

Great Lakes Fruit, Vegetable & Farm Market EXPO

December 4-6, 2007

DeVo Place Convention Center, Grand Rapids, MI



Pickling Cucumber

Tuesday morning 9:00 am

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

Recertification credits: 1 (1B, PRIV CORE)

CCA Credits: PM(1.5) CM(0.5)

Moderator: Bernard Zandstra, Horticulture Dept., MSU

9:00 a.m. Cucumber Weed Control on the Delmarva Peninsula

- Mark Van Gessel, Plant Science Dept., Univ. of Delaware

9:30 a.m. Honey Bee Colony Collapse and Potential Replacement Pollinators for Cucumbers

- Julianna Tuell, Entomology Dept., MSU

10:00 a.m. Breeding for Resistance to Downy Mildew and Phytophthora Rots in Cucumber

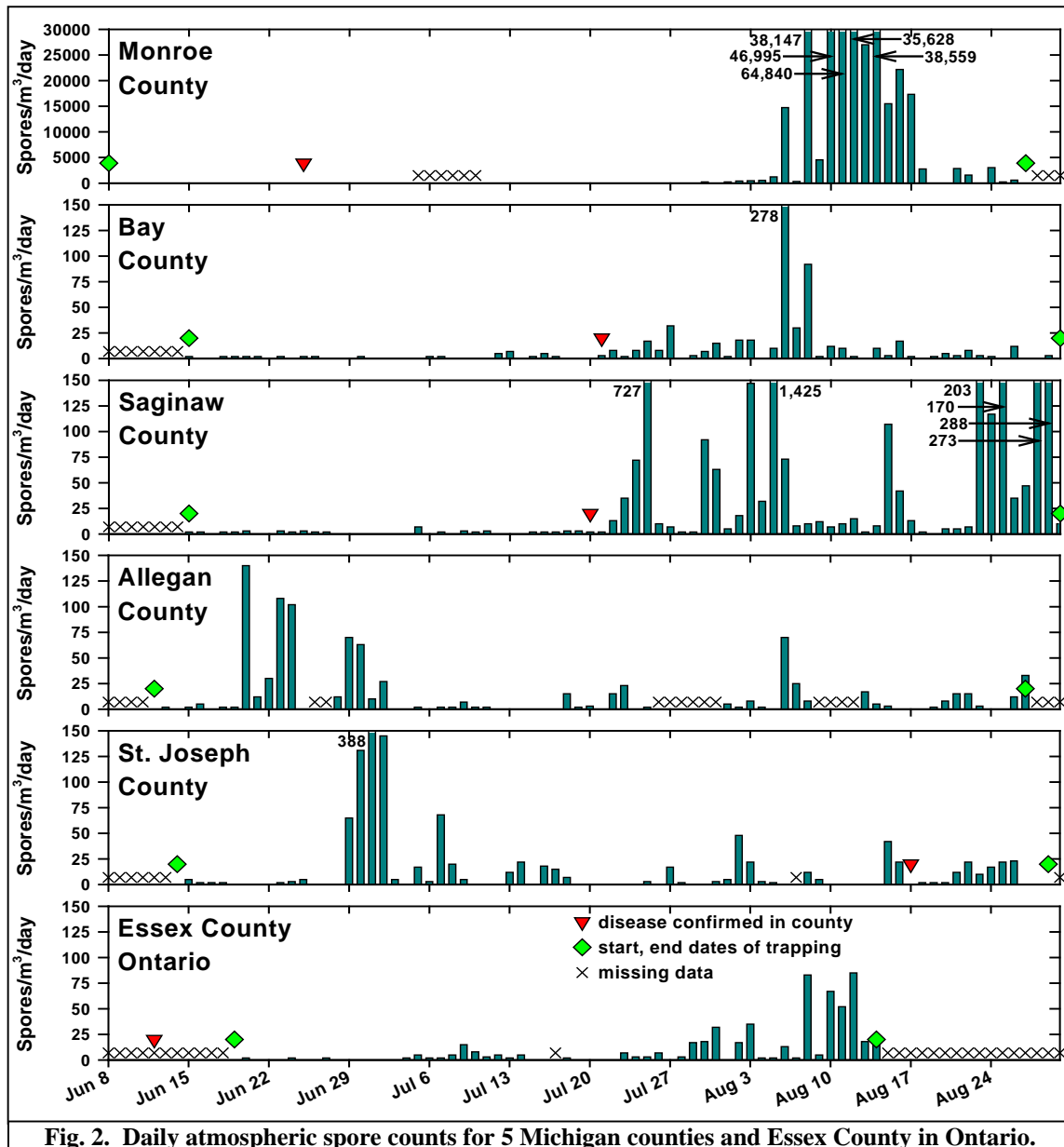
- Rebecca Grumet, Horticulture Dept., MSU

