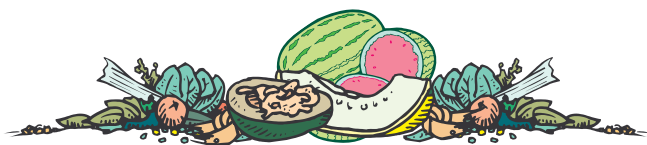


VEGETABLE CROPS HOTLINE

A newsletter for commercial vegetable growers prepared by the
Purdue University Cooperative Extension Service

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No. 378
June 29, 2000

<http://www.entm.purdue.edu/entomology/ext/targets/newslett.htm>

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SUDDEN WILT OF WATERMELONS -
(Dan Egel) - In southwest Indiana sudden wilt of watermelon has been observed again this year. The following is a description of the disease.

Sudden wilt has only been observed on watermelon plants. The only above ground symptoms of this disease are vines that wilt and decline. The roots often have a reddish-brown discoloration. Sometimes roots are so rotten they disintegrate in one's hands. In the morning hours the vines may appear to have recovered, however, during the heat of the day wilting is obvious. The disease appears to be most common when the vines are under stress from heavy fruit load.

Sudden wilt may be confused with fusarium wilt of watermelon. While sudden wilt seems to 'move' down a row of watermelon plants, fusarium wilt affects scattered plants. Plants with fusarium wilt have healthy looking roots; sudden wilt causes the rotten looking roots described above. The inside of the stem at the crown area looks white and healthy in sudden wilt plants; plants with fusarium wilt have a brown discoloration in the stem area.

Unfortunately, this relatively new disease is not well understood. Sudden wilt seems to be most common under black plastic mulch. It occurs with or without irrigation. Several different species of fungi have been isolated from the roots of affected vines. However, it is not known which, if any, of the fungi are responsible for this disease. It may be that while soil fungi rot the roots, environmental factors such as heat and fruit load add enough stress to cause the vines to decline. Excess water as rain or irrigation, especially early in the season, may

contribute to the occurrence of sudden wilt. However, at this point, no clear treatment or management strategies for sudden wilt exist. There are no chemical treatments that appear to be effective. Similarly, no varieties appear to offer resistance.

Research is being conducted on this important disease. So that we may gather as much information as possible on sudden wilt, please contact Dan Egel if you think you may have this problem.

VIRUS SYMPTOMS ON MELONS -
(Dan Egel) - I have observed a few muskmelon and watermelon vines with virus symptoms recently. Symptoms include puckered and distorted leaves. Virus and growth regulator herbicide symptoms are difficult to distinguish.

Aphids transmit most of the virus diseases that affect muskmelon and watermelon in this area. For this reason, many growers want to apply insecticides upon seeing virus symptoms. However, insecticides are not effective against virus transmission.

- It only takes a few aphids to transmit the virus. Insecticide treatments may kill the majority of aphids but leave enough to transmit the disease.
- Aphids only take a few seconds to transmit the virus. An aphid may feed briefly, decide not to feed on that plant or even be killed and the virus may still be transmitted.
- Unnecessary insecticides may kill beneficial insects. Once beneficial insects are missing from a field, pest insects can rampage unchecked making regular insecticide applications necessary.

Although applying insecticides for aphids is not effective, it may be necessary to apply insecticides for aphid damage.

POWDERY MILDEW ON PUMPKIN -
(Dan Egel & Rick Latin) - Powdery mildew on pumpkin can be a serious problem in some years. Although a few varieties have tolerance to powdery mildew, most other varieties are susceptible to powdery mildew. The strategy behind powdery mildew control on midwestern pumpkins is based on protecting vines from infection through mid-September. Fungicides are much more effective when applied before powdery mildew is observed. The fungicide of choice for powdery mildew is Bayleton 50 DF. Benlate or Topsin can be used in areas where Bayleton has not been effective. This year Flint and Quadris may be applied to pumpkins for the control of powdery mildew. Both Flint and Quadris must be rotated for resistance management with a product with a different mode of action. In the case of powdery mildew, Quadris and Flint should be rotated with a systemic fungicide. Be sure to read and follow the label carefully. Growers in southern Indiana should apply a fungicide prior to August 1. Growers in the northern part of the state should make the application prior to August 15. Spray earlier if the canopy is already full or if a source of powdery mildew is known to exist nearby. If the vines are just starting to run, apply the fungicide somewhat later. A second application about 2 to 3 weeks after the first should control the disease through mid-September. Both Flint and Quadris recommend shorter application intervals. Please note that powdery mildew, unlike many diseases, does not need leaf wetness to infect.

