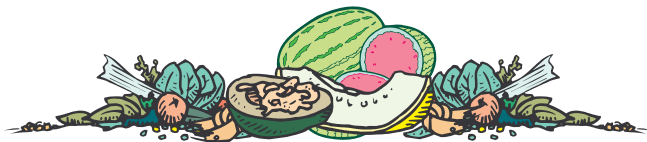


VEGETABLE CROPS HOTLINE

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

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JIM SIMON TO LEAVE PURDUE - (*Ed Ashworth*) - Professor Jim Simon will be leaving Purdue University in July 2000. Jim will be joining the faculty of Cook College of Rutgers University. Rutgers is the Land Grant University of New Jersey and Jim will be heading their new initiative in "New Use Agriculture and Natural Plant Products." This is an excellent opportunity for Jim and will provide him with many professional challenges.

Jim Simon had been a faculty member in the Department of Horticulture and Landscape Architecture for 18 years. He maintained an active research, teaching and extension program over that period and established a national and international reputation for his program in herbs and medicinal plants. Jim's contributions to Purdue University and Indiana agriculture will certainly be missed.

Vic Lechtenberg, Dean of Purdue's School of Agriculture has indicated that we will likely fill the vacancy created by Jim's departure during the current fiscal year. Certainly, the Department of Horticulture and Landscape Architecture is anxious to fill this position.

MITES REVISITED - (*Dan Egel and Rick Foster*) - Two spotted spider mites have been quite active in watermelon fields this year. In this article we review symptoms and management.

Damage caused by two spotted spider mites is usually first observed along the edge of a field. Older leaves are the first to show symptoms, turning yellow in the center of the leaf. Since mites often enter fields from weedy areas, concentrate scouting at the edge of fields. Webbing can be observed on the

underside of heavily affected leaves. Debris is often caught in the webbing causing the underside of leaves to look dirty or crusty. To look for mites, shake a leaf over a white sheet of paper. Mites can be seen to crawl on the paper. Mites can also be observed directly with a hand lens.

Damage from spider mite infestation can result from loss of leaves. Severely infested leaves will not support fruit ripening.

Loss of leaf cover can also result in sunburning. In severe cases, watermelon fruit may become rough to the touch, making fruit undersirable. Muskmelon can have similar symptoms, although fruit damage is not observed.

Two spotted spider mites should be managed much as one would manage other insect pests. Scout fields regularly for mite damage. Severe infestations may be difficult to control. Avoid applying insecticides to "prevent" mite damage. Application of insecticides when no pests are present will only serve to kill the beneficial insects that normally keep mites and other pests in check. When mite problems are identified, mark the area. Return to the field in a few days to see if the problem is spreading. If the problem appears to be spreading, apply Dimethoate at 1.5 pt/acre or Kelthane 35WP at 1 to 1.6 lb/acre. Several days after applying the miticide scout the fields to assist the control you received. Read all labels carefully.

SWEET CORN INSECTS - (*Rick Foster*) - We will soon be reaching the time of year that will test how good you are at controlling insects on your sweet corn. Late planted sweet corn (harvested in the last half of August or later) is usually severely attacked by corn earworms, European corn borers, and fall armyworms. Sweet corn growers should have traps in place now to monitor corn earworms and corn borers. Fall armyworms have been observed damaging sweet corn in several areas of the state.

To briefly review, sweet corn needs to be protected when it is in a vulnerable stage and the insects are

active. For corn borer and fall armyworms, the vulnerable stage is from late whorl until silks turn brown. The best time for control is when tassels are just starting to emerge. For corn earworm, the vulnerable stage is when silks are green. You can tell that the insects are active by monitoring adult activity with pheromone or black-light traps. Generally, we would say that if you are catching more than 10 moths per night, then spraying an insecticide is justified. For late-planted corn, you will usually exceed this threshold regularly. The best materials available are Warrior and Capture, although several other pyrethroids will also give good control.

In addition, corn rootworm beetles and Japanese beetles are likely feeding on your silks. Remember that each silk must be pollinated to produce a kernel, so each silk that is eaten off by a beetle and not pollinated is a kernel that will not develop. Obviously, good pollination is critical for sweet corn producers. Avoid these problems by keeping these beetles under control. The pyrethroid insecticides you are using for control of caterpillars will also control these beetles.

RUST IN SWEET CORN - (*Loretta Ortiz-Ribbing*) - This article was adapted from the *Illinois Fruit and Vegetable News*. June storms in the Gulf of Mexico and elsewhere have swept common rust into several midwestern and eastern states earlier than normal. Severe rust infestations have been reported from New York, Michigan, Ohio, Indiana, and Illinois. Common rust is caused by the rust fungus *Puccinia sorghi*. The rust pustule on the leaf is the main visible symptom. The pustules are cinnamon brown in color and circular to elongate in shape. They appear on both the upper and lower surface of the leaf and eventually turn brownish black with age. Rust spores are carried by wind from southern areas of the country usually in mid-June to mid-July. If conditions are dry when spores arrive and fall onto growing corn, it is still possible for some infection to occur in the whorl, where moisture collects allowing spores to germinate. Yield loss can result when a significant percentage of leaf area is



infected however the severity of this disease depends on hybrid susceptibility and the growth stage when infection occurs. Development of this disease is favored by humid, wet weather and by cool temperatures (60-77°F). Hot and dry conditions will slow down or stop the development of the pathogen.

