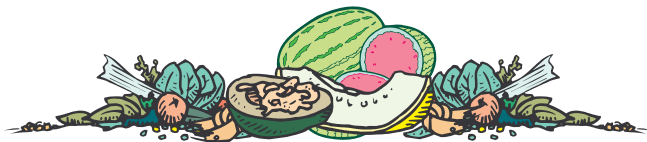


VEGETABLE CROPS HOTLINE

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

Dan Egel, Editor
(812) 886-0198
egel@purdue.edu



No. 383
September 7, 2000

<http://www.entm.purdue.edu/entomology/ext/targets/newslett.htm>

IN THIS ISSUE

- PUMPKIN AND WINTER SQUASH MATURITY
- PERENNIAL WEEDS
- COOL TEMPERATURES AND CHILLING INJURY
- PROBLEM AREAS
- MICRODOCHIUM BLIGHT
- WINTER MEETING DATES

PUMPKIN AND WINTER SQUASH MATURITY - (John Howell) - This article is from the Massachusetts Vegetable IPM Newsletter. Pumpkins can be ripened in a well-ventilated barn or greenhouse. During the day, the best temperatures for storage are in the seventies to eighties. Night temperatures should not drop below the sixties. In a greenhouse, temperature can be managed with ventilation on sunny days. Unless it is quite cool, heat is not likely to be needed if the house is closed up at night.

Harvest and storage issues are a major concern. This is likely to be a difficult year for storing squash. Questionable fruit should be marketed as soon as possible without flooding the market. Fruit that are free from disease and haven't been subject to much chilling (below 50°F) should be selected for storage. Sorting fruit in this manner requires extra labor and may not be economical. However, it should not be too difficult to separate bins of squash according to good and poor fields or areas of fields. Fruit from fields where phytophthora is present are not the best choice for storage. A test harvest and holding can give some indication of the potential for at least short-term storage.

Attention to curing and handling will go a long way toward improving the life of winter squash and pumpkin fruit. In fields where pumpkins are turning orange, it is worthwhile to cut and windrow the pumpkins and bring them in out of the field. This will allow the handles to cure and will protect fruit from insects, vertebrate pests, and diseases. Pumpkins are not marketable if the handle is broken off or dried up. If you need to leave pumpkins in the field for pick-your-own, cut the handles from the vine to save them from advancing powdery mildew and reduce shrinkage.

Storage life depends on the condition of the crop when it comes in and your ability to provide careful handling and a proper storage environment. When harvesting squash and pumpkins, it is important to handle the fruit with care to avoid bruising or cutting the skin. Despite its tough appearance, squash and pumpkin fruit are easily damaged. The rind is the fruit's only source of protection.

Once that rind is bruised or punctured, decay organisms will invade and quickly break it down. Place fruit gently on pallets or in pallet boxes.

A period of curing can contribute to storage life. This may be done in windrows in the field - especially with a series of warm, dry days - or by placing squash in a warm dry atmosphere (70-80°F) such as a greenhouse for up to two weeks. This pre-storage treatment permits rapid drying of the outer cell layers, and when combined with a dry atmosphere for storage inhibits infections that can take place at this time. Removal of the stem from squash (butternut, Hubbard, etc.) will also decrease the amount of fruit spoilage because the stems frequently puncture adjacent fruit, facilitating infection. Furthermore, any clean cuts during the curing period often heal over and are no longer a source for injury or infection.

Take care to avoid subjecting squash to chilling injury. Chilling hours accumulate when squash is exposed to temperatures below 50°F in the field and in storage. Injury increases as temperature decreases and/or length of chilling time increases. Chilling injury is of particular concern with squash intended for storage because it increases the likelihood of breakdown.

After curing, move squash or pumpkins to a dry, well-ventilated storage area. Pressure bruises can also reduce storage life, so avoid rough handling, tight packing, or piling fruit too high. Fruit temperature is kept as near to the temperature of the air as possible to avoid condensation, which can lead to rot. Ideally, the storage environment

should be kept at 50-55°F with a relative humidity of 50-70%. Under such conditions, sound disease-free fruit should have a storage life of 8-12 weeks. Even if it is difficult to provide ideal conditions, storage in a shady, dry location is preferable to leaving fruit out in the field.



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.



COOL TEMPERATURES AND CHILLING INJURY - (Liz Maynard) - With night temperatures recently dropping below 50°F, many of the warm season crops are susceptible to chilling injury. Fruit of tomato, pepper, eggplant, summer squash, watermelons, pumpkins, and cucumber experience injury at these temperatures. Long periods of cool and low temperatures make the chance of injury greater. One night may not cause a problem, but a week of low temperatures may reduce marketable yield. Fruit that has been chilled may not ripen properly or develop full flavor.



