

Preserving the School Garden Harvest

Shorter days, cooler nights, and the start of a new school year — fall is in the air! Late summer and early fall are also harvest times when the school garden fulfills its promise of plenty, and young gardeners celebrate the abundance by feasting on the delicious produce they've grown. But what happens when the school garden produces more food than you and your students can eat fresh? How can you continue to benefit from the garden's bounty after frost brings its productivity to an end?

This is a question our ancestors faced and answered by developing various methods to preserve food. Wherever circumstances and urges have taken people — into a winter in early North America or up into space on a shuttle flight — they've had to eat! By exploring preservation methods, both ancient and modern, students can come to appreciate the climatic and survival challenges faced by people in different places and eras. Older students can examine the chemistry and economics of different types of food preservation.

Drying Food

The oldest method of food preservation is drying. The edible seeds of many plants (grasses, beans, and sunflowers, for instance) dry naturally as a part of their life cycle. Ancient peoples, through trial and error, discovered that other foods remained edible for long periods when dried. Though we now know that dehydration works because the microbes and enzymes that cause spoilage and decay are not active without adequate moisture, the basic requirements for drying are the same as ever. All it takes is dry air passing over food to dehydrate it to the point where it will not spoil in storage.

Your students can delve into food preservation with the easy, "low-tech" method of air drying. Many garden-grown herbs can be dried by simply hanging them in bundles in a spot with good air circulation, while fruits like apples are easy to dry in an oven or an electric dehydrator. This type of project can also be a springboard for exploring the history, chemistry, economics, and culinary possibilities for other types of food preservation, such as pickling and canning.

Air-Dried Herbs

1. Have students pick healthy, good-quality stems of garden herbs such as dill, basil, thyme, mint, marjoram, sage, and rosemary. Harvest them just before flowering for best flavor. If necessary, wash herbs and allow them to air-dry before bundling. Bind the ends of six to eight stems with a rubber band.
2. Tie a brown paper bag around the herb bundles to shield them from light. Poke a few holes in the bags to allow for air circulation. Leaves that touch the inside of the bag may stick and dry poorly, so make sure there's plenty of room.

3. Hang bagged herbs in a warm, dry room. After 2-3 weeks, remove the dried leaves from the stems and use them for cooking, teas, and sachets.

Your younger student growers might explore questions such as how the flavors and aromas of fresh and dried herbs compare. How might each type affect the flavor of spaghetti sauce?

What can you do with dried herbs? Here's an easy recipe that kids can make using the herbs they've dried. The salt can be packaged into small containers for kids to take home. You could also treat your students to a healthy snack of air-popped popcorn and let them flavor their individual portions with the seasoned salt they made.

Seasoned Salt

In a blender, food processor, or with a mortar and pestle, grind together a cup of coarse sea salt with 2 tablespoons of dried herbs, or to taste. Try different mixtures of herbs and have students taste to see which they like best.

Drying Apples

Dried apple slices are fun and easy to make, and you don't even need a special food dehydrator. A standard oven is all that's needed for the drying process!

1. First, choose an apple variety that is firm and sweet, but with a little tartness; this will yield the tastiest dried apples with the nicest texture. Some good varieties include Honeycrisp, Golden Delicious, and Granny Smith.
2. Then it's time to wash, peel, and slice the apples. This can be done the old-fashioned way, with younger children washing the apples, and older children or adults peeling, coring and slicing them into thin 1/8 inch thick slices. Or the apples can be processed with an old-fashioned apple peeler/corer/slicer. Kids and adults love these handy gadgets! Slice the apples thinly.
3. Freshly cut slices can be soaked for 15 minutes in an ascorbic acid (Vitamin C) solution to keep them from browning. This also adds some Vitamin C and helps to destroy potentially harmful bacteria during drying. Commercially prepared mixes of ascorbic and citric acid are usually available among canning supplies seasonally in supermarkets. Follow package directions. You can also use one part lemon juice mixed with one part water to keep apples from discoloring, although it will change their flavor slightly.
4. Set your oven to 135 to 145 degrees F (if your oven doesn't have a setting this low, you'll end up cooking rather than drying your apples) or turn your dehydrator on to the appropriate setting. If you're using an oven, a convection oven is preferable. If you don't have a convection oven, leave the oven door open a few inches during the drying process to improve air flow.

