



**VegNet Vol. 10, No. 13, July 30, 2003**

**Special Edition**



## **Rust on Sweet Corn**

**Sources: Jerald Pataky, Andrea Campa and Mohammad Babadoost, Department of Crop Sciences, University of Illinois, Urbana-Champaign, IL 61801, j-pataky@uiuc.edu. Report on PLANT DISEASE RPD No. 965. April 1991**

**Common Rust of Sweet Corn. Fact Sheet Page 727.40 Date: 12- 1987. Cooperative Extension New York State. Cornell University. by Helene R. Dillard and Thomas A. Zitter.**

**2003 Commercial Vegetable Recommendations, Pennsylvania**

**1999 Integrated Crop and Pest Management Recommendations for Commercial Vegetable Production. Cornell Cooperative Extension.**

**Common rust is present on several sweet corn plantings in central OH.**

**Symptoms are circular to elongate (usually 0.2 to 2 mm long), golden or reddish brown to cinnamon brown pustules that appear on the upper and lower leaf surfaces, and less frequently on other above-ground plant parts. Most of the infection is found on the upper leaf surface and may occur in bands. The pustules break through the epidermis early in their development and become powdery as spores are produced.**

**Common corn rust becomes a problem under ideal environmental conditions which include cool temperatures of 65+ to 75+F (18.3+ to 23.8+C), abundant moisture in the form of light rains or heavy dews, and high humidity (98 to 100 percent). Optimum temperature for spore germination is approximately 50+ to 85+F (10+ to 28.5+C). An average time from infection to the production of a new generation of mature spores is 7 to 8 days.**

**Common rust reduces yield of sweet corn about 0.6% for each 1% leaf area infected. Variety resistance is the most effective and efficient method to control rust and should be used for late season plantings; however when resistance is not adequate, severe infection can be prevented by applying fungicides.**

**When hybrids with moderate to susceptible reactions to rust were grown in wet, cool environments that favored disease development, one or two well-timed applications before rust is severe provide better control than multiple applications after rust is severe. Early application of fungicides also prevents the production of large amounts secondary inocula. Early-planted sweet corn can be scouted as an indicator of increasing rust populations. If significant amounts of rust are observed at harvest of early-planted crops, later-planted crops may be at risk.**

**Scouting fields for rust provides information that will assist in determining whether or not to apply fungicides. Timing of the first fungicide application is critical because it needs to be applied early enough to reduce the rate of epidemic development. In susceptible varieties, or when conditions are extremely favorable for development of an epidemic, foliar fungicide applications may be feasible starting when pustules first appear on the leaves. The mid-Atlantic states recommend that sweet corn warrants spraying if infection occurs prior to the whorl stage. NY research shows that for best results, all fungicide applications should be made prior to tassel. Observe fields on a regular basis. See page 225 of the 2003 OH Vegetable Production Guide for recommended fungicides.**



## **Sweet corn pests**

**Celeste Welty**

**First this will be a brief review about the general principles of worm management on sweet corn, then an update on this week's worm happenings.**

**The worm situation on sweet corn changes throughout the summer. Sweet corn kernels are a favorite food of three caterpillar pests: corn earworm, European corn borer, and fall armyworm. General trends seen most years are that the earliest corn plantings have a lot of worm trouble due to first-generation European corn borer, then corn harvested in mid-season has few worm problems, then late-season corn has extreme worm problems due to second generation European corn borer along with corn earworm and fall armyworm. The worm situation can be different from farm to farm, although similar trends are usually found within several regions of Ohio.**

**For any planting, the most critical decision time for worm control is during early silking, and worm**

control remains important until harvest, which is about 3 weeks after early silking. The best warning system we have for worms is to keep track of the activity patterns of the adult forms, which are moths. The moths can be monitored using a pheromone trap that is attractive to one species each. Traps are particularly useful for corn earworm moths, which can migrate into Ohio at any time and are otherwise hard to predict. When we see an increase in the number of moths trapped, this is the signal that eggs are being laid, and eggs will hatch into larvae that will rapidly infest the ears. If no moths are detected during early silking, then the corn does not need to be protected by insecticide spray. If moths are detected during silking, then sprays are needed if worms are to be prevented from infesting ears. A spray program used successfully by many Ohio growers is to base the intensity of the spray schedule on the number of corn earworm moths caught, with sprays every 5-7 days when trap catch is low, or every 2-3 days when trap catches are very high. As silking progresses, moth activity should be checked periodically; a planting might not need any spray during early silking, but if moths arrive a week later, then sprays can be required during late silking.

