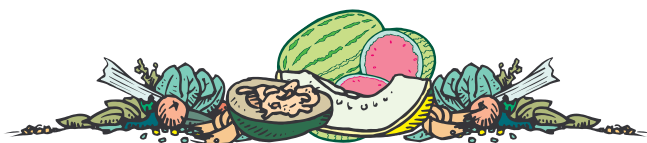


# VEGETABLE CROPS HOTLINE

A newsletter for commercial vegetable growers prepared by the  
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**HORNWORMS ON TOMATOES -**  
(Frankie Lam) - Hornworms have been found on tomatoes in some areas of Vincennes. The caterpillars consume large amounts of foliage and occasionally feed on tomato fruits. Hornworms are one of the most destructive and widely distributed insect pests of tobacco and tomato plants.

Two species of hornworms occur throughout most of the United States. The tobacco hornworm has seven diagonal stripes on each side of the body and the horn is slightly curved and red, whereas the tomato hornworm has eight curved stripes and the horn is straight and black. Their horns are unable to sting a person in any way. Both species attack tomato, tobacco, eggplant, pepper, potato, and related weeds. The caterpillars are usually green, and attain a length of 3-4 inches when fully grown. The hornworms pupate in soil. Their adults are swift-flying hawk moths or hummingbird moths. They fly at dusk and suck nectar by hovering about beds of flowers.

To avoid hornworm damage, you need to examine your tomatoes for the presence of hornworms, feeding damage, or worm poop or frass. During a warm day the caterpillars usually hide under the leaves in the lower portion of the plant or in the plant debris. The best time to sample the caterpillars is in the morning or in the evening when the temperature is cool. However, their poop can be seen easily on leaves or fruits. The economic threshold for hornworms is 0.5 larva per plant. Warrior T, Baythroid 2E, Guthion 50WP, Sevin XLR Plus, Asana XL, and some *Bacillus thuringiensis* insecticides (Agree, Biobit, Dipel, Javelin, and XenTari) are labeled for the control of hornworms. Follow label directions carefully before using any pesticides.

Although hornworms may cause severe damage on some plants in the field, they usually do not occur in large numbers. During the late season and in home gardens, the best management tactic for hornworms is by handpicking. A parasitic wasp is an important natural enemy of the hornworms. The wasps lay their eggs in the body of the worms. After feeding within the worm body, the immatures of the wasps eat out through the skin and spin the cocoons on the worm surface. The adult wasps later cut out circular lids and escape from the cocoons to attack other worms. Hornworms with cocoons of parasitic wasps on their back should not be killed. Furthermore, fall plowing may destroy many of the overwintering hornworm pupae in the soil.

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**WATERMELON ANTHRACNOSE -** (Dan Egel) - I observed anthracnose on watermelons in Lawrence County this week. Thanks to County Educator David Redman for the heads up. Growers may lose money on a shipment of watermelons that have anthracnose. However, other problems resemble anthracnose. Therefore, it is in the grower's best interest to know the diagnostic signs of anthracnose infection.

Initial symptoms of anthracnose infection on watermelon foliage include irregular-shaped dark brown leafspots. The leafspots may have pointed margins and the center of the lesions may fall out. The lesions can usually fit within the circumference of a dime. Lesions on stems and petioles are generally oval, sunken, and tan to salmon colored. Sunken fruit lesions most often occur on the melon surface nearest the ground. Fruit lesions are ALWAYS observed along with distinct clusters of collapsed vines. The point is that growers should be aware of anthracnose infections long before the fruit are harvested and loaded onto trucks.

There are no varieties of watermelons that are completely resistant to anthracnose. Seed catalogs will occasionally list watermelon cultivars as resistant to

race 1 of anthracnose. However, almost all modern cultivars of watermelon are resistant to race 1 of anthracnose, which is much more likely to cause disease of cucumbers and muskmelon. No watermelon cultivars exist which have adequate resistance to race 2 of anthracnose. To prevent epidemics of anthracnose from developing, most growers will find it necessary to use foliar fungicides. The MELCAST system can be used to determine when to spray. Growers who have been using Bravo for protection against gummy stem blight and alternaria leaf blight also are protected against anthracnose. Trials in Vincennes and Lafayette indicate the Mancozeb fungicides (Dithane DF, Penncozeb, Manzate 200) consistently out-performed Benlate and Topsin in terms of anthracnose control. Always read the label carefully. Reduce the amount of overwintered inoculum by fall plowing and crop rotation.

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**MICRODOCHIUM BLIGHT -** (Dan Egel) - Microdochium blight was observed in Dearborne County by County Educator John Jaworksi. Since Microdochium blight can affect fruit quality of ornamental pumpkins, a review of this disease may help growers who encounter the disease.

Microdochium blight was discovered in Tennessee in 1988 and is more common in the southern US. Both pumpkins and squash can be affected in Indiana. Leaves and stems with Microdochium blight develop white/tan sunken, spindle-shaped lesions. Fruit lesions are also a light color and may form a continuous dry scabby surface. The lesions will not invade the fruit, but may reduce the value of a pumpkin for carving or ornamental purposes. In severe cases, stem lesions can cause defoliation and thus loss of yield.

