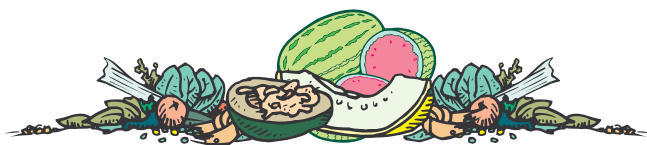


VEGETABLE CROPS HOTLINE

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

Dan Egel, Editor
(812) 886-0198
egel@purdue.edu

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SWEET CORN INSECTS – (Rick Foster)
– The following article was written as a *Vegetable Crops Hotline* - BULLETIN, August 3, 2001. Within the last couple of days there has been a dramatic increase in the number of corn earworm moths being caught in pheromone traps, in the range of 50 to 100 moths per night. In addition, there has been an upswing in the number of European corn borer moths in blacklight traps. Now is the time of the year when you sweet corn growers can prove just how good you are at controlling insects.

By way of review, European corn borers are best controlled by spraying when sweet corn is at the pre-row tassel stage. I always describe this stage as being when you can't see the tassels where looking horizontally across the field, but when you look down at plants you can see the tassels starting to emerge. Spraying at this stage will allow you to kill the larvae feeding in the whorl before they migrate to the ear. For corn earworms, the optimal time to spray is when there are fresh green silks on the ears. The moths like to lay eggs on green silks, and the larvae that hatch from those eggs move right down the silks into the tip of the ear. The idea is to have insecticide present so that the larvae are killed before they get into the ear tip.

Given the moth numbers we are seeing and the high temperatures we are enjoying (?), these are my recommendations. Begin spraying at the pre-row tassel stage. Apply the next spray when the sweet corn is 70% silked or 5 days after the first spray, whichever comes first. After the 70% silk spray, make additional applications every 2-3 days until silks turn brown. If the temperature cools down, you may be able to increase the interval to 4 days.

At this time of year, I recommend that you use the best insecticides you have available. Based on 17 years of experience, I think that the best sweet corn insecticides are Warrior and Capture. Both are excellent insecticides and I have not been able to determine that either one is better than the other in numerous side-by-side comparisons. Use the one that you have had success with or that you can get the best deal on. Feel free to call if you have specific questions (765-494-9572).



DOWNY MILDEW OF PUMPKIN - (Dan Egel) - Downy mildew of pumpkin is not usually an important disease in Indiana. This is because downy mildew does not overwinter in Indiana and must "blow in" from southern states where the disease is active on plants all year long. Therefore, downy mildew in Indiana is a late season disease if it strikes at all. Nevertheless, growers who have had experience with the disease in the past may be wondering what to do to prevent the disease.

I will start with a description of the disease. Downy mildew is primarily a leaf disease. Often, the first symptoms one observes are yellow, angular or square looking spots on leaves. The underside of the leaves may be covered with a black fuzzy looking growth - this is the fungus that causes the disease. Leaves may eventually turn brown, crinkle and turn upwards as they dry. Severe outbreaks may result in the rapid death of vines, which in turn may cause handles on pumpkins to become brown.

Downy mildew requires a period of leaf wetness and high humidity for successful infection. Heavy dews can provide adequate moisture to get this disease going. Although the fungal spores may land in your field, there has to be leaf wetness for the disease to cause problems.

Since downy mildew does not overwinter in Indiana, rotation and tillage will not help to reduce the severity of downy mildew. (Growers will want to use these practices to manage black rot, bacterial spot and powdery mildew.) Any cultural practice, which allows good aeration between leaves, can lessen the impact of downy mildew. An example would be wider spacing between plants in areas that are prone to downy mildew problems. Although some resistance is present in cucumbers and melons, there is no resistance among pumpkins and squashes.

Fungicides, which may be used to control downy mildew, are listed below.

Fixed copper compounds - Will provide some protective control against downy mildew, especially when mixed with Maneb and Manex (see below). Copper compounds will also provide some protection against bacterial spot of pumpkin.

Maneb, Manex and Bravo, Echo - Protective control against downy mildew as well as black rot of pumpkin.

Flint, Quadris - These systemic fungicides will help control downy mildew as well as powdery mildew. Quadris is also labeled for black rot of pumpkin. Thus, growers worried about downy mildew can apply these fungicides and manage additional pumpkin diseases as well.

Aliette, Ridomil Bravo Gold - Aliette is a systemic fungicide that is labeled for downy mildew but not for powdery mildew, black rot, etc. Therefore, we do not recommend applying Aliette unless downy mildew has been confirmed. Ridomil Bravo Gold is a combination of Ridomil, a fungicide active against downy mildew (and related fungi) only and Bravo, which is active against a wide range of fungi. Therefore, Ridomil Bravo Gold can be used to manage downy mildew as well as black rot.

