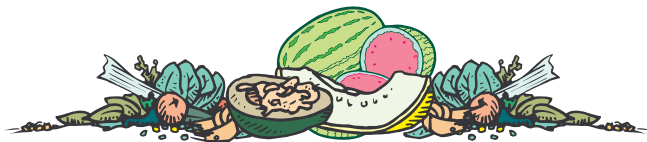


VEGETABLE CROPS HOTLINE

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

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LAST SUMMER ISSUE - (Dan Egel) - This Issue of the *Vegetable Crops Hotline* will be the last until November. At that time, the *Vegetable Crops Hotline* will discuss vegetable research results, pesticide label changes, and any other items which we feel will be of interest. There will also be a *Vegetable Crops Hotline* issue in January to discuss similar items. The idea is to produce the *Vegetable Crops Hotline* at a time when most growers will have a little more time to sit down and read it. If you have any questions, comments or ideas for subjects that you would like to see covered, please call me at (812) 886-0198 or email me at egel@purdue.edu.

DOWNY MILDEW OF PUMPKIN - (Dan Egel) - Downy mildew can be a severe disease of all cucurbits (cucumber, muskmelon, pumpkin, watermelon, squash, etc.). However, downy mildew is an infrequent visitor to Indiana since the fungus that causes downy mildew does not over-winter here. Spores of the downy mildew fungus can only survive the winter in a warm climate where cucurbits are grown year round. Therefore, downy mildew is only a problem in Indiana when the spores are blown up north, usually in late summer and early fall. Pumpkins are the usually target since they are grown in late summer and early fall.

Last week, downy mildew was reported on winter squash in the Milwaukee area of Wisconsin. The spores of the downy mildew fungus are on the move: growers with late summer and fall cucurbits should beware. 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 and crinkle. The leaves may turn upwards as they dry. 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. 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. There are fungicides which can be used to help to control downy mildew. Among the possible fungicides are: Ridomil, Bravo Gold, Aliette, and mancozeb type products. Be sure to read the label carefully to see which product is labeled for your crop.

BACTERIAL CANKER OF TOMATO - (Dan Egel) - Many of the control measures for this disease are preventative. Such measures are, therefore, early season tasks. Since the disease and its effects are visible now, it may be useful to review the disease and some control measures.

Recently I visited a fresh market tomato field with bacterial canker. The disease was primarily confined to 2 varieties. Tomato plants of these varieties were wilting. The leaves of the plants that hadn't already wilted had a dark brown border surrounded by yellow on the outside. In some instances, the fruit may have a "bird's eye spot": a white spot with a dark center.

Bacterial canker moves into a field primarily through contaminated seed or diseased transplants. Therefore, this disease is one to be prevented more than controlled. The most important control measure is to carefully monitor the source of seed and transplants. If the transplants are "home-grown" from seed, the seedlings should be inspected frequently. Discard or at least remove any suspicious seedlings. Sanitation is critical. Greenhouses should be cleaned up after transplant production. If transplants are shipped to the grower, the transplants should be inspected upon arrival. Treating seedlings or field plants with bactericides such as copper has not proven effective. If disease has been confirmed in the field, rotating away from the disease

will help to control future outbreaks. Tomato stakes should be cleaned and soaked in a 1-percent bleach solution after use.

If these symptoms sound familiar, confirm the presence of the disease and take the above preventative measures to avoid the disease next year.

PROPOSED RULES FOR ORGANIC PRODUCTION IN INDIANA - (Liz Maynard) - Indiana's law governing organic agriculture is nearing implementation. The Indiana Organic Peer Review Panel will hold two additional public field hearings on the proposed rules:

Wednesday, Sept. 8, 1999, 7 p.m.
Former State Area Conference Room
Bartholomew County Extension Office
1971 State St., Columbus

Thursday, Sept. 16, 1999, 7 p.m.
Board Room
Honeywell Center
275 W. Market Street, Wabash

Comments made at a previous public hearing on August 23 may be viewed on the internet at www.ai.org/oca. Written comments on the rule will be accepted through September 23. Comments may be sent to: Ms. Kathy Altman, Office of the Commissioner of Agriculture, 150 W. Market St., Suite 414, Indianapolis, IN 46204; emailed to: kaltman@commerce.state.in.us; or faxed to Kathy Altman at 317-232-1362. Copies of the rule are available from the Office of the Commissioner of Agriculture, (317) 232-8770, or on the internet at www.ai.org/oca.

FRESH MARKET TOMATO PRUNING TRIAL - (Liz Maynard) - This year I looked at the effect of pruning on fresh market tomatoes. After four weeks of harvest, preliminary results are in. Fourteen semi-determinate varieties were grown on beds with black plastic mulch and trickle irrigation, and supported with the stake and weave system. Half of the plants of each variety were pruned. We removed suckers on the lowest nodes, leaving 3 suckers below the first main stem flower cluster. Tomatoes showing color were harvested weekly beginning August 5.

Table 1 shows the results. Pruning decreased marketable yield



by about 1/3. Pruned plants had larger fruit, averaging about 1 oz. heavier than unpruned plants. Pruned plants also had a higher percentage of culls. Some varieties were more strongly affected by pruning than others.

