

## THANK YOU

Thank you to the attendees and supporters of the 2015 Southeast Farm Market Bus Tour for joining us on our educational tour in the Greater Savannah region. We had one bus, filled with attendees from across the country, who enjoyed countless networking opportunities while exploring new agritourism and farm marketing ideas.

Thank you to our host markets for opening your doors and sharing your experiences and innovations with us: Coastal Georgia Botanical Gardens, Hunter Cattle Co., Meinhardt Vineyard & Winery, Ottawa Farms, Vidalia Valley.

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# Attracting bees to farms a good insurance policy



Photo: Michigan State University Wild bees on farms can create an economic advantage for blueberry growers.

By Layne Cameron Michigan State University

Investing in habitat that attracts and supports wild bees in farms is not only an effective approach to helping enhance crop pollination, but it can also pay for itself in four years or less, according to Michigan State University research.

The paper, published in the Journal of Applied Ecology, gives farmers of pollination-dependent crops tangible results to convert marginal acreage to fields of wildflowers, said Rufus Isaacs, MSU entomologist and coauthor of the paper.

"Other studies have demonstrated that creating flowering habitat will attract wild bees, and a few have shown that this can increase yields," he said. "This is the first paper that demonstrates an economic advantage. This gives us a strong argument to present to farmers that this method works, and it puts money back in their pockets."

As part of the study, marginal lands surrounding productive blueberry fields were planted with a mix of 15 native perennial wildflowers. The fields were pollinated by honeybees, but Isaacs and Brett Blaauw, an MSU graduate student, were interested in whether increasing the wild bee population would improve pollination in nearby crop fields. The results weren't immediate, which implies that landowners would need to be patient, Isaacs said.

"In the first two years as the plantings established, we found little to no increase in the number of wild bees," he said. "After that, though, the number of wild bees was twice as high as those found in our control fields that had no habitat improvements."

Once the wild bees were more abundant, more flowers turned into blueberries, and the blueberries had more seeds and were larger. Based on the results, a 2-acre field planted with wildflowers adjacent to a 10-acre field of blueberries boosted yields by 10-20 percent. This translated into more revenue from the field, which can recoup the money from planting wildflowers.

With 420 species of wild bees in Michigan alone, it makes sense to attract as many free pollinators as possible. However, this doesn't mean that this approach would replace honeybees, which are trucked in via beekeepers and pollinate crops valued at \$14 billion nationwide, Isaacs said.

"Honeybees do a great job of pollinating blueberries, and we're not suggesting that growers stop using them," he said. "But, our research shows that adding some wild bee habitat to the farm can increase bee abundance in the nearby crop, can be profitable and is an insurance policy to make sure there is good pollination each year."

Establishing habitat for wild bees requires an initial investment, but there are existing federal and statewide programs, such as the USDA's Conservation Reserve Program and Michigan's State Acres for Wildlife Enhancement, to help pay for this.

In such cases, growers could see their return on investment even quicker.

Blaauw was the lead author on the paper and is now at Rutgers University. Isaacs' research is funded by

USDA and MSU's AgBioResearch. FGN

## Pollinator conservation tactics seen for organic fruit

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- Emily May,

Michigan State University

By Gary Pullano Assistant Editor

There are many easily adopted practices to support pollinators on the farm.

Emily May, a graduate student in Michigan State University's (MSU) Department of Entomology, made a presentation at the Great Lakes Fruit, Vegetable and Farm Market EXPO that focused on pollinator conservation tactics for organic fruit production.

"Why conserve pollinators?" May asked her audience. "Many fruit and vegetable crops grown in the Great Lakes region are dependent on insect pollinators, especially the highly efficient bee pollinators, to set seed and/or fruit."

She said crops that are highly dependent on pollinators for economical yields include apple, cherry, pear, cranberry, blueberry, blackberry, greenhouse tomatoes, pumpkin, melon and squash, among others.

"Without complete pollination, many of these plants produce small or deformed fruits," May said. "While honeybees are often brought in to supplement pollination in these crops, many farms in the Great Lakes region have a diverse and abundant wild pollinator community that can help achieve full pollination." May outlined conservation strategies growers should pursue. They include: **Ensuring access to flowering resources throughout the season.** Bees and other wild pollinators require sources of nectar and pollen to maintain their energy while moving among flowers and to feed their developing offspring.

"With intensive weed management in

agricultural landscapes, these

resources can be limited during the growing season," May said.

When possible, limit mowing to allow flowering species to reach maturity in field margins and other spaces on farm. Plant bee-friendly wildflow.

bee-friendly wildflowers in strips or meadows around the farm. "These types of plantings have been

shown to increase yields of nearby pollinator-dependent crops such as blueberry," she said.

Providing additional nesting materials for aboveground bees.

While most bees nest in soil and have nesting requirements that are either unknown or difficult to supplement, some bees nest in twigs and other hollow cavities or tunnels aboveground, such as beetle tracks in standing dead wood.

"These nesting resources are often limited in managed landscapes, and it's easy to supplement these nesting materials and build up populations

"While honeybees are often of these types of brought in to supplement bees on-farm,"

May said. Leave old trees or logs in place in woods next to crop fields (as opposed to removing them). Other nesting

materials options include wood blocks

with narrow, deep holes drilled into them or bamboo, paper or cardboard tubes designed for mason and leafcutter bees.

**Reducing exposure to bee-toxic pesticides.** Bees and other pollinators will actively forage on many crops during their bloom periods. "It is important to follow label directions intended to protect pollinators during this critical period," May said. "Later in the season, it is important to minimize risk to bees on farm if more toxic products – such as pyrethrins, rotenone or spinosad – are required for pest management."

May said it's not advisable to apply bee-toxic pesticides if bees are actively visiting crop flowers.

"If applications are needed during bloom, the best time to apply is in the late evening, when bees are no longer foraging," she said. "Take the necessary steps to reduce spray drift, particularly onto open flowers in adjacent fields or field margins."

After bloom, May said, keep bees out of the crop field, orchards and vineyards by mowing down open flowers in row middles.

She stressed using caution when applying bee-toxic chemistries.

May urged growers to visit an MSU website, www.nativeplants.msu.edu, to find regional plant lists that give sun and moisture requirements as well as a key to the types of beneficial insects that each plant attracts.

"These lists are a good place to look when developing a site-specific plant list for pollinator habitat restoration," May said. **FGN** 



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