



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetables

Vegetable Insects - Derby Walker, Sussex County
Extension Agent, derby@udel.edu

Rind Damage on Watermelons.

Rindworms and cucumber beetle damage has been seen on watermelons. There are many effective materials to choose from, but consider days to harvest and re-entry restrictions before applying control options to avoid harvest delays and residue issues. Ambush and Pounce have 0 days to harvest with a 24 hour re-entry time, Thiodan is 2 days to harvest and 48 hour re-entry, and Pounce and Capture have a 3 day restriction with a 24 hour re-entry.



Vegetable Diseases - - Bob Mulrooney, Extension
Plant Pathologist; bobmul@udel.edu

Lima beans.

Surveys of infected lima beans with downy mildew in 1999 and 2000 by graduate students Carley Davidson and Jen Dominiak, working with Tom Evans, Bob Carroll and myself from the Plant and Soil Science Dept., have shown that the predominant race of the downy mildew causing fungus, *Phytophthora phaseoli*, is race E. Race D was only found in two fields and represented only 2.3% of the isolates of the fungus that have been

identified so far. The disturbing fact is that race F was discovered to which there is no resistance available at the present time. Only three fields were identified with race F in 2000 on the varieties, C-Elite select, 184-85, and the new Cypress. This occurrence is very low, but we have no idea how fast the race situation can change. Growers with the new Cypress and 184-85 both resistant to race E should have a low probability of seeing downy mildew. The most vulnerable varieties are those with no resistance to race E including M-15, Eastland, 8-78, and 328. The speckled lima bean, Jackson Wonder, has no resistance to any race.

Field Samples of Downy Mildew on Lima Beans.

Carley Davidson, a graduate student at the University of Delaware is working on downy mildew of lima beans. As part of her research, she needs to collect field samples of infected pods. Any help you can give her in the collection of these samples would be greatly appreciated. You can contact Carley at 302-831-2548 or carleyd@udel.edu. If you are able to collect a sample of the infected pods, please place them in a paper bag (not plastic) and refrigerate the sample. Marking the bag with the date, lima bean variety name and field location will also be very helpful. Please call Carley at the above number or contact your county extension agent so we can get the samples to Newark. Thank you for your help.



Late Blight Update

Disease Severity Value (DSV) Accumulations as of July 25, 2001, are as follows:

Location: Joe Jackewicz Farm, Magnolia, DE
Remember that 18 DSV's is the threshold to begin a spray program

Date	Total DSV	Spray Recommendation
5/16	0	
5/17	11	
5/20	29	
5/30	51	5-day, low rate
6/3	57	5-day, low rate
6/5	57	5-day, low rate
6/7	57	7-day, low rate
6/11	59	10-day, mid rate

6/13	60	10-day, mid rate
6/17	76	7-day mid rate
6/20	76	7-day high rate
6/24	88	7-day high rate
6/27	88	7-day high rate
7/1	89	10-day, high rate
7/4	90	10-day, high rate
7/8	92	10-day, high rate
7/11	94	10-day, high rate
7/15	94	10-day, high rate
7/18	99	7-day, high rate
7/22	102	7-day, high rate
7/25	106	10-day, high rate



Vegetable Diseases - *Kate Everts, Extension Vegetable Pathologist, University of Delaware and University of Maryland;* everts@udel.edu

MELCAST for Watermelons

EFI Values (Environmental Favorability Index)

Do not use MELCAST if there is a disease outbreak in your field, it is a **preventative program**. Any questions, please call David Armentrout at (410) 742-8788 or e-mail: da88@umail.umd.edu

Location	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25
Bridgeville, DE	4	7	1	1	1	3	1	0
Laurel, DE (Collins Farms)	1	5	1	1	1	5	3	0
Galestown, MD	3	7	1	1	1	3	5	0
Georgetown, DE	4	5	1	1	1	4	3	0
Hebron, MD	1	5	1	0	1	4	3	0
Salisbury, MD	2	4	2	0	1	3	3	0
Laurel, DE (Vincent Farms)	2	8	1	1	1	3	2	0

Watermelon Fields should be sprayed with a fungicide when 30 EFI values have been accumulated by the weather station nearest your fields. Add 2 points for every overhead irrigation. After a fungicide spray, reset your counter to 0 and start over. If a spray has NOT been applied in 14 days, apply a fungicide and reset the counter to zero. The first and last day above can be partial days so use the larger EFI value of this report and other reports for any specific day

More detailed information concerning MELCAST and sample data sheets are available on the web at <http://www.agnr.umd.edu/users/veg/disease/veg/disease.htm>. . ❖



Field Crops

Field Crop Insects - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu and Derby Walker, Sussex County Extension Agent, derby@udel.edu

Soybeans.

