VEGETABLE CROPS HOTLINE

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

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IN THIS ISSUE

DOWNY MILDEW OF PUMPKINS AGAIN - *(Dan Egel) - The following article was written as a Vegetable Crops Hotline - BULLETIN, September 6, 2001.* An article in a recent issue of the *Vegetable Crops Hotline* gave growers some pointers on how to manage downy mildew preventatively. As of 4 September, downy mildew of pumpkin was observed in the Vincennes area. Growers should review the article in issue 396 and scout their fields for this disease.

Those growers who confirm downy mildew and want to use a chemical treatment should consider how long they expect the vines to support pumpkins. Producers that expect to harvest pumpkins in the next 2 to 3 weeks should expect little yield loss if downy mildew is introduced now. Pumpkin growers who want to have healthy fruit and vines until the end of October may want to consider a chemical treatment.

The fungus that causes downy mildew of pumpkin can cause downy mildew on cucumber, muskmelon and watermelon. These cucurbit crops should be scouted for downy mildew as well. However, a different fungus causes downy mildew on spinach or greens. Downy mildew of spinach will not go to pumpkins or visa-versa.

ROTATING AWAY FROM TROUBLE - *(Dan Egel)* - Excessive rains have led to excessive disease in many vegetable fields this year. Fungal diseases are far more severe than in past years. Unfortunately, these disease problems could affect growers next year as well. Since many fungal pathogens can survive in plant debris, the amount of disease in a field this year can affect the amount of disease in a field next year.

What should be done to prevent problems next year?

Fall tillage - Fall tillage is always a good idea for vegetable crops. Growers should pay particular attention to this year's problem fields. Moldboard plowing should be considered for fields where short rotations are being considered. Deep plowing plant residues helps in the decay process and keeps the residue away from next year's crop. Spring tillage is not as effective. In addition, cull piles of fruit often exist along fencerows. Plant pathogens may exist in such fruit over the winter, and affect production next year. Bury or plow under such culled fruit before it becomes a problem.

Rotation - This time of year, growers may begin to think about where crops will be grown next year. Many disease problems can be avoided if proper crop rotation is practiced. Since some plant pathogens survive in the soil, planting the same crop year after year may build up populations of plant pathogens and lead to disease problems. This is especially true in this year's problem fields. For most plant pathogens, the longer the time in the soil without a suitable host plant, the fewer fungal spores or bacteria survive. In general, a 3 to 4 year rotation is recommended. Since plant pathogens often infect related plants, be sure to rotate to plants in different plant families. If watermelon is planted one year, avoid planting cantaloupe, pumpkins, cucumbers, gourds or zucchinis for 3 to 4 years. If tomatoes are planted, avoid peppers, eggplant, or potato. If possible, plant a cereal plant (e.g., corn, wheat) after planting a broadleaf vegetable. The herbicides associated with cereal production are usually specific for broadleaves. This practice keeps volunteer plants, which may harbor disease from previous years, to a minimum.

Rotation and deep plowing of vegetable fields that may help disease problems are listed below. Tomato - early blight, Septoria, bacterial spot, and canker; Muskmelon and watermelon - gummy stem blight and Alternaria leaf blight; Snap bean - Rhizoctonia root rot on the double crop; Cabbage - black rot; Pepper - Phytophthora, bacterial spot; Potato - early blight.

Disease problems that will not benefit from rotation or deep plowing include: most powdery mildew diseases, most viral diseases and Fusarium wilts. Powdery Mildews are easily airborne and do not overwinter well. Many viral diseases are transmitted by insects such as aphids and therefore are unaffected by rotation and tillage. Diseases such as Fusarium wilts and root knot nematode live for long periods in the soil and are relatively unaffected by rotations and tillage.

COOL TEMPERATURES AND CHILLING INJURY - *(Liz Maynard)* - It won't be long before night temperatures drop below 50°F. Many of the warm season crops are susceptible to chilling injury at temperature below 45 - 50°F. Fruit of tomato, pepper, eggplant, summer squash, watermelons, pumpkins, and cucumber experience injury at these temperatures. The longer the period of cool temperature and the lower the temperature, the greater the injury. One night may not cause a problem; a week of low temperatures may reduce marketable yield. Fruit that has been chilled may not ripen properly, may not develop full flavor during ripening, may develop sunken or watersoaked spots on the surface, and becomes more susceptible to organisms that cause postharvest rots.