There is another rust, besides common rust, that can be a problem on sweet corn. This rust is called southern rust, and it is caused by a similar but different fungal organism, *Puccinia polysora*. The fungal spores of southern rust are also wind blown and carried from tropical areas northward to the midwest. The development of this pathogen is favored by warmer conditions than common rust. Symptoms of southern rust resemble common rust except for slight differences. Firstly, pustules of southern rust are usually lighter in color (cinnamon brown to orange vs. cinnamon brown) and they are more circular to oval in shape vs. more elongated. Secondly, southern rust pustules are found mainly on the upper surfaces of corn leaves, whereas common rust pustules are found on upper and lower leaf surfaces. Thirdly, the spores in the pustules of southern rust may erupt or break through the leaf epidermal tissue more slowly than those of common rust.

Control measures for rust diseases on sweet corn include using rust resistant hybrids for future plantings and application of a registered fungicide. Recommended fungicides include chlorothalonil (Bravo, Terranil or Echo) or Dithane, Manzate, Penncozeb or Manex II and Tilt. Note the 14-day pre-harvest intervals for Tilt and chlorothalonil and 7-day pre-harvest interval for Dithane, Manzate, Penncozeb and Manex II. Read and follow all label directions and restrictions.

CABBAGE INSECTS - (*Rick Foster*) - For late plantings of crucifers, the most important insects usually are imported cabbageworm and cabbage looper. Diamondback moth can be a problem, but usually not as bad as in spring crops. This season, we are seeing heavy populations of imported cabbageworms, but so far cabbage looper numbers appear to be fairly low. Imported cabbageworm is relatively easy to control, either with pyrethroid insecticides or Bt materials. Cabbage looper is more difficult to kill and insecticides should be targeted toward killing small loopers whenever possible.

POTATO LEAFHOPPERS - (*Rick Foster*) - Heavy populations of potato leafhoppers have been observed in potatoes and snap beans. While the time for control in potatoes is probably past for most growers, late planting of beans should be watched carefully. If you wait until you see the symptoms before taking action, you have already

suffered serious yield loss. Scout for the leafhoppers by brushing your hand through the bean plants and watching for the green leafhopper adults to fly away. You can look for the nymphs on the underside of leaves. See ID-56 for thresholds and recommended insecticides.

COOL TEMPERATURES AND GROWING DEGREE DAYS - (*Liz Maynard*) - Cool weather the third week of July has slowed maturity of vegetable crops. Consider sweet corn, for example. The last two years, the variety Trinity has averaged about 1,320 growing degree days (GDD) from seeding to harvest in variety plots at Pinney-Purdue. Last year at this time 1,256 GDD had accumulated since May 18. This year only 1,176 GDD have accumulated since planting May 18, putting us behind by 3 - 4 days of 'normal' temperatures. In a normal year, 1,335 GDD would have accumulated.

Cool days in May and early June are partly responsible for this delay, but the week of July 15 - 21 accumulated only 118 GDD, compared to 164 in the same period last year, and 161 in a 'normal' year. Sweet corn is typically ready to harvest 18-21 days after silking, but crops which silked before this cool week will probably take 2 - 3 days longer, unless we have a period of hot weather.

NW INDIANA VEGETABLE TOUR - (*Liz Maynard*) - On August 9th a vegetable tour will be held in LaPorte County. To join the tour, meet at one or both of the tour stops listed below.

1:15 PM: Garwood Orchards, 5911 W. 50 S., LaPorte, IN. From State Route 2 between LaPorte and US 421, turn north on 500 West and then west onto 50 S. Meet at the farm market. Garwood Orchards is a designated Hoosier Homestead, having been farmed by the same family since 1831. Major crops and products include apples, cider, pumpkins, vegetables, and raspberries. We will tour the packing and cooling facilities and then go to the field to see sweet corn, peppers, pumpkins, snap beans, and tomatoes.

3:45 PM: Pinney-Purdue Ag Center, 11402 S. County Line Rd., Wanatah, IN. From Garwood Orchards, take 50 S. east to 500 W., turn south on 500 to State Route 2. Turn west on SR 2 to US 421. Turn south on 421 to US 30. Turn west on US 30 to County Line Rd. Go north on County Line Rd. 1/4 mile. Pinney-Purdue Ag Center is the site of agronomic and horticultural crop research conducted by Purdue staff. We will tour sweet corn and tomato variety trials, and see a demonstration of early muskmelon production.

The tour is sponsored by Purdue Cooperative Extension Service, LaPorte and St. Joe Counties and the Dept. of Horticulture and Landscape Architecture of Purdue University. For more information call 219-785-5673.

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