Similarly, such fruit may develop sunken or water-soaked spots on the surface, thus becoming more susceptible to post-harvest rots.

What can a grower do? Chilling-sensitive crops should be harvested as soon as possible if an extended period of cool temperatures 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.



PROBLEM AREAS - (*Dan Egel*) - Many vegetable fields contain an area that appears inadequate when compared with the rest of the field. Perhaps an area produces low yields or plants die early. This article is about the reasons for a problem area in a field.

A grower recently complained to me of an area in one of his fields that produced low yields of muskmelons and watermelons. The field was fairly level. The area in question could be identified by the reduced vigor of the vines. Whereas the vines in most of the field were 1 to 2 feet deep, the problem area had sparse vine cover. Few ripe fruit could be seen in the area in question. Further investigation revealed that vines of low vigor were located in an area of sandy soil compared with the rest of the field.

The symptoms of the vines in the problem area did not indicate a wilt or any type of foliar problem. Therefore, we dug up a vine. The galls of the root knot nematode (RKN), which appear as swollen or knotted areas on the roots, were as severe as any I have ever seen. The galls can manifest themselves as a few pea-sized areas to golf ball sized galls. In severe cases, it is easy to understand why the roots have little chance to function in the transport of water or minerals. Roots outside the problem area had few, if any RKN.

The nematodes that cause root knot have a considerable host range. Plants that may have problems with RKN include most broadleaf plants such as muskmelon, watermelon, and pumpkin as well as tomato, pepper, and eggplant. Root knot nematodes can survive in soils for several years. The survival characteristics and host range of RKN make management difficult. Long rotations of grasses such as wheat or corn can help reduce the problem. Switch to tolerant varieties whenever possible. For example, many tomato varieties now have some tolerance to RKN.

The shape of RKN areas can be influenced by many factors. Areas of RKN may become elongated in the direction of cultivation or water drainage. Note that our grower's RKN was in a high, sandy area. RKN prefers sandy areas. The affected area, therefore, might be influenced by soil type.

For some growers the use of nematicides may be an option. For the latest guide to these chemicals, see the list as printed in the Midwest Vegetable Production Guide (ID-56) <<http://www.entm.purdue.edu.entomology/ext/targets/ID/index.htm>>.

There are other reasons why a problem area might appear in a vegetable field. The area might be a low spot. Growers should ask themselves if standing water might have affected plant survival or vigor at any time during the growing season.

Physical or chemical characteristics of the field might also affect crop vigor. Compaction may lead to poor growth. Watch for compaction around the edges of the field where harvest equipment frequents. The area in question may have more clay than the rest of the field. Soil testing may reveal soil characteristics such as pH or fertility that may be responsible for poor yields. Sample both in and out of areas you have questions about. Finally, is there a chance that a herbicide misapplication occurred on your problem area? For example, herbicides can collect in certain areas after a particularly hard rain.

Now is the time to pay close attention to those areas of your fields you have questions about. Off-season answers may lead to next season's results.



MICRODOCHIUM BLIGHT - (*Dan Egel*) - I found this disease in my own pumpkins at the Southwest Purdue Ag Center this year. Although more common in the southern US, this disease can affect pumpkins and squash in Indiana. Affected leaves and stems develop white/tan sunken, spindle-shaped lesions. Fruit lesions are also a light color and may form a continuous dry scabby surface. The lesions will not invade the fruit, but may reduce the value of a pumpkin for carving or ornamental purposes. In severe cases, stem lesions can cause defoliation and thus loss of yield.

Fungicides used for the control of black rot should also control Microdochium blight. Thus, chlorothalonil products (e.g., Bravo, Echo, Terranil) or EBDC fungicides (e.g., Maneb 80) are effective. Cultural methods of control include crop rotation and fall tillage.



WINTER MEETING DATES:

- **January 4, 2001** - Illiana Vegetable Growers School, Schererville, IN. Contact: Liz Maynard, 219-785-5673.
- **January 29-31, 2001** - Indiana Horticultural Congress, Indianapolis, IN. Contact: Mario Morales, 765-494-0342.

The next issue of Vegetable Crops Hotline will be in November.

Disclaimer

Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.



Printed on Recycled Paper

Purdue University is an equal opportunity/affirmative action institution

Vegetable Crops Hotline
c/o Daniel S. Egel
Southwest Purdue Agricultural Program
4369 N Purdue Rd
Vincennes, IN 47591