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The IPM Scout

FORECASTING CURCUBIT DOWNY MILDEW

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Downy mildew is one of the most destructive diseases of pumpkin and most other cucurbits in the southern U.S. This disease is caused by a fungus with

spores that can be blown long distances by wind. Downy mildew does not survive year-round in areas with significant winter freezes. The fungus is spread from south to north by prevailing winds.

Recently, a series of computer models using weather predictions have been developed at North Carolina State University that show where spores will be blown. Once a source of spores has been identified, the forecasts show the most likely pathway the spores will travel over the next 48 hours. A weather forecast also shows if the conditions at the target site will be favorable for downy mildew to develop. This disease needs warm temperatures and wet conditions to develop and spread.

How can the forecasts help manage downy mildew? Because this disease spreads so rapidly, fungicides are most effective if they are applied before downy mildew starts. The forecasts give growers a site specific warning for downy mildew outbreaks 48 hours ahead of time. Forecasts are available on the Internet at <http://www.ces.ncsu.edu/depts/pp/cucurbit/>.

There are a number of fungicides which can control downy mildew, although to stop the disease, they must be applied before too much of the foliage is affected. General protectants are maneb and chlorothalonil. Fungicides with specific activity against downy mildew that are labeled on pumpkin include Ridomil Gold Bravo, Flint, Quadris, and Aliette.

NOVA: A NEW POWDERY MILDEW FUNGICIDE

The U.S. EPA recently registered a new fungicide to control powdery mildew on cucurbits. The fungicide is NOVA 40 W, which has been labeled for several years on tree fruits. This fungicide is very specific and will only control powdery mildew on cucurbit crops (and a few other diseases on other vegetables and fruits).

Nova can be applied at 2.5 to 5.0 oz. per acre on cucurbits every 7 to 10 days. A maximum of 5 applications at the high rate may be made per crop. To obtain good control, begin applications at the first sign of powdery mildew. The preharvest interval is 0 days (may be sprayed the day of harvest) but the re-entry interval is 24 hr. The complete label can be found at <http://www.rohmhaas.com/agsection3/Sec3/NOVA/nova.pdf>.

Although the label does not mention problems with resistance to Nova, this fungicide should be used with caution. Resistance to the active ingredient in Nova has already been found in the cucurbit powdery mildew fungus in the laboratory. Growers are urged to rotate Nova with other powdery mildew fungicides, such as Quadris, Flint, Benlate, or chlorothalonil. The optimum schedule for powdery mildew control and resistance management would be spray first with Bravo, second with Quadris or Flint, third with Nova + Bravo, then continue to rotate Quadris or Flint with Nova + Bravo. Nova should be dropped from the spray program by the second last spray of the season.

INSECTS INJURIOUS TO PUMPKINS IN SOUTH CAROLINA

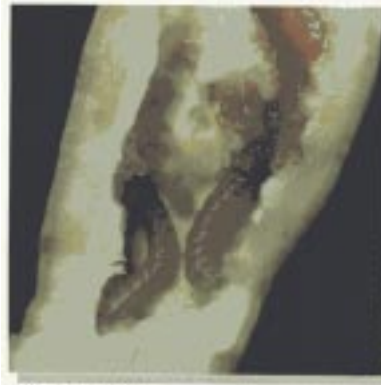
*Randall P. Griffin, Professor of Entomology
Clemson University*

Insects could be considered a minor pest of pumpkins when compared to other pests such as diseases and weeds. However successful growers have learned to keep a close eye out for outbreaks of certain insects. Let's discuss three of these insect pests.

Cucumber beetles (spotted, striped, and banded varieties) can be very injurious to pumpkins, particularly young plants. Beetles begin feeding on plants as soon as they emerge and can kill the plants or severely retard growth. Beetles have been seen entering the soil through cracks to feed on the seedlings below the soil surface. Beetles are present throughout the growing season and will feed on all parts of the plants including the foliage, flowers and young fruit. Once the plants begin to run, they are not as vulnerable to damage as the seedlings.

