

Putting a Good Quality Crop into Storage

Jan van der Heide
Bejo Seeds, 1088 Healey Road, Geneva, NY
j.vanderheide@bejoseeds.com

The traditional New England diet has relied on storage vegetables for a long time – potatoes, carrots, cabbage, rutabaga, winter squash, etc. Modern technology is making it possible to maintain very good quality of vegetable crops in storage (refrigeration, insulation, ventilation, humidity controls, modified atmosphere, etc.)

For best results in storage, however, it is important to note that even the most advanced storage technology cannot be a replacement for mediocre quality from the field. Most storage consultants will stress that “a storage is not a hospital”. Or, “Junk In, Junk Out!”

For best results with storage crops remember the following:

Use Storage Varieties

Some varieties have been designed for fresh market use, but these varieties typically do not store well. Fresh market varieties typically grow quickly, have high water content, and relatively low solid content. Storage varieties, on the other hand, grow rather slowly, have high solid content and relatively low water content. Storage varieties also have higher levels of antioxidants (to protect them from decay during the winter season....)

Store only Healthy Crops

There are many organisms that will try to destroy your storage crops during the winter. There is no need to speed up the decay by putting diseased product in storage. Diseased crops break down quickly, generate heat and moisture that will reduce storage life of the rest of the crop, spread disease onto healthy product, and will just create a mess.

Store Slightly Immature Product

Once produce is fully mature, it will begin the physiological process of aging. In this aging process, tissues begin to soften, leaves begin to yellow, and decay begins to set in. By harvesting slightly immature produce you can preserve the mature look and maintain good quality for a much longer time.

Pre-conditioning

You cannot dig potatoes on a hot day in August and expect them to store. Piling potatoes with high pulp temperature into a storage will have you holding your nose in few weeks – the potatoes will break down with soft rot (very smelly!).

Obviously, pre-chilling crops in preparation for cold storage makes sense. Harvest storage cabbage late in the season, when the weather is cold. Harvest carrots when soil temperatures are low. Harvest onions when there is still good drying weather in the fall – and cure onions outside in boxes to make sure they are nice and dry. Bring the onions inside after the weather gets cold. Cure winter squash to make sure the rind is strong and hard.

Bring Mother Nature Inside

Savoy cabbage stores very well when you harvest it with the snow still on – much cheaper than icing or running the cooler! Chinese cabbage stores well in some snow, as well. Harvest carrots gently and leave the dirt on – the dirt helps modulate humidity levels in storage. Same goes for beets, potatoes, celeriac, parsnips, etc.

To wash or not to wash?

Yes – washing prevents some staining from soil. But – washing also creates small wounds that can easily be infected by fungi and bacteria. Furthermore, the skin or rind of vegetables can contain phenolic compounds that will oxidize when the skin is damaged, and the oxidation products can create discoloration or staining, and can sometimes create off-flavors.

Free moisture (from washing, or from condensation) is not a good in a storage – many fungi and bacteria need a layer of moisture to invade their vegetable host. Keep the produce dry (but keep the relative humidity high!), and provide some ventilation and fresh air from time to time.

Trim after Storage

There is no need to trim and clean produce before putting it in storage. It is better to avoid cutting and creating wounds as much as possible. The wrapper leaves on cabbages help prevent superficial damage to the head itself, leaving a bit of leaves on the beets is OK, trim rutabagas just enough to remove the leaves, but leave the necks intact.

Trimming gives you something to do in winter – but you only have to trim as much as you would like to sell that day.