Records of the number of moths caught weekly in pheromone traps for several Ohio locations are now posted on the Web at: <http://ohioline.osu.edu/~ipm/traps/03vegrpt.htm> Guidelines for choosing a spray schedule based on trap counts are found in the sweet corn chapter of the Ohio Vegetable Production Guide (on-line version at [http://ohioline.osu.edu/b672/sweet\\_corn.html](http://ohioline.osu.edu/b672/sweet_corn.html))

During the past two weeks, corn earworm moths counts in pheromone traps have been variable from site to site. In southern Ohio, there was a big jump to 49 moths in the Meigs County trap, but there was only 1 moth in the Washington County trap, 2 in Franklin Coounty, 1 in Miami County, 0 in Huron County, 1 in Sandusky County, and 0 in Wood County.

European corn borer is just starting the new flight that will lead to second generation larvae; pheromone trap counts were up to 14 in Meigs County, 7 in Washington County, 3 in Franklin County, 12 in Miami County, 4 in Sandusky County. Blacklight traps also show a slight increase: 4 corn borer moths in Franklin County and 3 corn borer moths in Wood County. These numbers are still very low but are likely to increase during the next few weeks.

Fall armyworm moths continue to be found in traps in Franklin County (6 moths) and Huron County (4 moths) but not in Miami County (0 moths). Fall armyworm larvae usually infest whorls or tassels before they infest ears, so they should be scouted to assess the infestation if traps detect any moths.



## Crop Notes

C. Welty

Microdocium found on pumpkins at the Waterman farm in Columbus. See page 216 of the 2003 OH Vegetable Production Guide.



# The 7 Day Outlook

## R. Precheur

July 30, 2003; On Wednesday, THE HIGH PRESSURE WAS BEGINING TO WEAKEN AND MOVE OFF TO THE EAST. THE NEXT WEATHER SYSTEM WAS JUST MOVING OUT OF SOUTHERN MANITOBA INTO THE DAKOTAS AND MINNESOTA. THIS LOW PRESSURE AREA AND COLD FRONT ARE EXPECTED TO BE SLOW MOVERS. ANOTHER FRONTAL SYSTEM WELL TO THE SOUTH OF THE AREA WILL ALSO FIGURE IN OHIO'S WEATHER OVER THE NEXT COUPLE OF DAYS. DEEP MOISTURE WAS AROUND THE SOUTHERN FRONT AND MAY GET BOOSTED A LITTLE TO THE NORTH STARTING THE THREAT FOR THUNDERSTORMS OVER SOUTHERN OHIO LATE TONIGHT. THE THREAT WILL EXPAND OVER MUCH OF THE STATE ON THURSDAY AND CARRY OVER INTO THURSDAY NIGHT.

BY THAT TIME THE SYSTEM OFF TO OUR NORTHWEST WILL ONLY BE PUSHING INTO THE UPPER GREAT LAKES. THIS SYSTEM ISN'T EXPECTED TO MOVE OVER THE AREA UNTIL LATER IN THE WEEKEND.

TEMPERATURES OVER THE NEXT COUPLE OF DAYS WILL BE FAIRLY CLOSE TO SEASONAL NORMS...POSSIBLE A DEGREE OR TWO ON THE COOLER SIDE. HIGHS WILL BE IN THE LOW AND MID 80S.

