

Predictions for Corn Flea Beetle and Stewart's Wilt on Sweet Corn:
C. Welty

Sweet corn growers can expect fewer problems with Stewart's wilt in Ohio this summer compared to the past few years. Stewart's wilt is a bacterial disease that causes reduced yields, and when severe it can stunt or kill an entire planting. The disease is transmitted by the corn flea beetle. Yield is affected the most if plants are infected at the 3- to 5-leaf stage.

A traditional rule for predicting severity of Stewart's wilt is to calculate a 'corn flea beetle index' by adding the average temperatures (degrees Fahrenheit) for December, January, and February. If the index is below 90, then wilt should be negligible. If the index is 90 to 95, then wilt should be light to moderate. If the index is 95 to 100, then wilt should be moderate to severe. If the index is over 100, then wilt should be severe. Flea beetle index values for 11 Ohio locations for the current winter and the previous 5 winters are listed in Table 1. The number of Ohio sites in each of four categories of predicted disease severity are shown in Table 2 for this year and recent years as well as the long term average. Averaged over the 11 Ohio locations listed, December 2000 was 9 degrees lower than normal, January 2001 was 1 degree higher than normal, and February 2001 was 4 degrees higher than normal, making this year's index values about 4 points lower than normal.

Table 1. Corn flea beetle index values for 11 Ohio locations in years 1996 to 2001, plus the long-term average.

| Site | Flea beetle index value | | | | | | |
|--------------|-------------------------|------|------|------|------|------|------|
| | Long term average | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| Piketon | 100 | 95 | 108 | 116 | 111 | 107 | 94 |
| Jackson | 96 | 93 | 107 | 116 | 110 | 105 | 93 |
| Ripley | 96 | 90 | 105 | 111 | 106 | 101 | 87 |
| Columbus | 92 | 84 | 98 | 110 | 102 | 96 | 88 |
| Oxford | 92 | 85 | 97 | 110 | 105 | 101 | 86 |
| S.Charleston | 90 | 81 | 96 | 111 | 101 | 95 | 82 |

| | | | | | | | |
|------------|----|----|----|-----|-----|----|----|
| Delaware | 87 | 80 | 95 | 106 | 105 | 95 | 83 |
| Kingsville | 85 | 80 | 93 | 105 | 98 | 96 | 82 |
| Wooster | 84 | 80 | 96 | 106 | 98 | 96 | 83 |
| Hoytville | 81 | 75 | 91 | 105 | 93 | 90 | 76 |
| Fremont | 80 | 71 | 86 | 98 | 94 | 87 | 76 |

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Table 2. Summary of predictions for severity of Stewart's wilt based on corn flea beetle index values for 11 Ohio locations for years 1996 to 2001, plus the long-term average.

| Stewart's wilt prediction | Number of Ohio sites | | | | | | |
|-----------------------------|----------------------|------|------|------|------|------|---|
| | Long term average | | | | | | |
| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | |
| Severe (>100) | 1 | 0 | 3 | 10 | 7 | 4 | 0 |
| Moderate to severe (95-100) | 2 | 1 | 5 | 1 | 2 | 5 | 0 |
| Light to moderate (90-94) | 3 | 2 | 2 | 0 | 2 | 1 | 2 |
| Negligible (<90) | 6 | 8 | 1 | 0 | 0 | 1 | 9 |

Cultural control: The most important management option for Stewart's wilt is to use resistant varieties. Some hybrids that are most resistant to Stewart's wilt are Eliminator (yellow su), Sweet Sue (bicolor su), Miracle (yellow se); the se bicolors Ambrosia, Buckeye, Encore, Lancelot, Seneca Nation, and Table Treat; Argent (white se); and Trigger and Zenith (yellow sh2).

Editors Note: For the complete updated listing on variety resistance to Stewart's wilt, go to: <http://www.ag.ohio-state.edu/~vegnet/vegipm.htm>

Chemical control of corn flea beetle by seed treatment with Gaucho: In 2001, Ohio growers are allowed to buy sweet corn seed treated with Gaucho in Idaho, the state where most of our sweet corn seed originates. Gaucho does not yet have a federal registration for use on sweet corn, but Idaho has been allowed an emergency exemption (called a Section 18 registration) for its use. Ohio is one of several states

included as an end-use destination in the Idaho registration. Gaucho-treated seed might not be available for all sweet corn varieties or from all seed companies; growers should contact their seed supplier to find out about availability. Gaucho-treated seed is about \$1 more per pound than untreated seed. Gaucho is an insecticide with the active ingredient imidacloprid, the same ingredient as in Admire and Provado. It has systemic action when applied to seed or to soil in the root zone. Gaucho is made by Gustafson.