I hope the above information will help those growers worried about downy mildew. Always read the label carefully.



TIPS ON STORING PUMPKINS - (*Liz Maynard*) - Pumpkins that have already turned orange may need to be held for several weeks before they can be marketed. If it is feasible to harvest now and store under proper conditions, that would be recommended. The ideal storage environment for mature pumpkins is 50°F to 55°F with a relative humidity of 60% to 70%. Temperatures below 45°F to 50°F will cause chilling injury, reducing storage life and increasing decay. Low relative humidity increases water loss, resulting in reduced weight, and if excessive, shriveling of pumpkins. High relative humidity provides a favorable environment for fungal and bacterial decay organisms. Jack-o-lantern pumpkins held under ideal conditions may keep for 2 to 3 months. All fruit placed in storage should be free of disease, decay, insects, and unhealed wounds. It is desirable to place pumpkins on pallets or other material to raise them off the floor of the storage area. The storage area should have good ventilation and pumpkins should be stacked so that air can move around them.

Often it is not feasible to harvest pumpkins early and store them until they can be marketed, and so they are stored in the field. If vines are healthy, storage in the field can be successful for a few weeks. If the vines die back, damage to the fruit from sun and insects is more likely. In any case, it is important to scout for insects feeding on the fruit, and control them if necessary. In fields that have a history of *Phytophthora* blight, *Fusarium* fruit rot, or black rot, field storage may increase the incidence of these problems, particularly if we have a period of wet weather. At this time of year, storing pumpkins in the field is more problematic because of the high temperatures. Mature pumpkin fruit do not keep well in the field in the heat of August.

As you plan for storage and marketing, keep in mind that pumpkins aren't just for Halloween any more. Many fall decorative displays include pumpkins, and those displays begin showing up as Labor Day approaches. One of the best solutions to early-maturing pumpkins may be finding an early market.



USDA QUALITY LOSS PROGRAM FOR 2000 - (*Liz Maynard*) - The USDA will begin taking applications for the Quality Loss Program for the 2000 crop year on August 13. This program compensates farmers who suffered at least a 20 percent loss in 2000-year crop quality due to weather-related disasters. Eligible crops are those produced and harvested in the 2000-crop year and which suffered a minimum of 20 percent quality reduction. Documentation of produce quality loss is required. For more information contact your local USDA Farm Service Agency.

TOMATO FRUIT DISORDERS - (*Chris Gunter*) – Harvest time is approaching for tomatoes in Indiana and once the fruits start coming off the vines you can examine fruit quality. There are several fruit disorders that are the result of infection of the plant or fruit by various fungi or bacteria. There are also fruit disorders that do not result from infection by an organism; they result from some condition which occurred during the season that changes the fruit quality. This article will focus on these types of physiological disorders. The disorders discussed here are catface, growth cracks and yellow shoulder.

Catface generally appears as a misshaped fruit with scars and holes appearing in the blossom end of the fruit. It may also appear as an enlargement or perforation of the blossom scar, though the fruit shape is normal. Exposure of the blossoms to cold temperatures prior to anthesis has been linked to an increase in the appearance of catface. Pruning of plants and high nitrogen may also contribute to the appearance of the disorder. It is best to avoid the disorder by protecting plants from cold temperature or by planting less susceptible varieties.

Growth cracks appear as splitting of the outer layer or epidermis of the fruit in either concentric circles around the stem end or radial cracking from the stem end towards the blossom end of the fruit. Cracks usually appear towards fruit maturity at the mature green stage or in less susceptible varieties at the red ripe stage. The earlier the growth crack develops, the larger it is likely to be once the fruit is harvested. Rapidly growing fruit and fruit exposed to the sun tend to crack more readily. Also cracking is more severe under hot, dry conditions followed by rainfall. Selecting cracking resistant cultivars as well as careful management of water availability (through irrigation management and the use of plastic mulch) is the best defense against growth cracking.

Yellow shoulder disorder appears as areas under the skin of ripe fruit that range from internal white tissue to distinct yellow or green sections. The disorder involves abnormal fruit development and is not a delay in fruit ripening. The disorder appears to be related to potassium availability in the soil. Adequate potassium fertility early on in fruit development is important in controlling the appearance of the disorder. Also, selecting varieties that have reduced susceptibility to the disorder is also advised.

Proper water management, fertility, disease control and variety selection are key factors in reducing losses due to these physiological disorders of tomato fruit. By maintaining crop health prior to and during fruit development, the highest quality fruit can be produced. High quality fruit can be assured of commanding premium prices in the market place and are always in demand.

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Vegetable Crops Hotline
c/o Daniel S. Egel
Southwest Purdue Agricultural Program
4369 N Purdue Rd
Vincennes, IN 47591