

Great Lakes Fruit, Vegetable & Farm Market EXPO

December 5-7, 2006

DeVos Place Convention Center, Grand Rapids, MI



Pickling Cucumber

Tuesday morning 9:00 am

Where: Grand Gallery (lower level) Room A-B

Recertification credits: 1 (1A, 1B, Comm CORE, Priv CORE)

CCA Credits: PM(1.0) CM(0.5)

Moderator: William Chase, Horticulture Dept., MSU

9:00 a.m. Downy Mildew Problems and Solutions

Mary Hausbeck, Plant Pathology Dept., MSU

9:40 a.m. Living with Downy Mildew on the Delmarva Peninsula.

James R. Adkins, University of Delaware

9:55 a.m. Pickle Weed Control

Bernard Zandstra, Horticulture Dept., MSU

10:15 a.m. Comparison of Mechanical Pickle Harvesters

James R. Adkins, University of Delaware

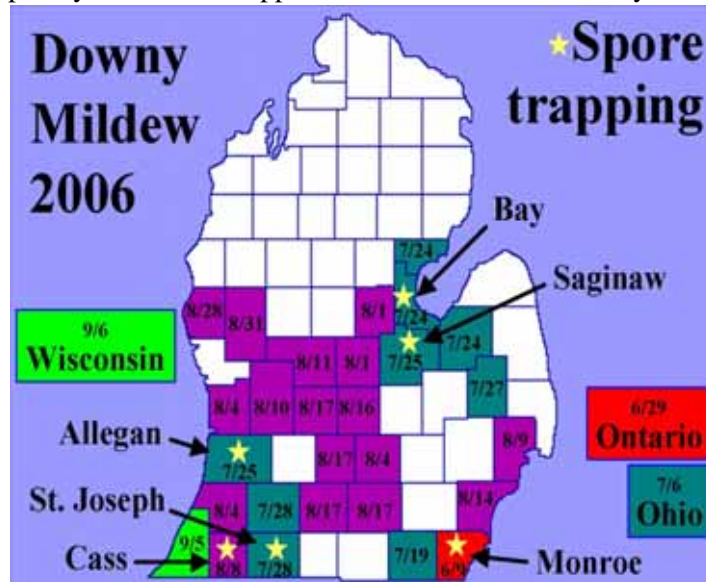
10:45 a.m. Grower Experiences with Pickle Harvesters

Patrick Kenny, Kenny Inc., Hemlock, MI
Don Swanson, Swanson Pickle Co., Ravenna, MI
Richard Sylvester, Fairgrove, MI

Downy Mildew Problems and Solutions

Dr. Mary K. Hausbeck (517-355-4534), Brian Cortright, and Stevie Glaspie
Michigan State University, Department of Plant Pathology

In August 2005, Michigan cucumber growers experienced a downy mildew outbreak for the first time in recent history. In 2006, downy mildew was detected in a southeastern Michigan cucumber field in early June. Downy mildew causes symptoms on the leaves similar to a mosaic or angular leaf spot. The tell-tale symptom of downy mildew is the dark, purplish/gray fuzz on the underside of the leaf giving a somewhat “dirty” or “velvet” appearance. This fuzz may be most evident in the morning. The downy mildew pathogen moves from field to field primarily via air currents. Downy mildew is well-known for causing catastrophic losses in a brief period of time. When the conditions are favorable, unprotected foliage can become completely infected and appear to be frosted within 10 days of initial infection.



