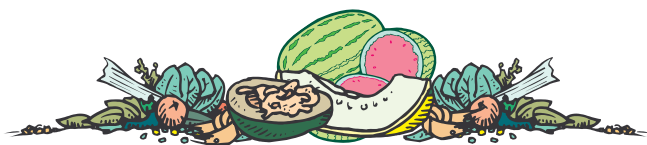


VEGETABLE CROPS HOTLINE

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

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

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WILTING CUCURBIT VEGETABLES - (Dan Egel) - There may be many causes for wilting vegetable plants. First check for the obvious-is there adequate soil moisture? Cool weather overnight can cause plants to wilt in the early morning hours. Such plants usually recover as the air warms. Root problems can cause plants to wilt. Roots should be white. Roots that appear rotten and brown/black may be the cause of the wilt. You may want to check the roots of a healthy plant for comparison. Abnormally stunted or swollen roots may indicate herbicide carry over or nematode damage. The vascular tissue in the stem of healthy plants should be green to white depending on the plant. There should be no dark areas in the stem. Again, check a healthy plant for comparison. Below I have listed three curcubit plants and possible causes for wilting.

Muskmelon: Bacterial wilt is the most common wilt disease for muskmelon. The striped or spotted cucumber beetle (See *Vegetable Crops Hotline* (VCH374 under 2000) web site: <<http://www.entm.purdue.edu/entomology/ext/targets/newslett.htm>>) is responsible for spreading the bacterium which causes the disease. Cut the stem of the wilted plant close to the base. Hold the two pieces together firmly for about 10 seconds. Gently pull the two pieces apart and watch for stringy sap to cling momentarily between the pieces. The stringy material is a good indication that you have bacterial wilt.

Muskmelon plants are resistant to the forms of fusarium wilt that we find in Indiana.

Watermelon: Bacterial wilt does not affect watermelon. However, fusarium wilt does. This fungus survives well in the soil waiting for the right plant. Strains of the fusarium fungus are very specific. The strain that affects watermelon will not affect tomatoes, or even muskmelons.

The inside stem tissue will be discolored in fusarium wilt. The roots will be unaffected. Fusarium affects plants in an almost random fashion across the field.

While fusarium wilt can be devastating, remember that this disease will not spread from plant to

plant. Affected plants may wilt and die, but neighboring plants may remain unaffected.

The fusarium fungus can survive in the soil a long time. Therefore, in order for rotations to be effective against fusarium wilt, they must be long-5 to 6 years at least. Perhaps the best

management tool is to use varieties tolerant to fusarium wilt. A list of Fusarium tolerant varieties can be found in the Midwest Vegetable Production Guide for Commercial Growers 2000 (ID-56) web site:

<<http://www.entm.purdue.edu/entomology/ext/targets/ID/index.htm>>. Check with your seed company representative.

Once every few years we witness a disease we call sudden wilt of watermelon. Sudden wilt only occurs on watermelon. Watermelon plants begin to wilt about the time the fruit is becoming ripe. It usually starts in low areas and seems to "move up a row". This disease is still a mystery; if you think you have this disease, contact a Purdue Specialist.

Pumpkin: Whether Pumpkins are susceptible to bacterial wilt may depend on where you live. Here in Indiana, Jerry Brust was not able to infect pumpkins with bacterial wilt once they were past the 5-leaf stage. However, researchers from Oklahoma to New York have reported bacterial wilt in mature pumpkin vines. It may be that we do not have a "pumpkin strain" of the bacterial wilt bacterium in Indiana. Growers who think they may have bacterial wilt of pumpkin should contact a Purdue Specialist.

Most of the pumpkins I have seen with wilt could be attributed to some type of root rot. The roots may be some shade of brown or even purple/red. Look for roots that have withered. Fusarium wilt is not a factor in pumpkins.



BLACK CUTWORMS - (Rick Foster) - Growers should be checking sweet corn for black cutworm damage now. Heavy populations are being found south of Interstate 70, but you can expect to find them throughout the state soon. Cutworms of all sizes are being found, with the small ones feeding on leaves and the larger ones cutting plants. Treat if 5% of the plants are cut, larvae are less than 3/4 inch long, and sweet corn is less than 6 inches tall. Lorsban or any of

the pyrethroids (Ambush, Pounce, Asana, Warrior, Capture, etc.) will provide good control.



BEAN LEAF BEETLES - (Rick Foster) - Heavy populations of bean leaf beetles are being found feeding on beans throughout the state. Feeding on very young snap beans can severely stunt their growth, resulting in lower yield and uneven maturity. Once the beans get several true leaves, they can sustain up to 50% defoliation without any appreciable effect on yield. Pod feeding can also be a problem that warrants treatment. A number of insecticides are available that will provide excellent control of bean leaf beetles. See the Midwest Vegetable Production Guide for Commercial Growers 2000 (ID-56) web site: <<http://www.entm.purdue.edu/entomology/ext/targets/ID/index.htm>>, for details.



POTATO LEAFHOPPERS - (Rick Foster) - Potato leafhoppers have arrived from their winter homes in the South early this year. Snap bean and potato growers should be on the lookout for infestations. Remember that leafhoppers should be controlled before you begin to see symptoms. For green beans in the seedling stage, treat when populations reach 2 leafhoppers per foot of row. For older beans, the threshold is 5 per foot of row. For potatoes, treat if you find more than 1 leafhopper adult per foot of row, or if nymphs are present. Potatoes treated with Admire should be protected against leafhoppers for much of the season, but you should still check the level of control received. See the Midwest Vegetable Production Guide for Commercial Growers (ID-56) web site: <<http://www.entm.purdue.edu/entomology/ext/targets/ID/index.htm>> for details regarding insecticides recommended for leafhopper control.