NITROGEN APPLICATIONS - (Liz Maynard) - The series of heavy rains has probably leached much of the nitrogen applied before planting (and not yet taken up by crop) below crop root zones. This is especially likely in crops grown without plastic mulch. In crops grown on bare ground where most of the nitrogen was applied before planting, a sidedressing of 30-50 lb. N/A would be appropriate. If the soil has a high organic matter



content or has received heavy manure application, additional nitrogen will become available as the season progresses and an extra sidedressing may not be necessary.

Foliar application of N is an option when wet soils make it undesirable to apply N through drip irrigation, or when root activity has been reduced due to saturated soils. Apply not more than 10 lb. N/A per application from urea, 28% N solution, or calcium nitrate. If a source of N containing ammonium is used not more than 2.5 lb. N/A from ammonium should be applied to avoid burning leaves. (Adapted from articles by published by J. Howell, U. Mass, and D. Warncke, Mich. State Univ.)

MARKETING RESOURCES AND IVGA DIRECTORY - (*Liz Maynard*) - Direct marketers looking for marketing ideas and information might want to check the following commodity-group websites.

National Watermelon Promotion Board <www.watermelon.org>. The site includes nutrition facts, handling information, and recipe of the month, among other items.

Leafy Greens Council <www.leafy-greens.org> The site contains information for consumers about a wide range of greens, and some recipes.

National Onion Association <www.onions-usa.org> This site includes recipes (including one for chocolate cake!), handling information, and onion trivia, as well as other information.

The USDA dietary guidelines, which suggest eating 3-5 servings of vegetables a day, can be used to promote fresh vegetables. The USDA website <www.usda.gov/cnpp/> has more information, and downloadable versions of the Food Guide Pyramid. The Produce for Better Health Foundation has the 5-a-Day website <www.5day.com> which includes a catalog of posters and brochures promoting fresh fruits and vegetables.

Of interest to both direct and wholesale marketers, the Agricultural Marketing Service of USDA has copies of vegetable standards on the web at <www.ams.usda.gov/standards/vegfm.htm>. The AMS also lists daily terminal market and shipping point prices at <www.ams.usda.gov/fv/mncls/fvwires.htm>.

The Indiana Vegetable Growers Association Directory of Wholesale Vegetable Producers 2000 has just come off the press. IVGA members should have received one in the mail. The Directory is available to the public at no charge. To request a copy, call 219-785-5674.

SIX INCH RAINS AND WILTED PLANTS - (*Dan Egel*) - Purdue specialists have been flooded with calls about vegetable plants (especially tomatoes) that have abruptly wilted shortly after Father's Day (18 June). Thursday, 22 June, I visited a field of staked tomatoes that were typical of the problem. Not all plants were wilted. The wilted plants were on lower, heavier ground that was poorly drained. The wilted plants were not scattered; all the plants in one row were wilted. The plants were wilted entirely; no leaves or branches escaped. The outside layer of the roots fell apart when examined. This left the roots unable to perform their job properly.

Perhaps most importantly, the soil around the roots was still saturated from the rains of the previous weekend. The rain that occurred over Father's Day weekend will be remembered for some time. In the southwest portion of the state, 4 to 6 inches of rain fell, mostly on Saturday. Under such conditions, the roots can not "breathe", and so can not take up the abundant water in the soil around them. Yes, roots need to breathe also.

In most cases, the cause of the wilted plants was not disease. The roots merely became waterlogged. However, too much water can cause diseases such as root rots. How does one tell the difference between plants wilted due to too much water and those wilted due to root rot diseases? The distribution of diseased plants will not be as uniform as those plants that are killed from standing or too much water. Whereas plants injured from the excess rain may consist of all one row, plants with disease problems will be in a more random pattern. The roots from a poorly drained area may look uniformly rotted, however diseased roots will have lesions on them here and there. For the most part, waterlogged plants will wilt rather suddenly, whereas diseased plants will have a more gradual decline. What will happen to waterlogged plants? The answer depends on how long the plants were in "wet" soils and how fast the soils dry out again. Plants can stand wet feet for short intervals. However, prolonged wilting will lead to plant death. What can be done for the plants now? Try to avoid adding more water, make drainage channels where possible, and shallow cultivation may improve soil aeration. Next year, either avoid such areas or use raised beds.

*From all of us at the
Southwest Purdue Ag Program
have a safe and happy
Fourth of July!!*

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