

Research Progress and Impact

SAFEGUARDING THE SUPPLY OF SPECIALTY CROPS FOR CONSUMERS

January 2005

Summary of Research Accomplishments

- Identified a sugar beet variety that shows natural resistance to crown and root rot disease, a major problem for Michigan beet growers.
- Released a new high-yielding, small red bean variety that will require fewer pesticides and be cheaper to harvest.
- Increased use of environmentally-friendly controls of insect pests that infect Michigan's apple and cherry industries.

Kurt Stepnitz/MSU



Research at MAES facilities near Traverse City and Fennville suggests that traps could provide a pesticide-free way to reduce damage from a common cherry pest. Michigan is the nation's largest supplier of tart cherries, supplying 80 percent of the U.S. market annually.

Kurt Stepnitz/MSU



Michigan is the leading producer of a class of small red beans which includes the new MAES-developed Merlot bean. "Local markets value production in the Midwest due to savings in freight," said Jim Kelly, the MAES crop and soil sciences professor behind the new bean.

Research for your future.

For questions about this or other MAES publications, contact Geoff Koch (kochg@msu.edu; 517-355-0123).

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All USDA projects are peer reviewed.

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For more information →

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SAFEGUARDING THE SUPPLY OF SPECIALTY CROPS FOR CONSUMERS

A team of Michigan Agricultural Experiment Station (MAES) scientists assists growers in producing high quality fruit, dry beans and sugar beets with environmentally responsible, safe and effective pest control methods and management approaches.

RESEARCH ACCOMPLISHMENTS

Identified a sugar beet variety that shows natural resistance to crown and root rot disease, a major problem for Michigan beet growers.

The variety proved successful in growth chamber, greenhouse and field tests. It's the first time seedling resistance has been described. Breeding natural resistance into Michigan sugar beet crops may eventually allow growers to save \$15 per acre in pesticide costs each year. With 160,000 acres devoted to sugar beets in Michigan, the fourth largest producer of beets in the United States, the potential savings amounts to \$800,000 annually.

Released a new high-yielding, small red bean variety that will require fewer pesticides and be cheaper to harvest.

In the last three years, Michigan has emerged as the leading producer of small red beans. In 2004, 15,000 acres of small red beans earned Michigan farmers \$6.26 million. Also last year, scientists at MAES and the USDA Agricultural Research Service released Merlot, a new high-yielding small red bean variety. Merlot's upright growth habit makes it less expensive to harvest and its natural virus and rust resistance will save growers in pesticide costs.

Doug Wilson/USDA



One way to fight codling moth, a key apple pest, is to disrupt moth mating by spraying an environmentally-safe chemical that makes it difficult for male and female moths to find each other. MAES training and publications helped Michigan apple producers to quadruple their use of this technique, increasing growers' revenue by \$400,000 statewide. Here, a codling moth larva feeds in the center of the fruit on the flesh and seeds.

Increased use of environmentally-friendly controls of insect pests that plague Michigan's apple and cherry industries.

- MAES training and publications helped Michigan apple producers to quadruple their use of a novel technique to control the codling moth, a key apple pest. The technique involves spraying a chemical that interferes with moth mating. The spray doesn't leave any toxic residues on the fruit and doesn't hurt other natural enemies of the moth, such as birds. Use of the novel technique reduced fruit injury and provided increased revenues of \$20 to \$100 per acre, or \$400,000 statewide.

- MAES refined new insect-trapping technologies that might someday be used to protect Michigan's cherry crop. Traps provide an alternative to traditional insecticides, many of which have been significantly curtailed or phased out as a result of the 1996 Food Quality Protection Act (FQPA). Using traps on even half of Michigan's cherry acreage — the state supplies roughly 80 percent of the U.S. market for tart cherries — could save the industry as much as \$700,000 per growing season.

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