10:30 a.m. The Downy Mildew Situation in Michigan

- Mary Hausbeck, Plant Pathology Dept., MSU

Downy Mildew Spore Trapping 2007

The downy mildew reproduces via tiny, microscopic spores that act as seeds of the pathogen. Spore traps were placed in five Michigan counties spread across the state and Essex County in Ontario (Fig. 1). 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 (Fig. 2).



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 past research trials indicate that an effective spray program includes the following: Previcur Flex (propamocarb

hypochloride) plus Bravo (chlorothalonil) alternated with Tanos 50DF (cymoxanil + famoxadone) plus mancozeb. Presidio is a new product that will be registered soon and is highly effective against downy mildew. All fungicides, including Presidio, should be used in a tank mix with another fungicide effective against downy mildew.

Table 1. Results of downy mildew field trial.

Treatment and rate/A, <i>applied at 5-7 day intervals, unless otherwise specified</i>	Infection (%)*	
	5 Sep	
Untreated.....	98.8	f
Previcur Flex 6SC 1.2 pt + Bravo Weather Stik 6SC 2 pt <i>alternate</i> Tanos 50WG 8 oz + Manzate 75DF 3 lb.....	11.3	a
Bravo Weather Stik 6SC 3 pt.....	46.3	b-e
Equus 720 SST 6SC 3 pt.....	28.8	a-d
Equus 82.5WDG 2.73 lb.....	53.8	c-e
Previcur Flex 6SC 1.2 pt + Bravo Weather Stik 6SC 2 pt, <i>app 1,4,7</i> Ranman 3.6SC 2.7 fl oz + Manzate 75DF 3 lb, <i>app 2-3,5-6,8-9</i>	13.8	a
Revus 2.09SC 8 fl oz + Dithane Rainshield 4SC 4 pt + NIS 8.33EC 8 fl oz <i>alternate</i> Quadris Opti 5.5SC 3.2 pt.....	27.5	a-d
Revus 2.09SC 8 fl oz + Dithane Rainshield 4SC 4 pt + NIS 8.33EC 8 fl oz <i>alternate</i> Previcur Flex 6SC 1.2 pt + Dithane Rainshield 4SC 4 pt.....	26.3	a-c
Revus Opti 3.67SC 3 pt + NIS 8.33EC 8 fl oz <i>alternate</i> Previcur Flex 6SC 1.2 pt + Dithane Rainshield 4SC 4 pt.....	33.8	a-d
Ridomil Gold Bravo 3.67SC 2.5 pt, <i>app 1</i> , Revus 2.09SC 8 fl oz + NIS 8.33EC 8 fl oz, <i>app 2,4,6</i> , Quadris Opti 5.5SC 3.2 pt, <i>app 3,5,7</i>	57.5	de
Curzate 60DF 3.2 oz + Manzate 75DF 3 lb.....	31.3	a-d
Curzate 60DF 5 oz + Manzate 75DF 3 lb.....	31.3	a-d
Tanos 50DF 8 oz + Manzate 75DF 3 lb <i>alternate</i> Curzate 60DF 3.2 oz + Manzate 75DF 3 lb.....	33.8	a-d
Tanos 50DF 8 oz + Manzate 75DF 3 lb <i>alternate</i> Curzate 60DF 5 oz + Manzate 75DF 3 lb.....	22.5	ab
Manzate 75DF 3 lb.....	72.5	ef
Ridomil Gold MZ 76WP 2.5 lb.....	75.0	ef
Presidio 4FL 2.9 fl oz + Manzate 75DF 3 lb.....	16.3	ab

*Based on a visual estimation of percentage of plant affected.

** Column means with a letter in common are not significantly different (Fisher LSD Method; $P=0.05$).

Table 2. 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

This research has been funded by the Fresh Vegetable Growers of Ontario/Canada-Ontario Research and Development Program (Agriculture and Agri-Food Canada and the Ontario Ministry of Agriculture, Food and Rural Affairs), MSU GREEN Project GR07-007, and the Pickle and Pepper Research Committee for MSU/Pickle Packers International, Inc.