Prevent Rot of Winter Squash in Storage

In August and September, everything is popping in the produce fields. One crop that is sizing up and one of the latest to mature is winter squash.

Many growers produce winter squash for their roadside stands or local auctions. Still, an increasing number of acres are planted for regional farmer’s cooperatives that sell to larger markets in Pennsylvania and beyond. A storage crop is a perfect way to maintain sales throughout winter.

Winter squash requires a long growing season and proper care to get a good quality fruit that holds up well in storage. Depending on the variety, winter squash can last for 1–6 months if harvested, cured, and stored carefully. Other times, improper handling during and after harvest can shorten shelf life. Sometimes undetected or mismanaged disease in the field can lead to post-harvest rots in winter squash. Alternaria, anthracnose, bacterial soft rot, and phytophthora are examples of plant pathogens that may cause squash to deteriorate in storage. In this article, I will discuss how to prevent post-harvest rot, which is rotting after your harvest.

Is It Ready to Harvest?

If you are new to growing winter squash for storage, you’ll want to look for a few cues to know when the crop is mature.

1. Check the rind for hardness. Pressing your fingernail into the rind should be difficult whenever the fruit is mature.
2. Color—as squash matures and its true color develops, the glossiness will fade into a dull appearance. In some varieties, you will notice a ground spot (where the fruit is touching the ground) that is a different color than the rest of the fruit.
3. The stem or handle of the squash will begin to dry out and become corky closer to maturity.

Preventing Rot in the Field

A good rule of thumb when thinking about winter squash storage is “harvest early, store carefully.” If your vines and fruit are in good health, the fruit will likely hold fine out in the field for a couple of weeks. To protect the leaves and handles/stems, using a protectant fungicide such as chlorothalonil or mancozeb to protect against disease is a good practice, especially if rainy weather is forecasted. Good leaf cover is critical to protect the fruit from sunscald. If your vines have been taken over by powdery mildew or another disease, harvesting fruit as soon as possible is essential. When harvesting squash—easy does it. Although their skin appears tough, it can be easily damaged during harvesting. Any wound allows a fungal or bacterial pathogen to enter the rind and begin to grow a rotten spot.

Curing

Curing helps to harden the skin of winter squash and can even aid in healing minor wounds. Proper curing will improve the shelf life of winter squash too. If the weather conditions are right, you may cure your squash in the field for 7–10 days after cutting off the vine. Look for dry, warm days at 70–80°F. If outdoor conditions are not suitable, bring fruit to a warm building such as a barn or greenhouse. Space out the fruit, and do not pile it while curing. After fruits are cured, move them to the storage shed.
Preventing Rot in the Storage Shed

Before placing fruit in the storage shed, remove clumps of soil and plant debris with a dry cloth. There are a number of food-safe sanitizers available, and it may be worthwhile trying out a couple of bins to see if it makes a difference. The storage shed should be dry and well-ventilated. See the table below for recommended conditions for specific types of squash. Prevent chilling injury by ensuring your storage shed stays above 50°F. If squash is subjected to temperatures below 50°F, you will see pitting on the skin and more decay once it’s removed from storage.

Keep #2 (second quality) squash separate from first-quality fruits and sell as soon as possible. Do not attempt to hold #2 crops for long winter storage. To decrease condensation and sweating, keep fruits in low piles. Cardboard bins are often used to store squash. Place the bins on pallets to keep them off the ground and move the pallets with them. Using forks to move cardboard bins may wound the fruit inside. Consider also ethylene gas released naturally from produce such as apples, pears, and tomatoes. Ethylene gas can speed up the ripening process in fruits and reduce storage life in winter squash. Keep your squash in a separate room from these crops.

Looking Ahead

If you planted winter squash this year and are experiencing above-average amounts of rot, there are some things to consider for the following year.

1. Rotate the field out of cucurbit crops, including cucumbers, melons, and zucchini. Do not plant the same plant family in the same field year after year. A 3 to 4-year rotation is best to prevent the build-up of disease.
2. Buy seed from a reputable seed company. Do not save your seed from fields that have experienced disease pressure. Some diseases can be seed-borne.
3. Using a natural or plastic film mulch will protect fruits from contact with the soil.
4. Encourage good leaf cover throughout the growing season by keeping insects in check and irrigating when necessary. Have the insecticide on hand for the next year and be ready for them. Look in the Mid-Atlantic Vegetable Production Guide to get insecticide recommendations for cucurbit insects that are troublesome on your farm.
5. If the following year’s squash field is in a high sun-exposure area, look in the seed catalog for bush or semi-bush varieties that provide better leaf cover than vine types.

The recommended storage conditions for different culinary types and their storage life expectancy are as follows in the chart below.

<table>
<thead>
<tr>
<th>Culinary Type</th>
<th>Temp (F)</th>
<th>Percent Relative Humidity</th>
<th>Storage Life Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumpkins, general</td>
<td>50–55</td>
<td>50–70</td>
<td>8–12 weeks</td>
</tr>
<tr>
<td>Squash, general</td>
<td>50</td>
<td>50–70</td>
<td>Varies with variety</td>
</tr>
<tr>
<td>Acorn</td>
<td>60–70</td>
<td>60</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Acorn</td>
<td>50–60</td>
<td>60</td>
<td>4–7 weeks</td>
</tr>
<tr>
<td>Buttercup</td>
<td>50</td>
<td>50–70</td>
<td>13 weeks</td>
</tr>
<tr>
<td>Butternut</td>
<td>50–60</td>
<td>60</td>
<td>7 weeks</td>
</tr>
<tr>
<td>Butternut</td>
<td>50</td>
<td>60</td>
<td>8–11 weeks*</td>
</tr>
<tr>
<td>Hubbard</td>
<td>50–60</td>
<td>60–70</td>
<td>27 weeks</td>
</tr>
<tr>
<td>Turban</td>
<td>50</td>
<td>50–70</td>
<td>13 weeks</td>
</tr>
</tbody>
</table>

*Storage for four months or more is possible if all production, curing, and storage recommendations are followed.

From Veg MD Online

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