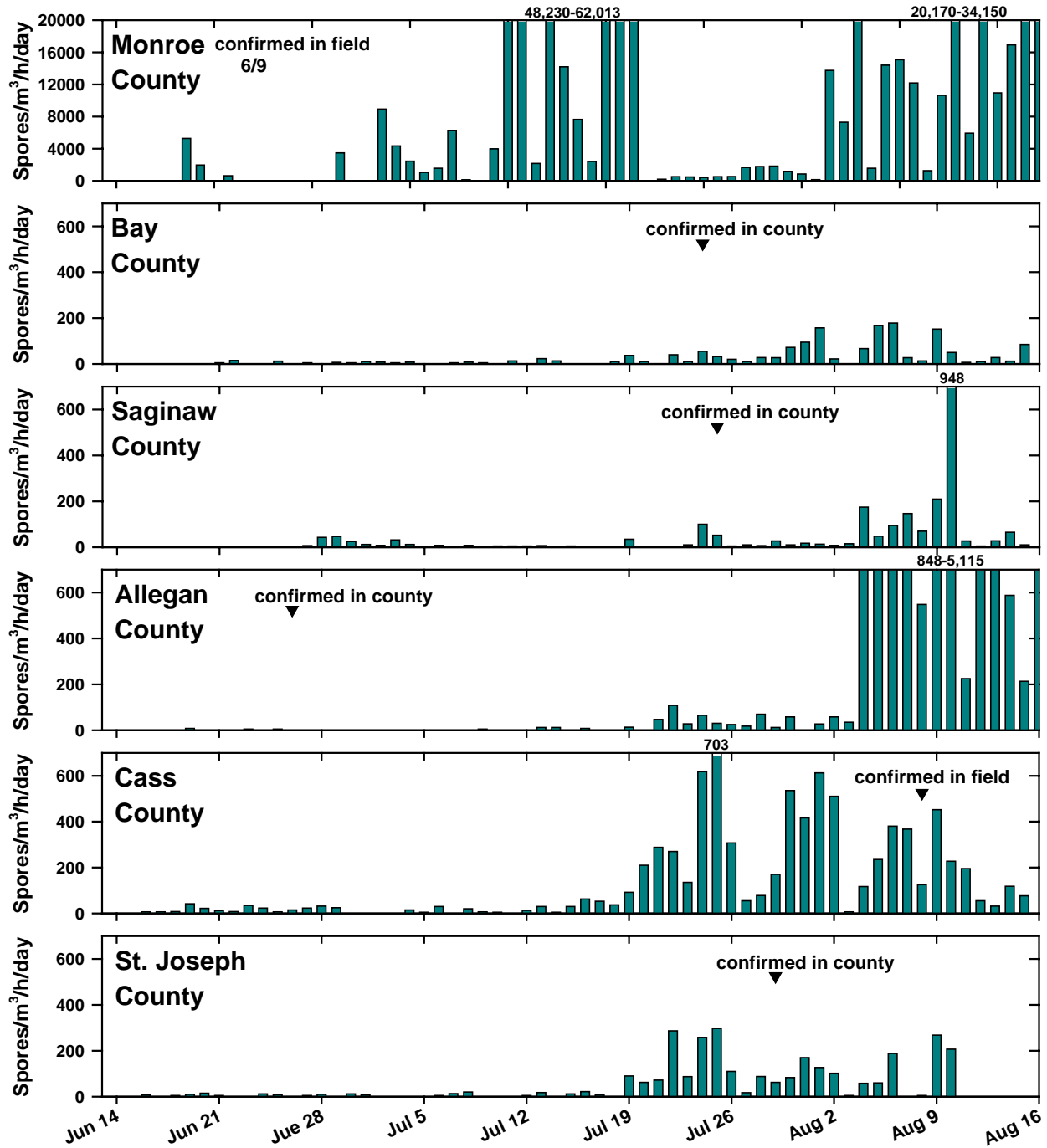
Occurrence of downy mildew in the Great Lakes region.
Stars designate sites of spore trapping.

Table 1. Recommended products for managing downy mildew on pickle.

| APPLIED BEFORE DISEASE (7-day intervals) | APPLIED AFTER DISEASE (5-day intervals) |
|---|--|
| <ul style="list-style-type: none"> • Gavel 75WG (5 day PHI) • Previcur Flex 6SC (2 day PHI) • Ranman 3.6SC (0 day PHI) • Tanos 50WG (3 day PHI) | <ul style="list-style-type: none"> • Previcur Flex 6SC (2 day PHI) • Ranman 3.6SC (0 day PHI) • Tanos 50WG (3 day PHI) |
| Alternate products and mix each with either: <ul style="list-style-type: none"> • Dithane (mancozeb) 3 lb or • Bravo (chlorothalonil) 1.5 pt | Alternate products and mix each with either: <ul style="list-style-type: none"> • Dithane (mancozeb) 3 lb or • Bravo (chlorothalonil) 2 pt |

Downy Mildew Spore Trapping 2006

The downy mildew reproduces via tiny, microscopic spores that act as seeds of the pathogen. Spore traps were placed in one of the diseased cucumber fields and also in four other Michigan counties. A compound microscope is needed to have enough magnification to identify any downy mildew spores that may be present on the tapes. The spore traps helped to alert us to any influx of spores into those production regions, but were not used to time fungicide sprays. Since we did not have a trap in each field, it is possible that we could miss an isolated spore mass coming into a particular region (see figure, below).