A detailed report of results will be available in the Midwest Vegetable Variety Trial Report to be published this winter.

Table 1. Effect of pruning fresh market tomatoes on marketable yield, fruit size, and percent culls.

| | Lb./plant | Lb./fruit | % Cull |
|------------|-----------|-----------|--------|
| Pruned | 7.4 | 0.61 | 36 |
| Not pruned | 11.0 | 0.54 | 29 |

Fig 1. Effect of pruning fresh market tomatoes on marketable yield, fruit size, and percent culls



ASPARAGUS – (Jerry Brust) – My first year planting of asparagus looks pretty good, but is being heavily attacked now by asparagus beetle larvae. In some rows, the larvae are defoliating the plants – which cannot be allowed. Unfortunately, none of the organic sprays has worked in controlling the larvae. Azadirachtin (Neem) has helped somewhat, but not enough. I might have had better luck with the organic insecticides if the asparagus was in an organic system. In organic systems, there are many checks and balances for insect control. However, some pests are very persistent and sometimes the checks and balances are not enough. I am trying a newer insecticide that is very environmentally friendly, but not organic – at least not yet. It is Spintor, which uses the fermentation of a soil bacteria, *Saccharopolyspora spinosa*, to kill larvae. The active ingredient is Spinosad. It works well on lepidopteran larvae so we'll see if it can work on Asparagus beetle larvae. It should have minimal effects on natural enemies.

SQUASH VINEBORER - (Jerry Brust) - We continue to catch some male moths in our pheromone traps. Apparently, there is a pretty good population of 2nd generation borers this year. In pumpkin fields, we are finding a few of their eggs on vines. Few of these eggs (larvae) will be able to successfully overwinter. This is a very late flight of moths and is a trend I have been observing for the last couple of years. The squash vineborer moths appear earlier and earlier in the spring and stay around longer (hence the 2nd generation) in late summer, early fall. Moth activity in the spring should start somewhere between 950-1000 degree days_(50°) but I have been catching males at 450-500 degree days_(50°). This earlier and extended activity may be due to the large numbers of pumpkins that are grown now in the Midwest and/or the mild winters we have been experiencing the last 5 years. Moths are finding readily available sites for egg laying and the earlier they get started the better off they usually are. The earlier start can mean 2nd generations of moths that lay eggs on late plantings of squash or pumpkin. This is a development we will be watching closely in the next few years.

1999 YEAR IN REVIEW- (Dan Egel) - The '99 growing season started off pretty well. Growers told me that spring 1999 was the first "normal" spring for several years. There were sufficient rains to raise a crop, yet not so much rain as to keep growers out of the field. This pattern of moderate rains helped to lessen the impact of foliar diseases. In contrast, the constant rains of the 1998 season allowed foliar diseases such as gummy stem blight of watermelon and early blight of tomato to run wild through many vegetable fields.

The 1999 spring brought with it the typical insect problems; for example, cucumber beetles spread bacterial wilt to muskmelon plants. Corn flea beetles were numerous, especially in southern Indiana, as a result of the mild winter. The flea beetles were responsible for moderate to severe cases of Stewart's Wilt of Sweet Corn.

Fusarium wilt of watermelon was serious for many growers. The problem was worse in fields with a history of watermelon production.

Weather that started perfect, turned hot. The hot weather and relatively dry conditions caused some stress, especially to non-irrigated vegetables. Mites became a problem with many vegetables in response to the hot dry weather.

The disease sudden wilt of watermelon was severe in 1999. The problem has been only sporadic over the last few years. In 1999, entire fields were lost to this disease of unknown cause. The 1999 outbreak of sudden wilt may have been in response to the hot weather.

Virus diseases were a problem in some muskmelon fields again this year. In most cases, the aphids that spread the disease were not observed. The disease seems to be a result of aphids that stop in a field to briefly feed and then move on.

Pumpkin production has been hurt by the hot, dry weather. Although it is cool now, many pumpkin plants have small fruit that have ripened too early. The problem is worse in non-irrigated fields. Northern Indiana fields seem to be in better shape than those in southern Indiana.

Powdery mildew of pumpkins has been severe in some fields. This disease does not need leaf wetness to cause disease. The worst fields I have observed were not sprayed with a systemic fungicide in time to make any difference.

For the second year in a row phytophthora rot of pumpkin fruit has affected Illinois growers. This disease has either been a minor or unreported disease in Indiana thus far.

What will the year 2000 bring? Who knows, but at the *Vegetable Crops Hotline*, we will try to help you make some sense of it all.



1999 MIDWEST SMALL FARM CONFERENCE & TRADE SHOW - Nov. 19 & 20 held at 4-H Fairgrounds, Noblesville, IN. Workshops include Community Supported Ag, Organic Orchard, Herb Production & Marketing, Profitable Livestock Production, Cheesemaking, etc. Contact Steve Bonney at Sustainable Earth, 100 Georgton Ct., W. Lafayette, IN 47905; (765) 463-9366; sbonney@iquest.net.

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