

Hogs may benefit orchard

By JENNIFER VINCENT

REMEMBER when every farm had a cross section of animals and raised multiple crops? Today's modern, high-production farm industry has become largely a monoculture because diversity is not feasible or economical. But, is there a place for it in the organic sector?

Flushing apple grower Jim Koan is teaming up with David Epstein, an Integrated Pest Management tree fruit specialist with Michigan State University, to see if an organic system would benefit from bringing animals back into plant agriculture. "We want to see where they fit and if they can help each other out," Epstein says.

To test that question, Koan is rotational grazing hogs in his orchard to potentially control pests and disease, improve soils, and raise organic hogs fed out on apples.

The fact-finding research is being conducted through a one-year grant from USDA for Integrated Organics. "In the first year, we have some basic scientific questions we want to answer. The results of this baseline data will determine if we apply for a three-year grant [project] in December," Epstein says.

Controlling disease and pests

Through various management practices and intense scouting, Koan is able to reasonably control most all apple insects, except plum curculio, which is particularly resilient. No pheromones or reliable monitoring methods exist for this insect. Also, the pest has no natural predators — that is, unless the hogs can fill that void.

The female plum curculio is capable of laying between 100 to 500 eggs. The young larvae bore to the center of the fruit, where they feed until reaching maturity. Many infested fruits drop to the ground in June. After about 16 days, full-grown larvae leave the fruit and enter the soil. The adults emerge from the soil in late summer and feed on maturing apples until cold weather forces them into hibernation.

"What we want to do is disrupt the cycle," explains Epstein. "Particularly if we can introduce the hogs at the time when the infested apples have dropped to the ground and before the larvae enter the soil. When the hogs consume those apples, it could break the cycle for many of the curculio — theoretically."

Other MSU researchers are working to develop a model that predicts from



HOG TIRED: Jim Koan is experimenting with hogs in the orchard, using them to clean up dropped apples and for rooting around the trees.

Key Points

- Using hogs in orchards may help reduce pest and disease infestation.
- Hogs root and allow apple trees to take up more nitrogen and carbon.
- Hogs eating apples may produce more desirable pork.

the time the egg was laid, how many growing degree days it would take before the larvae leaves the apple — giving growers a better window to introduce the hogs.

This year's research, Epstein says, will supply the answers to these questions: Does the worm survive the hog's digestive tract? How many apples will they eat? How many hogs per acre and what size should the hogs be?

Koan says every female curculio taken out of the orchard could mean an additional yield of 2 to 4 bushels of apples. "Even if it interrupts 25% of the female population, that's tremendous," he says.

Koan is using Berkshire hogs, which are an old-fashioned breed, that he says are more suited to pasture raising and are better moms. The hogs would be in the orchard only when apples begin dropping because of plum curculio and in the fall after harvest.

Michigan has a Generally Accepted Agricultural Management Practice that says producers should not use dropped apples for human consumption. By grazing hogs in the orchard after harvest, they clean up the waste and could potentially decrease another hard-to-fight problem for organic growers — apple scab. "Scab overwinters on leaf litter on the orchard floor," he explains. The hogs could potentially reduce that occurrence.



Years ago, Koan says, apple orchards always had sheep and hogs to eat the wormy apples that drop. "It may be a matter of using what our ancestors knew with the new technologies and information we have today to produce a system that benefits organic agriculture in many ways."

Piglets improve soil with rooting

There's another topic in question that wasn't originally considered, but is another potential benefit to having hogs in the orchard: Is their rooting helpful and how much is helpful?

Koan has 27 piglets, three sows and one boar in the orchard that he is pasturing for the first time this year.

Turns out the little guys are supplying, on initial inspection, very productive rooting, which mimics a horticulture system called the Swiss sandwich system. Koan says it's a challenge to get enough nitrogen to apple trees.

"This allows the trees to better utilize carbon and nitrogen," Epstein says.

One interesting observation was that the pigs did not root on the drive lanes between the trees, only under the trees. "That's because of the compaction there," Koan says. "That's exactly what we want. In just one day, they did a pretty good job of turning up the ground, but not killing everything. My feeling is that the adults may be rooting too deep, but the piglets are doing a good job. We'll have to see."

Nutritional component for hogs

One last potential benefit for grazing hogs in orchards is the hogs themselves. Apple-fed hogs would be ready for slaughter around holiday season. "We're looking at the demographics of organic meat, and hogs reared in a rotational system," Epstein explains. "Does it taste better? Is it a value-added opportunity and could it generate a premium price? It may give producers an alternative source of income."

Koan says feeding hogs a high-carbohydrate diet of apples may put on a lot of fat before butchering and produce more desirable pork.

News Briefs

Web site focuses on heating with corn

The Corn Marketing Program of Michigan and Michigan Corn Growers Association recently launched a new section on the Michigan Corn Web site, focused specifically on heating with corn. The site has been designed to provide the information consumers need regarding the corn heating industry. To access the site, visit www.micorn.org and click on the "Heating with corn" link. The site includes the economics and benefits of using corn heat, where to purchase units, questions to ask before making a purchase and grant opportunities, as well as places to purchase corn specifically for corn heating units.

GreenStone elects new board members

GreenStone Farm Credit Services elected new members to its board of directors. For Region 1 (Michigan), incumbents Lynn D. Gould, Clare County, and Gilbert Ritter, Saginaw County, were re-elected for three-year terms. Gould, a three-year board member, rotational grazes 500 head of stock cattle and custom-feeds 300 head in addition to owning and operating a bed-and-breakfast. Ritter, owner and operator of a cash-crop farm growing 800 acres of wheat, corn and soybeans, is a 16-year board member. In Region 2, incumbent David McConnachie, Sanilac County, was re-elected to a three-year term, while Scott Roggenbuck, Huron County, was newly elected to the GreenStone FCS board of directors for a three-year term. McConnachie, a nine-year board member, is in a partnership on a 3,300-acre cash-crop farm producing sugarbeets, corn, wheat, dry beans and soybeans. Roggenbuck farms in a cash-crop operation, custom-harvests 1,000 acres, finish-feeds 500 head of steers and operates a Pioneer seed agency.

Grape industry unites to study health benefits

Under the auspices of the National Grape and Wine Initiative, scientific experts representing the table grape, juice, raisin and wine sectors gathered together to develop strategies for expanding the research on and increasing awareness of the health benefits of grapes and grape products among consumers and health advisers. A number of strategies for accomplishing this goal were outlined. One such initiative may involve showcasing the current science on grapes and grape products through a scientific symposium. Research will focus on improving product quality, exploring and promoting the health benefits of grapes and grape products, enhancing technologies for improved vineyard and production systems, improving environmentally friendly and sustainable farming and processing practices, and ensuring industry member awareness of and access to grape and grape product research findings.