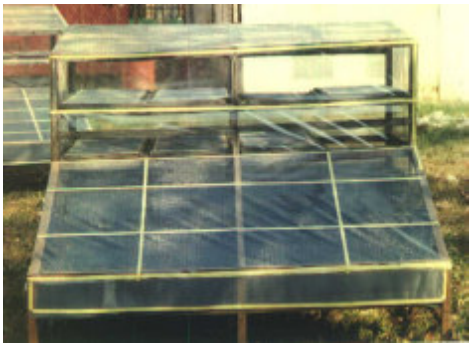
# Trans Solar Technologies - Solar Vegetable Dryer

Trans Solar Technologies introduces a new cabinet type multipurpose solar dryer, which can be used for vegetable/fruit drying, grain drying, cooking, cloth drying etc. Results for making powders of moringa leaves, tomato and potato powders, green chilly powders etc. are excellent.



Completed Solar Cabinet Dryer – 2 $m^2$ model



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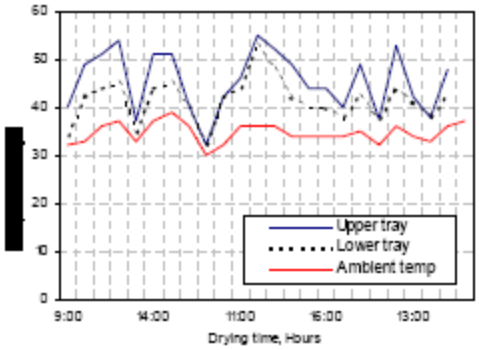
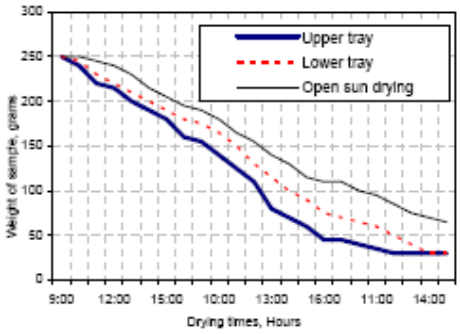
Trans Solar's new Economy model low cost solar vegetable dryer, which uses transparent polyester sheets instead of glass and collectors made of powder, coated steel sheets in place of aluminum sheets. Fabricated structure has the walling of the polyester sheets. Simple design and lower cost of the equipment will make it financially viable for farmers to use at local level.

Can also be used as Air heater, for industrial applications




Temperature profile inside the cabinet dryer (2 sq. meter)




(b) Drying curves for banana dried in the Solar Cabinet Dryer: 2 $m^2$ model

## FOOD DRYING FACTS

Drying is one of the oldest and simplest methods of food preservation. Dried fruits and vegetables are lightweight, do not take up much space and do not require refrigerated storage. Most importantly, they are healthy and delicious!

Foods can be dried in the sun, in an oven or in a food dehydrator. To dry foods outdoors, hot, dry, breezy days are best. A minimum temperature of 30"C is needed with humidity preferably below 60 percent. It takes several days to dry foods outdoors and they should be covered or brought under shelter at night.
The optimum temperature of drying food is 60"C. This is adequate for removing the moisture from food



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so that yeasts, bacteria and moulds cannot grow. If higher temperatures are used, the food will cook instead of drying, drying of foods evenly is the aim - if food cooks on the outside and moisture is trapped in the middle, conditions for mould growth occur. Turning foods during drying helps prevent this

## VEGIES & HERBS

**Peas & Beans** For peas and beans to use as pulses, dry as seeds with a sprig of any of the varieties of dried mint to enhance the flavour. Beans prefer a bay leaf in each jar.

**Garlic & Onions**

Garlic cloves and onions are pealed and sliced 3 - 4 mm thick. Dried, they are very useful as a backup to fresh alliums.

**Pumpkin**

Pumpkin, peeled and sliced to l0 mm thick is great for winter scones and soups, or to mash.

**Chillies**

Dry as is, or open and remove seeds for a milder flavour.

**Tomatoes**

Place in hot boiled water to scald for easy removal of skins. To a dish of cold water add a teaspoon of citric acid powder. This will prevent blackening of the tomatoes during the drying process. Cut small ones into halves, larger ones into 5 - 10 mm slices. Dip slices in citric acid solution; lay on absorbent cloth in dryer. Turn over pieces when dry to touch. When dried, tomatoes should be leathery. A dried basil leaf in the container will impart extra flavour.

**Herbs**

Pick after the dew has dried off and before flowering for best flavour and oils.

**Fruits**

Fruits are just as easy to dry, although some, like apples, tend to oxidise and brown. For any that do, use the citric acid solution as for tomatoes



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Fruit slices of 10 mm thick are dipped and then laid on absorbent cloth to dry.

**Grapes**

These are picked fully ripe and after a rinse to remove dust are left as small bunches. Turn every 2 - 3 days until grapes can be flattened between your fingers to a rubbery disc. Store in cool, dry and ant-proof containers.

**Figs**

Figs, fully ripe, washed and destalked, are pricked all over and placed in a pan. Make up a preserving solution of six cups sugar, three cups water and three tablespoons of white or cider vinegar for 2.75 kg of figs. Bring the figs to the boil then simmer gently for two hours. Drain figs, place on washable absorbent cloth in dryer. Solar dry until figs are in a soft leathery state. Roll lightly in caster sugar. Best packed in an airtight container lined with greaseproof paper and kept in a cool place where only you can find them. Just too delicious!

The preserving solution can be diluted and re-used for the second batch of figs, or is wonderful as syrup on ice.

## Information required for designing a drier.

1. **Item to be drier using solar drier.**
2. **Quantity to be dried per day.**
3. **Initial moisture content in the item to be dried.**
4. **Final moisture content in the item required after drying.**

## Price Range of solar Drier starts from Rs. 50,000/- onwards



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