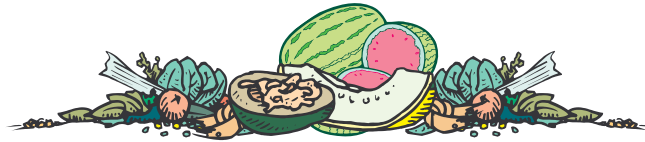


VEGETABLE CROPS HOTLINE

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

Chris Gunter, Editor
(812) 886-0198
gunter@hort.purdue.edu



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PLANT DISEASE MANAGEMENT - (Dan Egel) - Although most vegetable production is winding down for the season, now is the time to plan for next year. Note that an article that summarizes information by vegetable crop and disease appears each year in the *Midwest Vegetable Production Guide for Commercial Growers* <www.entm.purdue.edu/entomology/ext/targets/ID/index.htm>. The table for 2004 appears on pages 36 and 37.

Fall tillage - After harvest is over, the crop should be tilled to reduce the amount of plant material remaining above ground. Any plant pathogens that exist on the foliage will be less likely to spread to any remaining adjacent crops if the field has been properly tilled. When plant material is plowed under, the leaves, stems and fruit begin the decay process sooner resulting in a lower survival of associated plant pathogens. Spring tillage does not allow for much time for old stems, leaves and fruit to rot and disintegrate. This applies to such pathogens such as *Didymella bryoniae*, which causes gummy stem blight of watermelon or *Alternaria solani*, which causes early blight of tomato. Plant pathogens may exist in piles of culled 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. For most plant pathogens, the longer the time in the soil without a suitable host plant, the fewer fungal spores or bacteria, which will 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.

Resistant varieties - When you buy seed for next year, consider whether or not the variety is resistant to important diseases. For example, some cantaloupe varieties are resistant to powdery mildew. Growers might want to sow late plantings to resistant varieties since that is when powdery mildew is usually worse. There are no completely resistant varieties to diseases such as *Alternaria* leaf blight of cantaloupe.

Keep these ideas in mind while finishing up this year's production and planning next year's. A few preventive practices may save a lot of trouble (and pesticides) in future seasons.



MANAGING SQUASH BUGS ON PUMPKINS IN FALL - (Frankie Lam) - Squash bug is a serious pest of pumpkins in the Midwest. This season moderate-sized populations of squash bug nymphs and adults were found in southern Indiana. In the fall, nymphs and adults can feed on pumpkin fruit (Figures 1 and 2) and



Figure 1. Squash bug nymph feeding on pumpkin fruit. (Photo by Frankie Lam)



Figure 2. Squash bug adult feeding on pumpkin fruit. (Photo by Frankie Lam)

can cause the pumpkin to collapse and become unmarketable (Figure 3). The tactics for squash bug management are early detection and control of young nymphs during the growing season and to destroy their overwintering sites in fall.



Figure 3. A collapsed pumpkin with secondary infection of fungi. (Photo by Frankie Lam)

At night and under cool climates, squash bugs prefer to hide under protective areas, including leaves, fruits, stones, boards, and beneath mulch in the field. For home gardens or small fields, placing flat wooden boards or shingles near the plants to provide shelters for the bugs is one of the best tactics to manage the fall populations. Early in the morning or in the evening when the temperature is cool, check the undersides of the boards or the fruits, the bugs congregating in such places can be easily collected, crushed and killed by hand. However, crushing a “true” bug might give off a disagreeable odor from the abdomen; an alternative method is to put the bugs into a container with water and a little cooking oil just enough to cover the water surface. After the bugs have drowned the contents in the container can be dumped on the compost pile.

Field sanitation is a successful strategy to manage overwintering squash bug populations in large pumpkin field. The unmated adults, including both males and females, overwinter in the kinds of protective shelters described above. After the crop is harvested (Figure 4), vines and non-harvested fruits should be removed from the field and burned or destroyed by cultivation. Field margins should be as

free as possible of rubbish, piles of leaves, boards, and other potential shelters. Unfortunately, most of these useful tactics for the management of the pest are not agreeable with the goals of sustainable farming. Therefore, growers should consider both the management of the bugs and the conservation of the field before making the decision of fall tillage and leaving the ground bare through winter.



