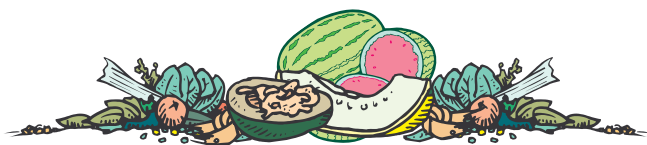


VEGETABLE CROPS HOTLINE

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

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DISASTER RELIEF UNDER NAP - (Brad Summers) - NAP formally known as the Noninsured Crop Disaster Assistance Program is available to producers who plant uninsurable crops and experience disasters. Fruit and vegetable growers are eligible for NAP. To be eligible for assistance in the event of a disaster, a producer must provide certain information to FSA annually, before a disaster occurs.

Specifically, to be eligible for NAP, producers must accurately report the acreages and shares for all crops potentially eligible for assistance by July 15 of the crop year. Losses must be reported to FSA within 15 days of the date disaster occurs or the date crop damage becomes apparent. Growers must certify crop production history and report current year production. Also, the producer must be in compliance with highly erodible land and wetland provisions.

Assistance becomes available when natural disaster causes production losses that are greater than 35% of an eligible crop over a geographic area as defined by FSA. A geographic area must be at least one county in size, 320,000 acres or an acreage in which the annual value of all crops is \$80 million. At least 5 producers must have been affected by the disaster on separate and distinct farms. The Deputy Administrator for Farm Programs (DAFP) must evaluate and approve all NAP area requests.

Payments are calculated on losses in excess of 50% of the expected yield and at 55% of the average market price of the commodity. Actual yields may be accepted from producers if at least 4 years of acceptable production records is provided to FSA before July 15 each year (for the previous year's production). Payments are

limited to \$100,000 for any given crop year.

For more information please contact the Knox County FSA Office at 2013 Hart St. Vincennes, IN or call (812) 882-8210.

SWEET CORN RUST UPDATE - (Gerald Pataky) - "The "new" race of common rust (*Puccinia sorghi*) that infects sweet corn with Rp1D resistance is present in the

Midwest again in 2000. Isolates were collected from Los Mochis, Mexico in April, from Belle Glade, FL and Hondo, TX in April, and from Tifton, GA in May. These isolates were assayed in the greenhouse and had similar patterns of virulence as the isolates collected from IL, WI, and MN in 1999. In June, rust pustules were observed on Rp1D hybrids in Henderson, KY and Johnston, IA. Hybrids that do not have Rp1D resistance had many more pustules than the Rp1D-hybrids, so the "new" race appears to be at a low frequency at present. However, by mid-August or September, this race is likely to be prevalent in late-planted fields of Rp-resistant sweet corn where selection for this race will occur.

By mid-July, pustules were observed on Rp1D-sweet corn hybrids as far north as Sleepy Eye, MN. Through July 26, Rp1D-hybrids in Urbana, Manito, and Rochelle, IL still had a relatively resistant reaction with only a few sporulating uredinia. Thus, the new race presents little threat to sweet corn that will mature in the next three or four weeks, but it may be severe on late-planted Rp1D-hybrids if weather is conducive for rust development.

WATERMELON RIND NECROSIS - (Dan Egel and Rick Latin) - Watermelon fruit grown for the variety trials here at the Southwest Purdue Ag Center in Vincennes have a higher than usual incidence of internal rind necrosis. Characteristic symptoms include a corky, red-brown layer of tissue that occurs on the inside of the rind of affected fruit. Such fruit sometimes have a subtle knobiness that can be felt on the outside of the fruit. Internal rind

necrosis, which affects only watermelon, does not affect the integrity of the fruit however; consumers may reject the fruit due to appearances.

Not much is known about internal rind necrosis. Some reports associate the appearance of symptoms with drought stress or mineral nutrition. The initial harvest seems to yield a greater percentage of symptomatic fruit than subsequent harvests. Internal rind necrosis is apparently a non-infectious disorder and therefore will not spread from fruit to fruit.

PHYTOPHTHORA BLIGHT ON PEPPERS - (Rick Latin) - Heavy rains in the Midwest have contributed to numerous outbreaks of *Phytophthora* blight in peppers.

Phytophthora blight produces a variety of symptoms on **peppers** including a general wilt of the plant, dark, brown-black lesions that girdle roots, stems and branches, rapidly expanding brown-tan spots on leaves, and a rapid rot of affected fruit (fruit appear to be covered with white mold in wet weather or after heavy dews). The disease usually appears first in low areas of the field where soil moisture levels remain high, or in shaded areas of a field such as those that occur along fencerows. If the disease is diagnosed in its initial stage, such that plants with symptoms are restricted to one or a few small clusters, then there is a good chance that fungicide sprays can save much of the crop. If most of the plants are affected to the point of wilting and show more than a few lesions on stems or branches, then the chance of saving fruit on symptomatic plants is not good.