### Akron Canton

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	68 76	68 75	68 73	66 72	64 72	65 74
POP 24 hrs	71	67	67	63	48	35

### Cincinnati-

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	71 81	71 79	69 78	69 77	69 78	69 79
POP 24 hrs	38	63	63	51	30	23

### Cleveland

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	70 78	69 76	69 74	68 73	67 74	67 75
POP 24 hrs	68	68	65	62	46	33

### Columbus

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	72 81	70 79	69 77	68 76	67 77	67 78
POP 24 hrs	61	68	67	60	41	30

### Dayton

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	71 79	70 76	69 76	67 75	65 76	67 78
POP 24 hrs	47	66	64	54	34	24

### Findlay

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	70 77	68 74	68 74	65 73	64 74	65 75
POP 24 hrs	53	65	61	54	36	25

**Mansfield**

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	68 76	69 74	68 72	66 71	64 72	66 73
POP 24 hrs	70	76	74	70	55	43

**Toledo**

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	69 79	68 75	68 75	66 75	65 75	65 76
POP 24 hrs	58	67	62	57	38	29

**Wilmington**

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	69 78	68 75	68 75	65 74	67 75	67 76
POP 24 hrs	49	66	65	54	34	25

**Zanesville**

Day/Date	FRI 01	SAT 02	SUN 03	MON 04	TUE 05	WED 06
Temp Min Max	68 79	68 79	68 75	67 75	65 76	64 77
POP 24 hrs	67	62	64	57	40	27

POP = Probability of precipitation over 24 hour period.



## What's New At The VegNet Web Site

### Problem Of The Week

**A pictorial comparison of Squash Vine borer damage and Bacterial Wilt in pumpkins. While the symptoms are similar, there are some key differences. Check it out. Click on the 'Problem of the Week' button of the left side.**

### VegNet Vegetable Schools

**A series of slide presentations are now available in order to update you on the latest pumpkin and sweet corn research. We begin with 6 pumpkin topics in Pumpkins 101 and have 10 slide presentations available in Sweet Corn 101. In sweet corn. Powerpoint presentations and html online slide shows are available now. Go to the VegNet homepage.**

#### **Pumpkins 101**

**The use of trap crops and Admire for cucumber beetle control and New varieties for 2001. We have presentations on cover crops for disease control and pumpkin fungicide use.**

- **Perimeter Trap Cropping. Online html slide show | Perimeter Trap Cropping. PPT, 7 Mbytes**  
See also the Research Results section on the home page for text version of the report.

## Sweet Corn 101

Presently only Powerpoint presentations available. Coming Soon: Online HTML slide shows. Check back often Nine topics including:

- Aspects of Variety Selection based on Disease Control [ ppt 40 KB]
  - Internet Link To "Reactions of Sweet Corn Hybrids to Prevalent Diseases" Dr. Jerald Pataky [www.sweetcorn.uiuc.edu](http://www.sweetcorn.uiuc.edu)
  - Producing Early Sweet Corn [ ppt 3.5 Mbytes ]
  - Managing Weeds in Sweet Corn [ ppt, 9 Mbytes ]
  - Sweet Corn Herbicides & Variety Sensitivity. [ ppt 2Mbytes ]
  - Sweet Corn Development and Critical Periods for Irrigation Management [ppt 1.6 Mbytes ]
  - Flea Beetle Management in Sweet Corn [ ppt 510 KB ]
  - How To Keep Worms Out of Sweet Corn Ears [ ppt 8.3 Mbytes ]
  - Role of Bt Transgenic Hybrids in Sweet Corn Pest Management. [ ppt 21.2 Mbytes ]
- Bt Sweet Corn Efficacy in OH, 1999-2000 [ppt, 208 KB ]



[University Extension](#)

[Return to Vegetable Crops Homepage | Ohio State](#)

We appreciate very much the financial support for this series of vegetable reports which we have received from the board of growers responsible for the Ohio Vegetable and Small Fruit research and Development Program. This is an example of use of Funds from the "Assessment Program".

Where trade names are used, no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely and accurate, the pesticide user bears the responsibility of consulting the pesticide label and adhering to those directions.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Keith L. Smith, Director, Ohio State University Extension.

**All educational programs and activities conducted by Ohio State University Extension are available to all potential clientele on a nondiscriminatory basis without regard to race, color, creed, religion, sexual orientation, national origin, sex, age, handicap or Vietnam-era veteran status.**