Figure 4. After pumpkins are harvested, vines and non-harvested fruits should be removed or destroyed. (Photo by Frankie Lam)

No economic threshold for squash bug nymphs and adults in the late season has been developed. Unless high numbers of squash bugs are found and direct damage of the fruit is observed in the field, application of insecticides is not recommended. This is because adults and large nymphs are very active and difficult to control by insecticides. For insecticidal management of squash bugs, please read *Midwest Vegetable Production Guide for Commercial Growers* (ID-56) <www.entm.purdue.edu/entomology/ext/targets/ID/index.htm>. Be certain to read the label carefully before using any pesticides.



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 too much botany.

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 and solid orange. 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 as obviously 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 and are members 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 species entirely, *Lagenaria 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".

The crops discussed above, while all in the same botanical family, are a diverse lot. Certainly, we use them in numerous and diverse ways. Whether you grow them for food, Halloween lanterns or fall decorations, pumpkins and gourds have become symbols of harvest, fall and even Thanksgiving.



PUMPKIN RIPENING - (*Chris Gunter*) - I have received a few calls in the last week about pumpkin ripening and curing. I thought it might be worthwhile to cover the basics of pumpkin storage. Pumpkins can be ripened in a well-ventilated barn or greenhouse after they have started to turn orange in the field. The optimum temperature for this is the 70's to low 80's (degrees F). Be careful, when using a greenhouse for this purpose, that the daytime temperatures do not get too high. High temperatures could damage the fruit. The night temperatures that the fruit experience should not be lower than the 60's or damage to the fruit might occur.

Storing fruit for future sales may be an option for some growers. When considering which fruit to select for storage be sure to choose fruit that are free from disease and have not experienced chilling temperatures (below 50°F) in the field. Fruit from fields which have shown *phytophthora* infestation, should not be selected for storage. It may be possible to test the storability of your fruit by holding some early fruit in storage. Their rate of breakdown will give you some idea of the potential of that crop for short-term storage.

Pumpkins require a period of curing to increase their storability. Pumpkins can be cured by placing them in a warm dry place (70-80°F) for a period of 7-14 days.



November 14-16, 2004
Naples Beach Hotel and Golf Club
Naples, FL, USA

This conference attracts prominent Capsicum scientists, researchers, breeders, horticulturists, pathologists, entomologists, geneticists, physiologists, virologists, seed and chemical companies, processors, growers and chile aficionados from around the world. All pepper types including bell, long green/red chile, high color paprika, ancho, pimiento, cayenne, Tabasco, jalapeno, yellow pickling, Serrano and cherry will be a focus of the conference.

Topics will focus on:

- Breeding and Genetics
- Horticultural Management and Production
- Post Harvest Issues
- Integrated Pest Management

For More Information Contact:

Conference Organizer:

Mr. Gene McAvoy
 1-863-674-4092, gmcavoy@ifas.ufl.edu

Conference Coordinator:

Ms. Beth Miller-Tipton
 1-352-392-5930, bmt@ulf.edu

Conference Website:

<<http://conference.ifas.ufl.edu/Pepper>>

This period allows the outer cell layers of the fruit to dry out and contributes to a tougher rind. Curing could take place by windrowing the crop in the field or after removal from the field (Figure 1).



Figure 1: Pumpkin curing gives the fruit a tougher outer rind. (Photo by Chris Gunter)

Storage life will depend on the condition of the crop when it comes out of the field and the effects of handling during the post harvest period. Care should be taken to ensure the fruit surface remains uncut and free of bruises. A common source of punctures and bruising occurs when fruit are stacked or binned and the stem or handle of one fruit punctures an adjacent fruit. Also be sure not to break the handle or stem off of the pumpkin fruit during the handling process as this might cause the fruit to be unmarketable.



LAST ISSUE OF THE SEASON - (Chris Gunter) - I just wanted to let subscribers know that this will be the last issue of the Vegetable Crops Hotline for the regular season. I'm sure you are all used to receiving the Hotline every two weeks and I hope that you have found it beneficial throughout the season. We have certainly enjoyed bringing it to you. Our next regularly scheduled issue will come out in November. That will be the last issue in the year 2004.



ANNOUNCEMENTS -

January 6, 2005 - 8 am
to 4 pm — Illiana
Vegetable Growers
School - Schererville -
Brochures available in
December. For more
info: (219) 785-5673,
emaynard@purdue.edu



January 24-26, 2005 -
2005 Indiana

Horticulture Congress and Trade Show; for more
information check out the website at
<www.hort.purdue.edu/hort/ext/hortcongress/>.
The meeting will be held at the Adams Mark Hotel,
Indianapolis, IN.

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Vegetable Crops Hotline
c/o Chris Gunter
Southwest Purdue Agricultural Program
4369 N Purdue Rd
Vincennes, IN 47591