Aphids (several species) will feed on pumpkins. They vary in size and color from light yellow, green to black. Some are winged, while others are wingless. They are found chiefly on the underside of the leaves, where they suck sap from the plants and can cause a reduction in the quality and quantity of the fruit. Infested leaves curl downward and may turn brown and die. The major problem with an aphid infestation, however, is that they are vectors of and

transmit virus diseases to pumpkins. These viruses can be devastating to production. Unfortunately, spraying insecticides for the aphids doesn't seem to reduce the incidence of virus diseases. Once the infected aphid feeds on the plant, the virus is transmitted, even if the aphid is killed after only one bite.



The last insect in this discussion is one called a pickleworm. Pickleworms severely damage cucumbers, cantaloupes and summer squash, but can infest pumpkins in some years.

Pickleworm damage occurs when the caterpillars tunnel in flowers, buds, stems, and more importantly fruits of pumpkins. Frass often protrudes from small holes in damaged fruits. Since pickleworms do not overwinter in South Carolina, they do not become a problem until about July. Growers should examine their fields weekly looking for small holes in their developing fruits. If found, controls should begin immediately.

Controls for these and other insect pests of pumpkins are found in the Clemson University Extension publication "2000 Pest Management Handbook" available on the Internet at <http://cufan.clemson.edu/pestmgmtguide/>. Choose "Commercial Vegetables," then scroll down the index to "Pumpkin," where the different insects are listed.

Cultivar Corner

'**Gold Bullion**' is the newest cultivar in the "Gold" collection from Rupp Seeds, Inc. This cultivar is a new release for 2001. The fruit weigh an average of 18 pounds and have a very dark handle. 'Gold Bullion' is resistant to powdery mildew, an important character for the lower South. It matures in 100 days. Rupp Seeds is at 17919 County Road B, Wauseon, OH 43567; 419-337 1841; fax 419-337-5491.

'Autumn King' is a new cultivar from Seeds by Design. The fruit average 25-30 pounds, are deep orange, and have "good handles." Maturity is 105 days. Seed is available through seed dealers. Company headquarters is at 130 N. Butte St., Willows, CA 95988; phone 530-934-8086.

'Jumpin Jack™' is a new large-fruited cultivar developed by Rupp Seeds (previously known as RS 1090 PVP). Fruit average 40-60 pounds, but 100 pound fruit are possible. The fruit are dark orange with a thick shell and are "more tall than wide." It is a long-season cultivar that takes 120 days to mature. Seed are available from Rupp Seeds (see above) or Howard Dill Enterprises, RR #1, Windsor, NS, Canada B0N 2T0; 902-798-2728.

Market Window

SC Pumpkin Suppliers: The South Carolina Dept. of Agriculture Marketing and Promotion Division is compiling a list of pumpkin producers who will have fruit for sale in 2000. Contact Martin Eubanks at 803-734-2200 to be placed on the list.

New World's Record: The new world record for the heaviest pumpkin was set on October 2, 1999, at the Great PA Pumpkin Bowl in Altoona, Pennsylvania. American grower Gerry Checkon of Spangler, PA produced a pumpkin weighing 1,131 pounds. This beat the previous world record of 1,092 pounds set in 1998 by Gary Burke of Simco, Ontario.

(Atlantic Pumpkin Growers' Association Newsletter, April 2000.)



Ask the Great Pumpkin

Q: I'm planting no-till pumpkins through rye that is 4-5 feet tall. Is it better to roll the rye before or after planting?

GP: The consensus of subscribers to the veg prod@reusda.gov moderated discussion group was that rye should be rolled before planting. Depending on how thick the rye is, it might need to be rolled twice, the first time just after it heads out. You must plant in the same direction that the rye was rolled to keep the mulch in place. Make sure the coulters are sharp enough to cut through the rye stems, so they are not just pressed into the ground.

Another option is to kill the rye early. This will force aphids on the rye to disperse instead of moving to the young plants.

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