of rye covers can provide both a benefit and challenge to weed and slug management in soybean systems. An integrated approach using vertical tillage and reduced risk molluscicides for slug management, and manipulation of the rye cover for weed and insect management will be demonstrated.

**Addressing New Pest Development in Small Grain IPM Systems:** There are two emerging issues affected small grain producers: (1) an increase in virus vectoring by aphids and (2) herbicide resistance. Growers are also experiencing losses from increasing population levels of three weeds: jagged chickweed, ivyleaf speedwell, and bulbous oatgrass. Extension IPM programs will focus on providing growers with information on a total crop management approach including adjusting planting dates to manage BYD while also maintaining yield, incorporating new weed management strategies, and proper management of aphids using new thresholds and proper timing of insecticide applications.

**IPM Implementation in Communities -** A 2013 survey of the Delaware Nursery and Landscape Industry continued to identify the need to educate homeowners (their customers) about IPM. A new approach to address these needs will include advanced training of Master Gardeners to enable them to incorporate IPM principals into existing programs aimed at children where parents (homeowners) also attend and the implementation of Morning with an Expert program at local garden centers where clients of these centers will be able to ask questions about management and experts will present information on IPM strategies and techniques.