Tests done by Dr. Jerald Pataky at the University of Illinois showed that incidence of Stewart's wilt in susceptible varieties was reduced by about 70% by Gaucho.

Severity of symptoms was also reduced by Gaucho. The degree of control by Gaucho was roughly equivalent to using a hybrid with one higher level of resistance, among 4 levels: resistant, moderately resistant, moderately susceptible, and susceptible. For example, using Gaucho on a susceptible variety was equivalent to using a moderately susceptible variety without Gaucho.

Gaucho is thus not a product that alone will control corn flea beetle and Stewart's wilt. The primary strategy that should be used is host plant resistance. The secondary strategy is insecticide. Gaucho is the easiest insecticide to use since it comes already on the seed. The second best insecticide option is Furadan 4F at planting. Other options are Counter or Thimet at planting, or waiting until seedlings emerge when they can be sprayed with Sevin, Pounce, or other non-systemic foliar insecticides.

Online Edition of the 2001 Ohio Vegetable Production Guide - Now Available.

R. Precheur

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from 'bulletins online' in 'The Library' Section at the vegnet website

<http://www.ag.ohio-state.edu/~vegnet/library/libr.htm>

or through OH State Cooperative Extension's Ohioline <http://www.ag.ohio-state.edu/~ohioline/b672/index.html>

Be sure to go to the bottom portion of the Table of Contents for a listing of the bulletin's charts and tables including the insecticide efficacy tables for each chapter and the chart on the Basic Guide to Pumpkin Production. Most of the charts and tables are available in PDF file format for downloading. You will need Adobe Acrobat Reader to view them.

As mentioned in earlier issues, hard copies of this bulletin are available through your local extension office or through Janis Cripe, Publications Office at 614-292-1607. The base price is \$4.50 to which you must add taxes and postage. Ask for Bulletin # 672-01.

Spring Vegetable Calendar

March 29 Hydroponic Study Group, Toledo Botanical Garden,
Toledo, Ohio, 6-9 p.m.
Contact: Mary Donnell, OSU Extension Agent, ABE
Center, 800-358-4678, or 419-354-6916,
donnell.8@osu.edu

April 5-7 International Fresh-cut Processor's Association
14th Annual Conference and Exhibition in
Phoenix, Arizona International Fresh-cut Produce
Association, 1600 Duke St., Ste 440, Alexandria,
Virginia 22314-3400, tel 703-299-6282,
fax 703-299-6288

April 10. FDA Food Safety Workshop, East Lansing, MI.
United Fresh Fruit and Vegetable and FDA.
Contact Anita Ragan, 703-836-3410,
aragan@uffva.org

What's New At The VegNet Web Site

Online Edition of the 2001 Ohio Vegetable Production Guide - Now Available
Sweet Corn Disease Resistance Ratings

The following are summarized lists of Dr. Pataky's work at the Univ. of IL on disease reactions of sweet corn. In these summaries, all experimental and processing varieties have been removed and only named varieties which were rated for common rust or MDM are included. The first list are those named varieties rated for common rust. The second list are only those named varieties rated for Maize Dwarf Mosaic virus (MDM). For a complete report, E-mail: Bob Precheur:
precheur.1@osu.edu

Common Rust of Sweet Corn

MDM of Sweet Corn

Do You Know Us?

Find out what we've been up to. The OSU Vegetable Team Report is available in PDF file format for downloading from the VegNet homepage.

Sources of Pheromone Traps Used in Vegetable Pest Management.

Do you need to find traps, lures or suppliers, click on the Vegetable IPM button on the left side of the homepage, then click on the 'Sources' document in the Vegetable IPM section.

IR-4 News

Also in the Vegetable IPM section, you can link to the IR-4 website. Read the results of the 2000 food use workshop, monthly and quarterly newsletters. Find out the latest on pesticide registrations for minor crops. Learn about biopesticides plus

much more. Click on the Vegetable IPM button on the VegNet homepage and then click on the IR4 link in the Vegetable IPM section.

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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.

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