

## SOLAR DRYING for VEGETABLES

*A simple method of preservation of vegetables for long term storage is to dry them. Vegetables dried to less than 10% will keep for more than six months when packed and stored in the right conditions.*

### CHALLENGES

Sun-drying is the most economical and ecologically sound method, but is slow, weather-dependent, and exposes the product to food safety hazards such as stray animals, foreign matter and microbes. Aflatoxin-producing fungi can become a problem, especially when drying is slow and done without regard to good drying practices.



### SIMPLE SOLAR DRYERS FOR RAPID AND HYGIENIC DRYING OF VEGETABLES

Solar dryers accelerate drying and produce a hygienic product in an enclosed drying chamber. Simple dryers were developed by WorldVeg in Southeast Asia; later, these were improved and applied in South Asia and Africa.



Indirect solar dryer (left) and cabinet solar dryer (above).

## TECHNOLOGY HIGHLIGHTS

Simple solar dryers maintain temperatures of 15-35°C higher than open sun-drying conditions; too high temperatures (below 60°C) can result in low quality product (discolored, loss of critical nutrients and antioxidants).

Leafy vegetables such as amaranth and African nightshade will dry within a day. Tomato and African eggplant slices, whole chili fruit, cabbage shreds and cauliflower florets dry in solar dryers to 10% moisture in 1-3 days compared to 2-6 days under open sun-drying.

### TOMATO

1. Sort good quality tomatoes
2. Wash
3. Blanch for 3 min
4. Slice fruit and soak in lemon juice solution Spread on drying trays
5. Dry in cabinet dryer
6. Store dried fruit in thick plastic bags

### CHILI

1. Sort red-ripe fruit; discard damaged and diseased fruit
2. Dip in 65°C water for 3 min to fix color
3. Spread on trays
4. Place in drying chamber
5. Store dried fruit in thick plastic bags



Dried vegetables can be soaked in warm water for a few minutes to rehydrate before use.

1. Blanch leafy vegetables for 1 minute.
2. Dip in cold water to cool.
3. Spread on trays, load into solar dryer.
4. Pack dried vegetables in thick plastic bags for storage.

#### ACKNOWLEDGEMENT

Financial support is provided by the Bureau for Food Security, U.S. Agency for International Development (USAID), under the terms of Award No. AID-BFS-IO-12-00004.

All opinions expressed in this technology brochure do not necessarily reflect the views of USAID.

**World Vegetable Center**  
Eastern and Southern Africa  
P.O. Box 10 Duluti  
Arusha, Tanzania

Tel: +255 (27) 255-3102/3093

Fax: +255 (27) 255-3125

[avrdc.org](http://avrdc.org)