Spider mites can be found on soybeans. Look for the white stippling at the base of the leaves, which indicates the presence of mites. Treatment will be needed when you find 20-30 mites per leaflet or 10% of plants with 1/3 or more leaf area damaged. Dimethoate, Lorsban and Parathion (aerial application only) are the only available options so early detection and control will be critical. If dimethoate is used, the addition of a penetrant like LI-700 or AD 100 has been shown to improve the performance.



2001 Small Grain Variety Trial Results Online

–Bob Uniatowski, Extension Associate – Agronomic Crops; bobuni@udel.edu

The small grain variety trial results for 2001 are available online at the following address: <http://ag.udel.edu/extension/varietytrials/index.html> . If you need a hardcopy, contact your local County Extension Office at:
Sussex – 302-856-7303,
Kent – 302-697-4000
New Castle at 302-831-2506.



Field Crop Diseases - - Bob Mulrooney, Extension Plant Pathologist; bobmul@udel.edu

Be on the Lookout for Sudden Death Syndrome (SDS) in Full Season Soybeans.

Last season Sudden Death Syndrome was identified for the first time in Sussex County Delaware and Somerset County on the eastern

shore of Maryland. Only two fields in both states were affected, so the impact on soybean plant health here on Delmarva is still unknown. The 2000 season was one of the wettest and coolest in a long time, which provided conditions favorable for infection. Growers, farm service personnel, scouts, and others interested in soybeans should be on the lookout for SDS this summer.

Sudden death syndrome (SDS) is a relatively new disease of soybeans. The name is descriptive in that normal-appearing plants turn yellow and die rather quickly, in somewhat circular to elongated patches of a field, after pod set. Yield losses due to SDS range from 20-80% or more, depending on variety and stage of crop development when the symptoms first appear. Appearance of the disorder at early pod fill is reportedly more damaging than its appearance at a later stage of plant development. Yield reduction is the result of reduced photosynthetic area, defoliation, flower and pod abortion, and reduced seed size. SDS was first observed in Arkansas in 1971, but since has been recognized in Wisconsin, Iowa, Illinois, Indiana, Kansas, Kentucky, Mississippi, Missouri, and Tennessee.

SDS is favored by cool, rainy weather through the first half of the growing season. Hot and dry conditions limit the development of the disease, but will not totally eliminate it from an area. Early planted full season soybeans are more likely to become infected because conditions for infection are more likely to occur then. It is rarely seen in double-cropped soybeans. Since planting date studies here have indicated a benefit toward earlier planting, this trend could favor SDS if environmental conditions favor it.

Research has also shown that SDS is favored by moderate to high populations of soybean cyst nematode (SCN). Although there does not appear to be a direct relationship of SDS to SCN, the nematode acts as an additional stress on the plants, making them more susceptible to infection and colonization.

Like many other soilborne diseases, SDS losses are greatly dependent on the environment, time of infection, and the general vigor of the soybean crop.

Cause

SDS is caused by a specific strain of a common soil-inhabiting fungus called *Fusarium solani*, which causes a unique set of symptoms of soybean. In general, *F. solani* is regarded as a chronic pathogen of many legumes such as pea, snap bean, alfalfa and soybean. The SDS strain of *F. solani* f.sp. *glycines* likely arose as a mutant from the general population and is a vastly more virulent form of the species. These blue strains of *Fusarium solani* have been isolated from soybean roots in Delaware in the past when looking for other pathogens, but the typical SDS symptoms were never observed until now. The fungus is present in Delmarva soils at some unknown level.

The fungus produces large numbers of spores on the surface of the taproots of infected plants as well as thick-walled resistant structures called chlamydospores in the cortical tissues of the taproot. The SDS causing fungus produces phytotoxic compounds in the roots which are translocated to the leaves which are thought to produce the distinct foliar symptoms.

Recognizing SDS



Symptoms of SDS first appear as early as late bloom until the R6 stage (pods are filled but still green). Often, however, they are not observed until early to mid pod fill stages (R3 through R5). Symptoms begin to appear on apparently healthy plants in circular to elongated patches within a field. First to appear are interveinal chlorotic (yellow) blotches that progress to large irregular patches. Chlorotic areas eventually become necrotic, turning brown or white, while the veins remain green. The affected area in the field may appear scorched, as if by fire. Stems and petioles remain erect throughout the course of the disease. Defoliation may occur, especially on the upper third of the plant. Leaf blades separate from the petioles, which remain attached to the stem. Petioles and stems stay green for a period after defoliation. Eventually, pod drop may also occur.

