

Food Drying

Drying is the oldest method of preserving food. Through- out history, the sun, the wind, and a smokey fire were used to remove water from fruits, meats, grains, and herbs.

By definition, food dehydration is the process of removing water from food by circulating hot air through it, which prohibits the growth of enzymes and bacteria.

Benefits of Dried Food

Dried foods are tasty, nutritious, lightweight, easy-to-prepare, and easy-to-store and use. The energy input is less than what is needed to freeze or can, and the storage space is minimal compared with that needed for canning jars and freezer containers.

The nutritional value of food is only minimally affected by drying. Vitamin A is retained during drying; however, because vitamin A is light sensitive, food containing it should be stored in dark places. Yellow and dark green vegetables, such as peppers, carrots, winter squash, and sweet potatoes, have high vitamin A content. Vitamin C is destroyed by exposure to heat, although pretreating foods with lemon, orange, or pineapple juice increases vitamin C content.

Dried foods are high in fiber and carbohydrates and low in fat, making them healthy food choices. Dried foods that are not completely dried are susceptible to mold.

Microorganisms are effectively killed when the internal temperature of food reaches 145 degrees Farenheit (F).

Equipment Needed for Drying

To be certain of the final quality and consistent drying of foods, a dehydrator is recommended, especially with unpredictable Ohio weather. Sharp knives and a food processor or blender will also make the drying task easier.

Many guidelines call for blanching, steaming, or pretreating foods. Equipment for these processes include a deep kettle with a lid and a wire basket, a colander, or an open mesh cloth bag to hold produce. A non-metal bowl is best for pretreating fruits and vegetables to prevent discoloring.

Preparing Food for Drying

Select ripe fruit for drying. Bruised fruit can be used if you trim away any bruised spots. Do not use molding food for drying.

Slicing foods allows the dry air to circulate and dry the surface area of the food first. Cut foods into 1/8-inch to 1/2-inch slices. The higher the water content, the larger you should make the slice size. Small slices of high-moisture foods, such as watermelon, would disappear when all the moisture has evaporated.

Peel fruits and vegetables, including bananas, melons, winter squash, and other foods.

Pretreatment

Pretreatments are techniques used to make quality products. Pretreatments include dipping, blanching, cooking, or candying.

Dipping prevents oxidation or color changes in fruits and vegetables. Dip fruits in pineapple or orange juice. Dip vegetables in diluted bottled lemon juice (dilute 1/4 cup of lemon juice in 2 cups water, then dip vegetables and some fruits for 2 to 3 minutes).

Commercial fresh fruit stabilizers can also be used (dilute 1/2 Tablespoon of stabilizer in 2 cups water). Sodium sulfite is another commercial product for pretreating foods. To make a homemade stabilizer, mix 1 Tablespoon of salt or vinegar with 8 cups of water or dissolve one 500 mg tablet of vitamin C per 1 cup of water.

Blanching is recommended for asparagus, green beans, broccoli, brussels sprouts, cauliflower, and peas. Blanch for a very short period to cause checking of skins.

Making Fruit Leathers

Leathers from Fresh Fruit

Select ripe or slightly overripe fruit. Wash fresh fruit or berries in cool water. Remove peel, seeds, and stem. Cut fruit into chunks. Use 2 cups of fruit for each 13-inch by 15-inch fruit leather. Purse fruit until smooth. Add 2 teaspoons of lemon juice or 1/8 teaspoon ascorbic acid (375 mg.) for each 2 cups of light-colored fruit to prevent darkening.

If you choose to sweeten the leather, add corn syrup, honey, or sugar. Corn syrup or honey is best for longer storage because they do not crystallize. Sugar is fine for immediate use or short storage. Use 1 1/4 to 1 1/2 cups sugar, corn syrup, or honey for each 2 cups of fruit. Saccharin-based sweeteners could also be used to reduce tartness without adding calories. Aspartame sweeteners may lose sweetness during drying.

Leathers from Canned or Frozen Fruit

Home-preserved or store-bought canned or frozen fruit may also be used to make leathers. Drain fruit and save liquid. Use 1 pint of fruit for each 13-inch by 15-inch leather. Purse fruit until smooth--if too thick, add liquid. Add 2 teaspoons of lemon juice or 1/8 teaspoon ascorbic acid (375 mg.) for each 2 cups of light-colored fruit to prevent darkening. Applesauce can be dried alone or added to any fresh fruit purse as an extender. It decreases tartness and makes the leather smoother and more pliable.

Preparing the Trays

For drying in the oven, a 13-inch by 15-inch cookie pan with edges works well. Line pan with plastic wrap, being careful to smooth out wrinkles. Do not use waxed paper or aluminum foil.

To dry in a dehydrator, purchase specially designed plastic sheets or line plastic trays with plastic wrap.

Pouring the Leather

Fruit leathers can be poured into a single large sheet (13-inch by 15-inch) or into several smaller sizes pieces. Spread puree evenly, about 1/8-inch thick, onto drying tray. Avoid pouring puree too close to the edge of the cookie sheet. The larger fruit leathers take longer to dry. Approximate drying times are 6 to 8 hours in a dehydrator, up to 18 hours in an oven, and 1 to 2 days in the sun.

Drying the Leather

Dry fruit leathers at 140 degrees F. Leather dries from the outside edge toward the center. Test for dryness by touching center of leather; no indentation should be evident. While warm, peel leather from plastic and roll. Then, allow the leather to cool and rewrap the roll in plastic.

Chances are the fruit leather won't last long enough for storage. If it does, it will keep up to 1 month at room temperature. For storage up to 1 year, place tightly wrapped rolls in the freezer.

Adapted from Bell, Mary. Complete Dehydrator Cookbook, New York: William Morrow and Company, Inc., 1994.

Ohio State University Extension, All About Food Drying, 1974.