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PUMPKIN AND WINTER SQUASH HARVEST AND STORAGE

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Editors note: Thanks to the folks from U Mass and Purdue for sharing this very timely and informative article on post-harvest handling of pumpkins and squash, and to Bill Lamont for bringing it to my attention.

Although there are many late fields with immature fruit, pumpkins in some fields are turning orange. If the current warm sunny days continue, more and more fruit will color up in the next several weeks. Pumpkins may need to be held for several weeks before they can be marketed. There can be extra work involved in bringing fruit in early, especially for growers who normally have pick-your-own harvest, but we recommend that growers harvest as soon as crops are mature and store under proper conditions, if it is feasible.

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. On some varieties, however, handles shrink after cutting. Ideally, if the timing is right, pumpkins should be cut one to two weeks prior to marketing.

Pumpkins should be harvested when fully mature, with a deep orange color and hardened rind. However, as long as pumpkins have started to turn color, they will ripen off the vine if held under the proper conditions. While not ideal, this may be preferable to leaving them in the field if conditions are not favorable. If necessary, pumpkins can be ripened in a well-ventilated barn or greenhouse. The best temperatures for ripening are in the seventies or even low eighties during the day. 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.

Often it is not feasible to harvest pumpkins early and store them until they can be marketed, and so they must be stored' in the field. If vines and fruit are healthy, storage in the field can be successful for a few weeks. If the vines die back, damage to the fruit from sun, disease and insects is more likely. In any case, it is important to scout for insects feeding on the fruit and handles, which may include squash bug nymphs or adults, or striped cucumber beetle. Control them with insecticides if damage is evident and look at fruit throughout the field to assess feeding damage on handles and fruits. Squash bug nymphs are gray with black legs and usually group together on the undersides of leaves. Adults are a dull brown and are more likely to feed singly. Cucumber beetles at this time of year are most likely found in flowers, but may also group together on fruit. Both cause unsightly scarring and pitting which can also allow entry of diseases.

There is no set threshold, but judge the level of damage and the proportion of fruit with damage. In fields that have a history of Phytophthora blight, Fusarium fruit rot, or black rot, field storage may increase the incidence of these problems, particularly if we have a period of wet weather or a major storm while fruit is sitting in the field. This has been one of the causes of significant losses in recent years, and one reason that we recommend bringing fruit in as soon as it is mature.

Winter squash is also maturing in some fields. Fruit that are free from disease and haven't been subject to much chilling (below 50ºF) should be selected for long-term storage. Sorting fruit in this manner requires extra labor and may not be economical, but 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 Phythophthora is present are not the best choice for storage.

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. All fruit placed in storage should be free of disease, decay, insects, and unhealed wounds. 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 in containers and move bins on pallets. 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.

A period of curing after harvest can help extend 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 (70-80ºF) with good air circulation, 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. Any clean cuts during harvest a likely to 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 50ºF in the field or 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. If squash has been exposed to chilling injury it should be marketed first and not selected for long-term storage. Remove squash from the field if temperatures likely to drop below fifty degrees for any length of time.

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 should be kept as close to the temperature of the air as possible to avoid condensation, which can lead to rot. Ideally, the storage environment should be kept at 55-60ºF with a relative humidity of 50-70%. Lower relative humidity increases water loss, resulting in reduced weight, and if excessive, shriveling of fruit. High relative humidity provides a favorable environment for fungal and bacterial decay organisms.

Under ideal conditions, disease-free pumpkins should have a storage life of 8-12 weeks and butternut squash up to three or four months. Even if it is difficult to provide the ideal conditions, storage in a shady, dry location, with fruit off the ground or the floor, is preferable to leaving fruit out in the field.

As you plan for storage and marketing, keep in mind that the market for pumpkins seems to get earlier every year. Fall decorative displays include pumpkins, and those displays begin showing up after Labor Day. One of the best solutions to early-maturing pumpkins may be finding an early market. With so many late-planted fields this year, early pumpkins are likely to be in demand.

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