The root system appears healthy if examined when the chlorotic leaf symptoms are first observed. Later, however, the lower portion of the taproot becomes discolored. Deterioration gradually progresses upward, eventually affecting the lateral roots, nitrogen-fixing nodules, and the lower stem. Affected root tissues may be milky gray or milky brown, and only includes the cortical cells. The pith, or inner core of the root and stem, remains white. This contrasts with other diseases such as brown stem rot, that cause a brown discoloration of the pith. Brown stem rot, however, has not been diagnosed here in 25 years.

Severe cortical decay was observed on the samples we received as well as blue fungal masses on the taproots.

Be on the lookout for these symptoms. If you find plants that look like these, please let us know. Place suspect plants in sealed plastic bags and refrigerate until they can be taken to the county extension offices.

Some material for this article was adapted from Extension fact sheets from the University of Illinois, and the University of Wisconsin.



Sudden Death Syndrome (SDS) is not to be confused with the virus disease of soybeans called Soybean Severe Stunt disease caused by the soybean severe stunt virus (SSSV). This disease is only found in Delaware and causes extreme stunting and crinkling of soybean foliage. Having two diseases with all those letters can be confusing. SSSV is soilborne, as well, but limited to certain areas of Sussex County between Georgetown and Millsboro and a few other scattered fields.



Soybean Severe Stunt Disease caused by Soybean Severe Stunt Virus (SSSV)

You may want to link them to the fact sheet on the Extension website under plant diseases in DE for more info on SSSV.

<http://ag.udel.edu/extension/pp/pp-45/pp-45.htm>



Computer Virus Alert – Tracy Wootten, Extension Associate – Vegetable Crops, wootten@udel.edu and Dean Dey, Campus Information Technology Associate, dey@udel.edu

Just a reminder to be sure to update your computer virus software on a regular basis, and to check the extension of email attachments. There is a new virus M32.SirCam.Worm.mm also known as SirCam. Attachments with one of the following file extensions: .pif .com .bat .lnk contains the virus. The virus does not damage your computer, but will randomly pick files from your computer and send them to people in your address book.

If your computer gets infected with this virus, it will send out multiple copies to everyone in your address book. Dean Dey received seven copies of a message with the virus from a known contact yesterday. Each of the file names was normal appearing, having come from the victims 'My Documents' directory. **DO NOT BE FOOLED BY THE FILE NAME! The tip-off, aside from the file extension, is the bad English in the message body.**

Message: The message body will be semi-random, but will always contain one of the

following two lines (either English or Spanish) as the first and last sentences of the message.

Spanish Version:

First line: Hola como estas ?

Last line: Nos vemos pronto, gracias.

English Version:

First line: Hi! How are you?

Last line: See you later. Thanks

If your computer becomes infected with the virus go the following site
<http://www.symantec.com/avcenter/venc/data/w32.sircam.worm@mm.html> to remove it.



UPCOMING MEETINGS:

University of Delaware Farm & Home Field Day

August 8, 2001

U of D Research & Education Center,
Georgetown, DE

Crop Diagnostic Field Day

August 15, 2001

8:00 a.m. – 11:30 a.m.

U of D Research & Education Center,
Georgetown, DE

Improving Diagnostic Skills - Correcting Corn Production Problems Through Proper Diagnosis

Weeds ♦ Insects ♦ Nematodes ♦ Fertility ♦ Variety ♦ Yield Potential

University of Delaware Extension Personnel will provide hands-on training to improve your trouble-shooting skills in corn. Participants will be involved with problem solving scenarios in a field setting and will be expected to help recommend corrective and preventative solutions.

Three Certified Crop Advisor Continuing Education Units (CEU) will be earned. 1.0 credit in Nutrient Management; 1.0 credit in Crop Management; 1.0 credit in Integrated Pest Management. Pesticide recertification credits will be earned.

Participation is limited to first 60 applicants. Prior registration is required. Registration fee is \$15.00/person.

Registration deadline is August 3, 2001. Checks confirm reservations.

Registration at 8:00 a.m. with coffee and donuts in the grove. Training starts at 8:15 a.m. Hand lens and sweep nets will be available for use if needed.

For more information, to register or for directions, contact Lisa Dorey at 302-856-7303 (ph), 302-856-1845 (fax) or dorey@udel.edu.

University of Maryland Wye Field Day

August 16, 2001

U of MD Wye Research and Education Center
Queenstown, MD



Weather Summary

Week of July 19 to July 25, 2001

Rainfall:
July 19: 0.01 inches

Readings taken for the previous 24 hours at 8 a.m.

Air Temperature:
Highs Ranged from 89°F on July 25 to 75°F on July 19.

Lows Ranged from 77°F on July 25 to 53°F on July 22.

Soil Temperature:
77°F average for the week.

(Soil temperature taken at a 2 inch depth, under sod)

Web Address for the U of D Research & Education Center:
<http://www.rec.udel.edu>

Compiled and Edited By:

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