

ENVIRONMENT & SCIENCE

Solar Food Dryers

March 01, 2005

I'm Gwen Outen with the VOA Special English Agriculture Report.

Drying food is a simple, low-cost way to keep food safe for eating. Drying removes water that small organisms use to break down food into other substances. Some of these substances may be poisonous to humans.

A device that uses the sun is a good way to dry food. There are several kinds of solar dryers. The easiest to build is called the direct dryer. The sun shines directly on the food being dried. The direct dryer is a box with holes in it so that air can enter and leave the box. It has a cover made of clear glass or plastic. When the sun shines into the box, heat is produced. The heat is trapped inside the box and cannot escape back through the cover. The heat dries the food.

The solar dryer works better if the sides of the box are black. This is because dark colors hold heat while light colors reflect it. One way to make the sides black is to use wood that has been blackened by fire.

If you use black paint instead, be sure the paint contains no lead. Lead is poisonous to people, especially children.

The box can be made of almost any material such as wood, concrete or sheet metal. The dryer should be two meters long, one meter wide and twenty-three to thirty centimeters deep. The sides and bottom should have additional material, called insulation, to keep the heat from escaping.

The surface on which the food is placed should permit air to enter from below and pass through to the food. A surface made of wires with small square openings works very well. You should use wire with the largest openings or squares that do not allow the food to fall through. Air that comes in from below the wire surface will also carry away water evaporated from the food as it dries.

A direct dryer will dry most vegetables in two-and-one-half to four hours at temperatures from forty-three to sixty-three degrees Celsius. Fruits take longer, from four to six hours at the same temperatures.

Solar food drying is fast, safe and low-cost. It is also healthy because nutrients such as vitamin C are kept in the food. Solar dried food also tastes and looks good.

You can get more information about solar food dryers from the group Volunteers in Technical Assistance. VITA is on the Internet at v-i-t-a dot o-r-g. (vita.org.)

This VOA Special English Agriculture Report was written by Gary Garriott. I'm Gwen Outen.