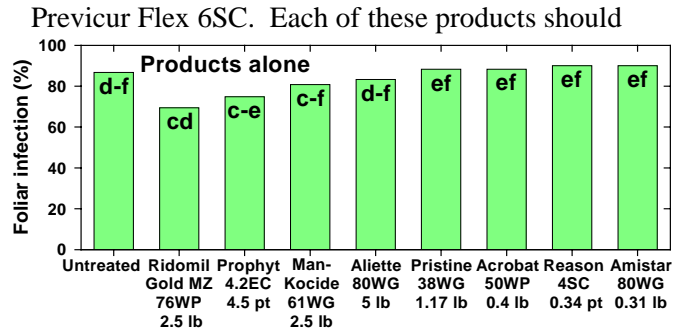
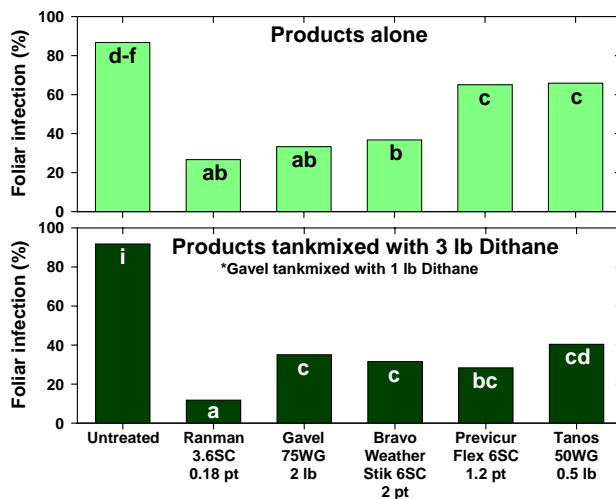
Fungicide Trials

Chemical control must be focused on using the most effective products, alternating the products, and applying fungicides at short intervals. Results from our downy mildew research in 2005 indicate that an effective spray program includes the following: Previcur Flex (propamocarb hydrochloride) plus Bravo (chlorothalonil) alternated with Tanos 50DF (cymoxanil + famoxadone) plus mancozeb.

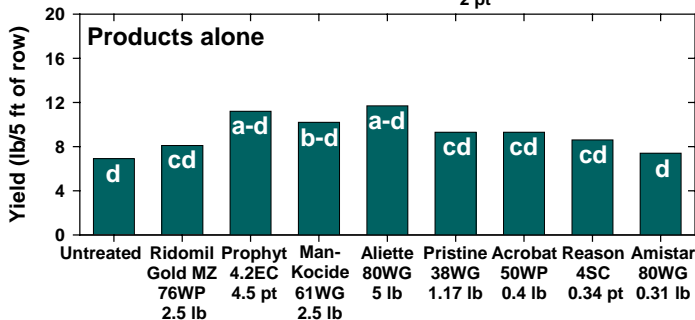
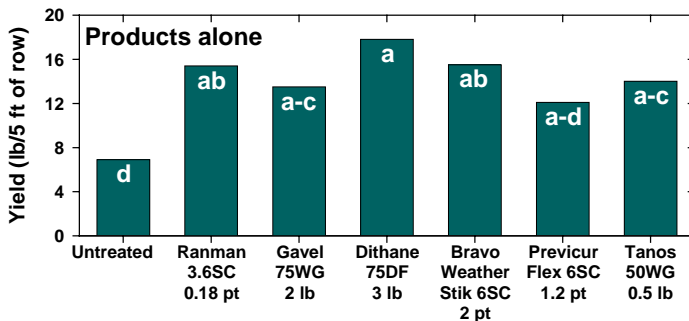
The initial sprays for the 2006 trials were applied when plants had one true leaf and no disease symptoms were apparent. Ten applications were made on 1, 7, 11, 15, 21, 26, and 31 Aug; 6, 13, and 20 Sep following a 5-7 day spray schedule. Plots were visually evaluated for necrotic leaves on 11 Sep (see figure, below). Fruits were hand-harvested four times from the entire 15 ft of all treatment rows on 5, 11, 18, and 25 Sep. Products that looked favorable in our 2006 field studies include Ranman 3.6SC (cyazofamid), Gavel 75WG (mancozeb + zoxamide), V-10161 4FL (fluopicolide), Tanos 50WG and

Downy Mildew 'Eureka' Pickle Sprayed Before Disease

Rates/A applied at 5- to 7-day intervals. Bars with a letter in common are not significantly different.



be mixed with either Dithane or Bravo (see Table 1).



What's New?