EUROPEAN CORN BORER - (Rick Foster) - European corn borer moths have begun to fly. Most first generation moths will lay their eggs on corn or sweet corn, rather than snap beans, peppers, or potatoes. If you are using pheromone traps or blacklight traps to monitor corn borer moth activity, you should have them in place now. For sweet corn, treatment should be made to whorl stage corn when 20% or more of the plants show feeding damage. For more mature corn, treat every five days from the pre-row tassel stage



until 10 days before harvest as long as you are catching 10 or more moths per night in your trap. The pyrethroid insecticides Warrior and Capture provide superior control of corn borers.



ADMIRE ON MELONS - (Rick Foster) - As reported earlier, Admire (imidacloprid from Bayer) is now labeled for use on melons. There are a number of different ways this material can be applied. We have not tested all of these methods, but the ones we have tested suggest that once the material is taken up by the plant (probably in 2-3 days), you should expect to receive 4-5 weeks of control of striped cucumber beetles. Usually this will take care of the bulk of the first generation. Once the first generation is past, most growers will be harvesting before the second generation can cause serious damage.



ROW COVERS - (Liz Maynard) - Using row covers or hot caps means deciding when to take them off. Three factors (at least) should enter into the decision. The first factor is temperature. Will it be warm enough without the row covers? Across much of Indiana the danger of a frost is low. The northeast corner of the state more often has late frosts.

But row covers are used for more than frost protection. Often their purpose is to raise temperatures closer to the optimal for the crop in question. In general, muskmelons, watermelons, and okra grow best at an average temperature of 77°F to 80°F. The average temperature takes into account both day and night temperatures. Tomatoes, bell peppers, cucumbers, and sweet corn do best at 68°F to 77°F. Average temperatures for the week of May 8 to May 14 ranged from 69°F in Southeast Indiana to 64°F in Northwest Indiana. Most parts of the state have just reached the optimum temperature for bell peppers, tomatoes, and cucumbers and sweet corn, and are still below the optimum temperature for melons. This has been an unusually warm year, with last week's temperatures averaging 6 - 10 degrees above normal. In a more typical year it would be another two weeks before averages of 64°F - 69°F occurred.

The second part to the temperature question is "does it get too hot under the row cover?" Temperatures under a clear plastic row cover can easily top 100°F. All crops listed above will do better below 95°F. General guidelines suggest that muskmelons and cucumber should be kept below 90°F; sweet corn below 86°F; and bell pepper and tomato below 80°F. Monitor the temperature under the row cover. If the average is consistently above the optimum for the crop in question (see previous paragraph), or if the high temperature consistently exceeds the maximums listed in this paragraph, consider removing the row cover. This is especially important if the crop is developing flowers or setting fruit. High temperatures often do greater harm to processes of flowering and fruit set than to vegetative growth. Tomatoes and peppers are especially sensitive to high temperatures during flower development and fruit set.

The second factor to take into account is crop size and growth stage. Sometimes crops get too big to fit under the row cover, as in the case of corn about to tassel, or vigorous muskmelon plants straining against a row cover. At other times, the growth stage rather than size is the deciding factor. When female flowers open it is probably time to remove or open row covers in crops such as cucumbers, melons and squash which require insect pollination. In crops like tomatoes, which set fruit better when wind or insects jiggle flowers and promote pollination, removing or opening row covers at flowering may also improve fruit set.

The final factor to consider before removing a row cover is pest populations. For many growers this may not be important, but for some it is. Row covers can effectively reduce cucumber beetle damage to muskmelons and similar crops. For those who rely on row cover for this protection, do not remove it until the cucumber beetle population in your area has peaked and dwindled.



UPCOMING EVENTS

ASPARAGUS TWILIGHT MEETING IN MICHIGAN - (from MSUE Vegetable CAT Alert, May 3, 2000) - On May 24, there will be an asparagus twilight meeting held at Southwest Michigan Research and Extension Center near Benton Harbor. The meeting will start at 7:00 PM. (6:00 PM. Indiana time) and will have presentations on disease and weed control, varieties, and economics of high density planting. Contact Ron Goldy (616-944-1477 x207) for more information. Anyone interested in carpooling from NW Indiana may contact L. Maynard at 219-785-5673.

INDIANA GOURD SOCIETY SPRING FEST & MEMBERSHIP MEETING - (Kathy Rogers) - June 3, from 9AM to 3PM, at the Hamilton County Fairgrounds located at the east edge of Noblesville, IN. Vendors will be selling crafted and uncrafted gourds. There will be a raffle, door prizes and demonstrations. Lunch is available. This meeting is free and open to the public. An open membership meeting will be held at 3PM.

6TH ANNUAL NEW CASTLE FLOWER GARDEN TOUR - (Kathy Rogers) - Saturday & Sunday, July 8 & 9, from 1PM to 6PM at various locations in New Castle, IN. Tickets are available at New Castle florists, garden location on day of tour, or contact Trudy Thurman by phone at 765-529-3589 and they can be mailed to you. This event sponsored by New Castle/Henry County Women's Division Chamber of Commerce.

INDIANA GOURD SOCIETY OCTOBER FEST - (Kathy Rogers) - To be held on October 28, at the 4-H Community Building in Bluffton, IN. This event is free and open to the public. For more information, contact Gene Bilberstein at 219-824-0928 or e-mail: geneb@parlorcity.com

Kathy Rogers, Indiana Gourd Society Director and Women's Division Flower Tour Committee New Castle, IN may be contacted via e-mail at: kathy@kiva.net

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