5. Prepared apple slices should then be arranged in a single layer on a dehydrator drying tray or on a cooling rack placed on a baking sheet. Dry the slices for six to twelve hours until they are leathery but still pliable. There should be no visible drops of juice on the fruit when you tear a cooled slice apart and press it between your fingers.
6. Cool the slices completely. You can, of course, eat your apples right away! But if you plan to store them, condition them first by packing the dried slices loosely in an airtight for 7-10 days and giving them a shake daily. If you see any moisture condensing in the container, take the apples out and give them a little more time in the oven or dehydrator. Dried apples can be stored in an airtight container in a cool (60 degree F) spot for 6 months or more. They make a great snack and can even be reconstituted into sauce or pie!

Pumpkin Seeds

Also called pepitas, pumpkin seeds are tasty little packages full of vitamins and minerals. An energy dense food, they contain high levels of protein and healthy fats, along with important nutrients including Vitamin E, tryptophan, zinc, iron, manganese, magnesium, phosphorus, and copper. While the seeds themselves are green, in most pumpkin varieties they are covered by an edible white seed coat or hull. However, some pumpkin varieties such as 'Lady Godiva' and 'Kakai' produce hull-less seeds.

Ready to start snacking? Preparing pumpkin seeds can be as easy as tossing the seeds in butter or oil, spreading them out in a shallow pan, and sprinkling with salt, and then roasting them in the oven for 45 minutes to an hour. You can also find a variety of recipes online from sweet to spicy. Here's one of our favorites:

Roasted Pumpkin Seeds

- 2 cups of pumpkin seeds (the amount of seeds varies with the size of the pumpkin; figure on about a cup of seeds per 9" diameter pumpkin)
 - 1 ½ teaspoons Worcestershire sauce
 - 1 ½ tablespoons butter, melted
 - 1 ¼ teaspoons seasoned salt
1. Cut an opening in the top of the pumpkin and scoop out the seeds.
 2. Pull away and discard the stringy fiber surrounding the seeds. (Kids love this somewhat messy step!) Place seeds in a strainer and rinse well. Spread rinsed seeds out on paper towels and pat dry.
 3. Mix melted butter, Worcestershire sauce, and seasoned salt in a bowl. Add seeds and stir until evenly coated.

4. Line a rimmed baking sheet with foil and spray the foil with non-stick cooking spray. Spread the seeds out on the foil in a single layer. Bake for about an hour at 250 degrees, stirring every 15 minutes. When seeds are crisp and light golden brown, remove from oven and stir again. Let cool; then enjoy!

Popcorn

Popcorn, native to the Americas, has been cultivated for thousands of years. The oldest ears of popcorn we know of — thought to be around 4000 years old — were discovered about 70 years ago in a cave in what is now New Mexico. In addition to food, the Aztecs used popcorn in ceremonial decorations and ornaments on statues of their gods. It's easy to dry and store popcorn grown in your school or home garden, for healthful snacking all winter long!

1. Leave your corn plants standing in the garden until the stalks and husks are brown and dry, but be sure to harvest before frost hits by twisting and snapping each ear from the stalk.
2. The kernels then need to be partially dried or "cured" for long-term storage. Carefully strip away the dried husk from each ear. Place the ears in mesh bags or spread them out in an area where they'll have warm air circulating around them.
3. After a month of curing, the kernels can be taken off the ears and stored in airtight jars. To get the dried kernels off the cob, simply grasp the ear firmly in both hands and twist until the kernels drop off. Once started, the kernels come off with very little pressure. It's a good idea to protect your hands with gloves when you do this.
4. To check if the kernels are dry enough to store, try popping some as a test. If they crack, but don't explode open fully, they need to be dried a while longer.