Prevention is the only viable control strategy for this disease. We've discussed water management (avoiding heavy, poorly drained fields) and planting on raised beds numerous times. Ridomil 2E applied to the base of young plants on raised beds will also help prevent a *Phytophthora* blight outbreak. However, disease outbreaks are virtually unavoidable in fields with a history of the disease and frequent, heavy rainfalls. If *Phytophthora* blight has occurred on your farm this year, consider resistant varieties and rotation for next year. The development and release of *Phytophthora* resistant pepper



varieties remain the single ray of hope for dealing with this disease in the future.

Because the pathogen has a broad host range (including pumpkins and winter squash), pepper fields affected by the disease become a major threat to **pumpkins**, see *Issue #379, July 13*. Root decay and vine collapse are not always the initial symptoms associated with Phytophthora blight on pumpkins. Sometimes the appearance of clusters of rotting fruit in the field first attract attention. The outbreaks are almost always in low-lying areas in the field where plant surfaces tend to remain wet for extended periods of time whether the moisture is in the form of rain or dew.

Pumpkin fruit are especially prone to infection at the top of the pumpkin, close to where the fruit is attached to the stem. The depression in the fruit surrounding the stem attachment serves as a reservoir for moisture and provides a very favorable setting for infection by spores of the Phytophthora fungus. The spores can be produced on other parts of the plant or on fruit of other plants (the fluffy white mold associated with the fruit rot contains millions of spores!). Spores also can be deposited into pumpkin fields after traveling on air currents from another source of infection...like a field of affected peppers!

Fungicides can be used to protect against Phytophthora infection, but it is an uphill battle. The most effective fungicides are protectants such as chlorothalonil (Bravo) and mancozeb. Copper is probably marginally effective. I do not think Ridomil will be worthwhile. Ridomil is adequate as a systemic fungicide, but it is not effectively absorbed or translocated to fruit in amounts that will help reduce fruit rot.

Phytophthora blight is difficult to deal with, and must be managed with all available resources over a period of time. Do everything you can to avoid an early season outbreak that may jeopardize your other crops, and don't rely only on fungicides for control.

EUROPEAN CORN BORERS IN POTATOES - (Rick Foster) -

Potato growers may have noticed a fairly substantial number of vines dying and falling over. Upon closer inspection, you may notice a hole in the stem, and possibly a caterpillar or its pupae. European corn borer has caused this damage. While this injury is not rare, we don't often see it quite as heavy as we have seen this year. At this point, there is nothing you can do about it. Do not apply insecticides because the damage has already been done and the borers have completed their feeding.

PUMPKIN DECLINE - (Dan Egel) - Growers from around the state have reported a disorder which we have been calling pumpkin decline. The first symptom is often leaves that turn yellow, with a brown necrosis around the edges. The vines will continue to decline, sometimes resulting in the death of the plant. The roots seem to be relatively unaffected. Yields can be reduced.

The causes of the decline are unknown at this time. Below I discuss some diseases and pests that might contribute to a general pumpkin decline. It may well be that pumpkin decline is caused by a combination of several of the below factors. To better recognize these diseases see <<http://www.agcom.purdue.edu/AgCom/Pubs/botany.htm>> for the publication "Identification and Management of Pumpkin Diseases," or see your county educator.

Bacterial wilt - Whether or not pumpkins are affected by bacterial wilt is a matter of some debate. We know cucumber beetles will transmit bacterial wilt if the plant is in the 5 leaf stage or younger. At Purdue, we have not been able to transmit bacterial wilt to older plants. So, if numerous cucumber beetles were feeding on your pumpkin seedlings, you might see pumpkin vines wilt, turn yellow and die. Most of the "pumpkin decline" I see looks more like a slow decline and not an actual wilt.

Squash vine borer - This pest will lay eggs at the base of a vine. The eggs hatch into larvae that will burrow into the center of the vine. If the damage is severe enough, the vine may wilt and die. The damage will be restricted to the vine that was damaged. The vine borer may be found inside the yellowed vine by cutting it open with a pocketknife. The borer larvae will look something like the grubs you dig out of the yard: a segmented dirty white worm with a black head. If you can't find the borer, look for an entry hole and some sawdust-like frass (feces). Most of the yellowed pumpkin vines I see show no evidence of squash vine borer.

Powdery mildew - Although the talcum powder-like symptoms on the leaves and stem of this disease are easily distinguished from other diseases, the overall loss of vigor caused by powdery mildew may look similar to the decline this article describes. Most growers should have applied a systemic fungicide to protect against powdery mildew unless a powdery mildew tolerant variety/hybrid was chosen.

Root rot - The roots should be white or nearly so. If the roots are dark or have red to purple lesions on them, it may explain the general decline of the pumpkin plant. Are the affected plants in a low spot in a field? If so, rotted roots due to excess moisture may be the problem. Phytophthora may cause a root rot of pumpkin.

Fusarium crown rot - Check the area of the plant where the stem meets the roots. Does it appear healthy or is it discolored? This disease could also lead to dead or dying plants.

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