



Drying Foods Out-of-Doors¹

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SUN DRYING

The high sugar and acid content of fruits make them safe to dry out-of-doors when conditions are favorable for drying. Vegetables (with the exception of vine dried beans) and meats are not recommended for out-of-doors drying. Vegetables are low in sugar and acid. This increases the risks for food spoilage. Meats are high in protein making them ideal for microbial growth when heat and humidity can't be controlled. It is best to dry meats and vegetables indoors using controlled conditions of an oven or food dehydrator.

Sun-dried raisins are the best known of all dried foods. California produces much of the world's supply of raisins. In the San Joaquin Valley warm temperatures, low humidity and a constant breeze are ideal conditions for drying grapes.

To dry fruits out-of-doors hot, dry breezy days are best. A minimum temperature of 85°F is needed with higher temperatures being better. It takes several days to dry foods out-of-doors. Because the weather is uncontrollable, drying fruits out-of-doors can be risky. If it rains in California while the grapes are drying, the entire supply of raisins can be destroyed.

High humidity in the South is a problem for drying fruits out-of-doors. A humidity below 60

percent is best. Often these ideal conditions are not available when the fruit ripens and other alternatives to dry the food are needed.

Fruits dried out-of-doors must be covered or brought under shelter at night. The cool night air condenses and could add moisture back to the food, thus slowing down the drying process.

Equipment

Racks or screens placed on blocks allow for better air movement around the food. Because the ground may be moist, it is best to place the racks or screens on a concrete driveway or if possible over a sheet of aluminum or tin. The reflection of the sun on the metal increases the drying temperature.

Screens need to be safe for contact with food. The best screens are stainless steel, teflon-coated fiberglass and plastic. Avoid screens made from "hardware cloth." This is galvanized metal cloth that is coated with cadmium or zinc. These metals can oxidize, leaving harmful residues on the food. Also avoid copper and aluminum screening. Copper destroys vitamin C and increases oxidation. Aluminum tends to discolor and corrode.

Because birds and insects are attracted to dried fruits, two screens are best for drying food. One

1. This document is Fact Sheet FCS 8493, a series of the Department of Family, Youth and Community Sciences, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: June 1998. First published: February 1994. Reviewed: June 1998.
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screen acts as a shelf and the other as a protective cover. Cheesecloth could also be used to cover the food.

SOLAR DRYING

Recent efforts to improve sun drying have led to solar drying. Solar drying uses the sun as the heat source, but a specially designed dehydrator increases the temperature and air current to speed up the drying time. Shorter drying times reduce the risk of food spoilage or molding.

Solar dryers use a reflectant such as aluminum foil or glass to increase the sun's temperature by 20° to 30°F. Air current is improved by using air vents at each end. Cooler air enters the dryer, crosses the food, removes moisture and escapes. Plastic covers the frame and prevents rain or condensation from dampening the food. Screens over the vents keep insects and birds off the food.

Solar dryers may need turning or tilting throughout the day to capture the direct, full sun. Food on the shelves needs to be stirred and turned several times a day.

There are several models of solar dehydrators. Directions for making them at home can be obtained from your county Extension agent.

VINE DRYING

Another method of drying out-of-doors is vine drying. To dry beans (navy, kidney butter, great northern, lima, lentils and soybeans) leave bean pods on the vine in the garden until the beans inside rattle. When the vines and pods are dry and shriveled, pick the beans and shell them. No pretreatment is necessary. If beans are still moist, the drying process is not complete and the beans will mold if not more thoroughly dried. If needed, drying can be completed in the sun, oven or a dehydrator.

PASTEURIZATION

Sun dried fruits and vine dried beans need treatment to kill insects and their eggs.

1. Freezer Method-Seal the food in freezer-type plastic bags. Place the bags in a freezer set at 0°F or below and leave them at least 48 hours.
2. Oven Method-Place the food in a single layer on a tray or in a shallow pan. Place in an oven preheated to 160°F for 30 minutes.