The DIRT Society

Introduction to Solar Dehydration

Solar dehydration is one of the oldest methods of food preservation known. Using the sun to dry food effectively halts the enzymatic breakdown and bacterial growth that spoils fresh food, allowing consumers to keep fruit and vegetables for up to a year.

Even today, as electric dehydrators are constantly redesigned, adjusted, beautified, and marketed, solar dehydration is popular around the world.

Anyone with sunlight and a few simple tools can create a dependable dehydration system in hours, and enjoy the fruits of their labors after only two or three days.

Before learning the mechanics, it's important that you note the differences between indoor and outdoor food dehydration. Indoors, you can easily regulate the temperature and determine the appropriate time produce will need to dry. Outdoors, sunlight and weather will be variable, and food will take days, not hours, to reach ideal moisture content. You will also need to keep food away from traffic, machinery and chemical residues, making logistics a challenge for inner-city food processors. Despite these details, solar dehydration remains a favored method of drying due to its ease, low cost, and energy efficiency.

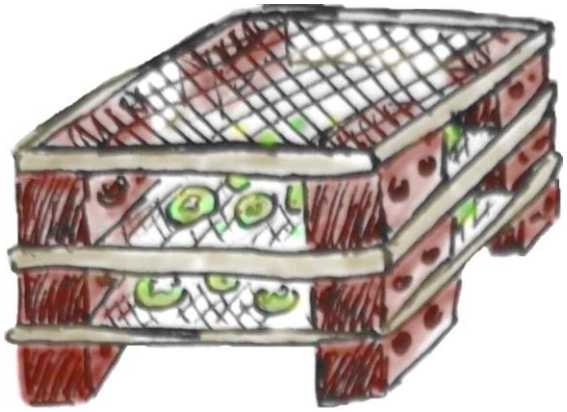
Solar dehydration is extremely simple. In essence, it is the practice of laying out small pieces of food under the sun (covered with light physical protection) until it is sufficiently dry. However, there are a few extra steps you can take to ensure quality, safety, and predictable results.

There are an infinite number of arrangements that will serve as solar dehydrators, but each should share the following properties:

1. Produce should have plenty of room when spread on a flat, ventilating surface.
2. Air should move around, under, and over food with ease.
3. Contact with metal should be avoided, as damp food will absorb unwanted particles over time.
4. Food should be protected by netting, screens or cheesecloth to deter insects and deflect debris.

To maximize the efficiency of your solar dehydrator, try the following:

- Slant your trays so they face the sun.
- Do not use too many layered trays. Aim, instead, to build a dehydrator with a greater surface area per layer.
- Add a dull reflective lining, such as aluminum, to amplify the light and warmth in the dehydrator.



Food will be properly dried once it can be snapped apart or is brittle to the touch. In more humid environments, you may need to use an oven or electric dehydrator to properly finish your dried fruits and vegetables.

If dried and stored properly, foods dried in your solar dehydrator will last a year. In unstable living situations, emergencies or unpredictable climates, this could mean a life-saving extension of valuable food stores. However, even when dehydrating isn't necessary, it is a simple and efficient way to conserve otherwise spoiled or wasted produce.

For more information on how to dehydrate produce, **read our introduction here**.