The fungus that causes Microdochium blight survives in crop residue. Therefore, rotations of 2 to 3 years will help to reduce the amount of disease that occurs in subsequent years. Remember that pumpkin rinds that may harbor the fungus are thick and may take longer to breakdown than leaves and stems. Warm wet weather appears to favor the disease. The fungus is probably splash dispersed from lesions to leaves and fruit.



No cultivars resistant to *Microdochium* blight have been reported. Fungicides used for the control of black rot should also control *Microdochium* blight. Thus, chlorothalonil products (e.g., Bravo, Echo, Terranil) or EBDC fungicides (e.g., Maneb 80) are effective. Cultural methods of control include crop rotation and fall tillage. Always be sure to consult the pesticide label for specific information.

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**WATERMELON DISORDERS** - (*Chris Gunter*) - As the melon harvest begins to wind down, you have a good idea of the fruit disorders that have occurred in your crop this year. Watermelons are susceptible to various physiological disorders. Prevention of these disorders before they appear in your crop will help improve harvestable yields and increase crop quality.

**Hollowheart** is a separation of the flesh within the fruit. This disorder can occur wherever watermelon is grown. It becomes economically significant when the incidence of hollow melons in a load leads to rejection of the shipment. Generally the incidence of hollow heart is higher in crown-set fruit. Seedless fruit tend to have more hollow heart than seeded varieties. This disorder is likely to occur early in fruit development. Though the exact cause has not been clearly defined, environmental conditions appear to be involved. Rapid fluctuations in water availability and/or temperature early in the season may increase the incidence of this disorder. Poor pollination and excessive water or nitrogen during fruit set also increase the amount of hollowheart in the crop. The solution to this disorder is to maintain even growth throughout the season, avoiding periods of rapid growth followed by slow growth periods or vice versa. Careful water and fertility management will help to even the growth rate through the season. In areas where hollowheart has traditionally been a problem, selecting cultivars that have lower rates of hollow heart is desirable. Low pollination has also been linked to increased hollowheart, especially in seedless watermelon, so insuring maximum pollination is also important to reduce the disorder in these melons.

**Misshapen or bottleneck** refers to the constricted growth at the stem end of the fruit. This is usually due to a lack of pollination. This becomes clear, in seeded watermelon, when the fruit is opened and no seeds are visible at the stem end of the fruit. Oblong varieties are more prone to bottleneck than varieties with a round shape. Poor pollination can result either from low bee populations or poor bee activity due to weather or other factors. Check the most recent ID-56: Midwest Vegetable Production Guide for Commercial Growers <<http://www.entm.purdue.edu/entomology/ext/targets/ID/index.htm>> for current recommendations regarding hive numbers and hive health.

**Sunburn** is another disorder that appears each year and is common in all watermelon growing areas. It appears as a gray or white area on the upper surface of the fruit. This disorder occurs when the fruit surface is exposed to the sun. When vines are vigorous and healthy, fruit are protected from direct exposure to the sun by the foliage. If there is a disease or stress on the plant, which causes a breakdown of the leaves or dying back of the foliage, developing fruit can be exposed to the sun. Maintenance of healthy foliage through proper water, nutrient and disease management will help minimize the occurrence of sunburned fruit. Also, fruit with dark colored rinds are more susceptible to this damage than those with light colored rinds. Proper variety selection may help reduce the incidence of this disorder.

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**PUMPKIN TWILIGHT MEETING** - (*Liz Maynard*) - This year's Pumpkin Twilight Meeting will be held on September 18 at Coulter's Farm in Westville. The program will begin at 5:00 p.m. with a picnic dinner. Following the meal, there will be short presentations by Purdue Extension Specialists and a tour of the pumpkin variety trial. Coulter's Farm is located in LaPorte County on US Highway 421 just south of Westville, about 10 miles north of US 30. If you plan to attend the dinner, please call 219-785-5674 or 1-800-872-1231 ext. 5674, or <e-mail [kcamel@purdue.edu](mailto:kcamel@purdue.edu)>, and leave a message including your name and the number of people who will be eating dinner (there is no charge for the meal). For more information about the program contact L. Maynard at 219-785-5673 or <[emaynard@purdue.edu](mailto:emaynard@purdue.edu)>.

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**WEB CORNER** - (*Chris Gunter*) - With all the information on the Internet these days, it's almost impossible to separate the useful from the useless. In this feature, we'll be poking around in the corners of the World Wide Web uncovering and reviewing web sites that may be of interest to you. Let us know if you have a site that you find useful and we'll feature it in the Web Corner.

<<http://agweb.okstate.edu/pearl>> is a very useful site from Oklahoma State University. PEARL is put together and maintained by the Cooperative Extension Service for Oklahoma. There are bulletins from many areas of agriculture including economics, aquaculture, horticulture, insects, plant diseases, wildlife and waste management. Publications are posted in an easy to view online format that can be printed from the web. Keep in mind the information is geared toward residents of Oklahoma, so recommendations may not be directly applicable to our growing conditions, but it is a great place to get information on a wide range of topics.

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