

## 2014 NCERA 222 Report -- Michigan State University

Submitted March 2015

### Here are some of the highlights from the MSU IPM team funding via NIFA IPM Extension:

- Supported IPM adoption in Michigan's emerging minor crops (hops, chestnuts) through hands-on scouting training; sharing of online scouting reports; hosting the inaugural Great Lakes Hop Working Group meeting; hosting multi-state, in-season conference calls for information sharing by educators and researchers working with hops.
- Served as author of the rewrite of the federal Pest Management Strategic Plan for hops.
- Expanded MSU IPM's educational webinars to include new topic areas (hops, chestnuts, pollinator concerns and vegetable IPM).
- Developed 40 tip sheets featuring smart trees to replace ash trees devastated by emerald ash borers in cityscapes ([http://migarden.msu.edu/trees\\_shrubs/selection](http://migarden.msu.edu/trees_shrubs/selection)). An MSUE News article announcing the availability of the tip sheets has been accessed nearly 4,000 times since it was posted in July 2014.
- Featured rotation and cover crop research and demonstration plots during the Michigan Wheat Field Day. Over 180 Michigan farmers learned how diverse rotations and cover crops can reduce weed, insect and disease pressure.
- Developed four IPM bulletins. (1) IPM: A Guide to Resources from MSU; (2) Cole Crops IPM, (3) Organic Raspberry Production in Three-Season High Tunnels, (4) Diseases and Insect Pests of Asparagus. Free copies were given to MSU specialists and Extension educators for their growers. Additional print copies can be purchased or free PDF files downloaded at [shop.msu.edu](http://shop.msu.edu).

#### *1) Advancing cover crops for IPM and soil health through large seed companies*

The cover crop IPM educator developed a soil health training course including cover crops for Pioneer seed dealers as part of a project with the University of Wisconsin funded through Pioneer. This course was piloted with field days in Michigan, Wisconsin and Iowa. The two field days in Constantine, Michigan were attended by 27 Pioneer representatives. Based on this experience, the training is being refined and will be rolled out to all Midwest Pioneer representatives. In another effort, the cover crop IPM educator gave presentations on cover crop use, including IPM, to dealers and farmers through La Crosse Seeds and Pine Ridge Farm Services. Collaboration was established with Johansen Farms LLC, a farm services company to establish on-farm cover crop plots for research and demonstration of the new highboy seeding method for inter-seeding cover crops in standing corn and soybeans.

#### *2) Michigan Upper Peninsula cover crop/IPM meetings and listening sessions*

The cover crop IPM educator collaborated with an MSUE crop production educator to conduct four evening cover crop educational meetings at four locations in Michigan's remote Upper Peninsula. The purpose of the meetings was to update farmers on cover crop use in Michigan, provide access to tools used to select and manage cover crops and begin discussions on appropriate uses for cover crops in the Upper Peninsula agricultural systems and growing environment. Each participant received a complimentary copy of the Midwest Cover Crops pocket field guide, second edition. Efforts are underway for 2015 to explore and evaluate cover crops in Upper Peninsula forage systems. On-farm demonstrations and field days will provide farmers another opportunity to consider these potentially valuable tools and techniques.

### 3) *Online collaborations and social media promote IPM within plant agriculture news*

We continue to oversee production of plant agriculture educational news for MSU Extension. We have 15,846 subscriptions to the email lists for those interested in plant agriculture and gardening (note: some people are on multiple lists). Several of the top 2014 IPM articles we edited and the number of page views received are:

- 3,941 New tip sheets on smart tree selections for communities and landowners (July 2)
- 2,587 Tomato late blight pressure is high (August 22)
- 2,091 Home lawn grub control products in Michigan for 2014 (April 23)
- 1,717 Downy mildew watch: Fungicides recommended for cucumber disease control (July 2)
- 1,393 Common questions and answers about tobacco mosaic virus (April 11)

IPM topics are promoted with several Twitter accounts with more than 6,000 followers

### **IMPACTS**

**1) The MSU IPM Program includes programming for promoting cover crops as a key part of weed and other pest management strategies. A major cover crop survey was conducted by the NCR Sustainable Agriculture Research and Education (SARE) program and the Conservation Technology Information Center in 2014 for the 2013 crop season. A member of the MSU IPM Program was part of the survey management. Of cover crop users in the survey, **28.1% listed controls weeds as a benefit they sought from cover crops**. The cover crop benefits of reduces disease (1.6%) and controls insects (1.5%) were selected at low percentages by survey respondents, indicating areas for increased research and education. Fifty-four Michigan farmers responded to the survey and indicated they increased their cover crop acres from 4,215 to 8,254 acres between 2009 and 2014, **an increase of 95.8%**. For the same period in the Michigan survey, each cover crop user on average increased cover crop acres by 55.9%. **Michigan farmers reported average increases in corn yield of 12.9 bushels per acre and soybean yield of 9.5 bushels per acre when cover crops were used. For this small segment of field crop growers, using an average price of \$4.00/bu for corn and \$10.00/bu for soybeans, we estimate this represents a total increase in income of \$290,823. We also believe these positive increases in cover crop adoption can lead to reductions in herbicide and pesticide use.****

**2) The IPM Program led organization of cross-commodity IPM Academies in 2013 and 2014 by leveraging IPM Extension funds with a grant from NCR-SARE. The academies were two-day events in East Lansing, Michigan. IPM Academy attendees were surveyed at the conference and via email post-conference. In 2014, a total of 14 of the 109 attendees responded to the post-survey. Over the last six months, the following percentages of participants indicated they adopted or expanded their use of the following IPM strategies or resources based on their experiences at the IPM Academy:**

- Scouted for insects and/or diseases (n=9) 82%
- Scouted for beneficial insects (n=4) 36%
- Increased their ability to identify pests, disease and/or beneficial insects (n=7) 64%
- Referenced weather modeling to make management decisions (n=5) 46%
- Only treated for pests when the economic threshold was reached (n=3) 27%
- Supported beneficial insect habitat to promote pest control via natural enemies (n=5) 46%
- Selected pest resistant plant varieties or cultivars (n=2) 18%
- Eliminated or reduced pesticide applications (n=3) 27%
- Improved sanitation practices (n=2) 18%
- Utilized the least biologically disruptive pesticides when treatment was needed (n=5) 45%

- Actively protected native pollinators (n=7) 64%
- Subscribed to an MSUE News Digest or visited the MSUE website (n=4) 36%
- Purchased or referenced MSUE publications (n=4) 36%

Additionally, 12.5% applied for a new job (n=1), 38% improved their position at an existing job (n=3), and 75% improved the financial viability of an existing business (n=6) based on the resources presented at the Academy. One respondent commented that collaborating with other growers gave them ideas on how to improve or change IPM practices on their farm. Another responded that having an open discussion about adapting current practices was valuable to changing their practices.

Some IPM Academy presentations were developed into an online IPM Academy that is available online ([http://www.ipm.msu.edu/agriculture/integrated\\_pest\\_management\\_academy](http://www.ipm.msu.edu/agriculture/integrated_pest_management_academy))

Between October 2013 and August 2014, there were 1,663 webinar sessions viewed by at least 439 unique visitors. These viewers reported an acreage impact of 1,207,931 acres. Approximately 50% responded to the post-seminar survey and 82% reported they will increase their adoption of IPM.