

Solar Food Dehydrator

Crops of all kinds must be processed and stored for the time when they will be used as food for people or animals.

Grains and pulses (nuts) once threshed or removed from their shells and air dried can be stored for extended periods of time.

Fruits and vegetables on the other hand contain naturally occurring enzymes that quickly breakdown these moist foods. In addition because water is present, invading microorganisms such as bacteria and fungus find conditions ideal for fermentation and rotting processes making most such food unpalatable.

Because fresh fruits and vegetables have a limited time during which they may be saleable, preserving the abundance by dehydration may be an option for some fruits and vegetables.

The case dehydrator shown has an internal rack for placing screen trays on which food to be dried is placed. The glass or plastic covered solar collector is heated by the sun's rays and in turn heats air surrounding it. Warm air has a greater capacity to absorb moisture and moves slowly upward into the case where it picks up excess moisture from the food.

During warm sunny dry weather a batch of 12 to 15 lbs of thin evenly sliced fruit or vegetables can be dried in an eight hour drying day. Case drying protects color, appearance and nutritional values of food more than open sun drying.

Foods must be properly prepared prior to drying in order to stop the natural enzyme processes and to preserve natural color. This is done by soaking in solutions of citric acid (vitamin C), sulfites, acid fruit juice or sugar/syrup.





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TARGET USES:

To Dry:

- Fruits
- Vegetables
- Herbs
- Nuts
- Grains

TARGET USERS:

- Market farmers
- Women's Coops
- Housewives
- Market venders

ADVANTAGES OF DEHYDRATION:

- Prevents waste
- Changes perishable food into a storable product
- May add value to become a marketable product
- Dried foods retain nutrients and concentrate flavor
- Process uses "free" sun's energy
- Dried fruits make a healthy natural snack
- Dried vegetables great for soups, stews and salads

DISADVANTAGES:

- If the sun fails to shine food may spoil before getting dry.*
- Initial cost of unit may be beyond the means of those seeking to use it.
- Temperature should be maintained between 100 and 145 degrees F., requiring unit be monitored.

* CTI has developed and is testing a hybrid solar/propane dehydrator which uses auxillary clean burning propane flame for times when sun's energy is less intense.