What can a grower do? Harvest chilling-sensitive crops as soon as possible if an extended period of cool temperature is expected. Grade carefully to remove any fruit showing signs of decay. Avoid additional chilling after the crop is harvested. If necessary, adjust marketing plans to account for possible loss of shelf life of chilled crops.

Fall/Winter Meeting Dates

September 18, 2001 - Pumpkin Twilight Meeting, Westville, Ind. Contact: Liz Maynard, 219-785-5673.

December 6, 2001 - 2001 Melon Growers Update. Contact: Dan Egel, 812-886-0198.

January 3, 2002 - Illiana Vegetable Growers School, Schererville, Ind. Contact: Liz Maynard, 219-785-5673.

January 28-30, 2002 - Indiana Horticultural Congress, Indianapolis, Ind. Contact: Mario Morales, 765-494-0342.

Perennial Weeds - *(Liz Maynard)* - Early fall is an important time of year to pay attention to perennial weeds like Canada thistle, horsenettle, bindweeds, and hemp dogbane, among others. These weeds can be managed with a combination of tillage, herbicides, and crop rotations. A fall herbicide application can play a significant role in managing perennial weeds.

Until a killing frost, these weeds are storing food reserves below ground for use next year. Non-selective herbicides effective against these weeds may be used after vegetables have been harvested. This is a good time to use a herbicide such as glyphosate, which can move in the plant to the below ground overwintering parts and prevent or reduce regrowth next spring. In order for the herbicide to work, weeds should be actively growing with plenty of intact leaves when the herbicide is applied. If weeds have been damaged by harvest operations, allow them to recover before applying the herbicide. After application, wait at least a week before tilling the field. Be sure to read the herbicide label for specific instructions relating to particular weeds.

Slides of Fall Produce Displays Wanted - *(Liz Maynard)* - This year pumpkins will be featured at the Indiana Horticultural Congress. As part of the program, we will show slides of fall marketing displays: farm markets, roadside stands, and stalls at farmers' markets decorated for the fall season. We would like to include slides of as many displays as possible (including yours!). Instructions for submitting slides will be sent out later, but NOW is the time to start taking photos. Get out those cameras while the sun still shines!

What's in a Name? - *(Dan Egel)* - Any kid can tell you just exactly what a pumpkin is. Ask a botanist what a pumpkin is and you may get a long story. This article will try to make sense of just exactly what a pumpkin is without the botanical nonsense.

Pumpkins are members of the gourd family along with cucumbers, watermelon, muskmelon and zucchini. These plants usually have a vining type habit. Pumpkins, squash and gourds all originated in the Americas. In fact, there is evidence that Native Americans were cultivating gourds 8,000 years ago. Pumpkins and squash were important in the nutrition of Native Americans. So, pumpkins and squash are American, or at least North American.

Most of the pumpkins we carve into Jack-o-lanterns or display in the fall are of the species *Cucurbita pepo (C. pepo)*. This species is lightly ribbed, solid orange pumpkin. The stem of such pumpkins is dark green, hard and furrowed. *C. pepo* is also the species for most of the pumpkins we grow for baking. *Cucurbita maxima* are also grown as pumpkins. True to its name, *C. maxima* pumpkins can become very large-the giant pumpkins some folks grow. *C. maxima* pumpkins are not always ribbed and have a rather spongy, brown stem. These pumpkins are grown for their large size and for fall displays.

The fruit we call squash is also quite diverse. Typically, squash are divided into summer squash and winter squash. Summer squash have soft skins, are a member of the same species as Jack-o-lantern pumpkins *(C. pepo)* and are eaten in the immature stage. Summer squash includes smooth and yellow straight necks, vegetable marrows, scallop or patty pan squashes and club shaped zucchinis. Winter squash have hard protective shells and thus can be stored for the winter. Most winter squash are eaten, or at least picked, when ripe. Winter squash cover a lot of ground botanically and belong to the species *C. pepo, C. maxima* and *C. moschata*. Common name to these fruit includes Banana squashes, Buttercup, Turk's turban and Hubbard. Butternut squash is a winter squash of the *C. moschata* species.

Yellow flowered gourds belong to the species *C. pepo* and are thus related to Jack-o-lantern pumpkins. Bottle gourds and other white flower gourds, however, are member of different genus entirely, *Lageneria siceraria*. Gourds have been used extensively as containers due their shape and hard outer rind. In some regions gourds have been used as currency. In Haiti, the standard coin is still called a "gourde".

Whether you grow them for food, Halloween lanterns or fall decorations, pumpkins and gourds have become a symbol of fall.

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