Solar food dehydrator is built almost entirely from scrap aluminum. "I built it because I wanted a more energy efficient dehydrator that can turn large quantities of apples into chips that we can sell," says Kent Scheer.

Dehydrator measures 12 ft. long by 4 ft. wide and is built in 3 sections. Each section has a pair of hinged doors for access.

He Built His Own Solar Food Dehydrator

"My solar food dehydrator has a simple design and was built mostly from scrap materials, which made it very affordable," says Kent Scheer, Wadena, Minn.

Scheer built the solar dehydrator almost entirely from scrap aluminum that he bought at a local salvage yard. He grows apples on his 60-acre farm and expects to use the dehydrator in a big way this fall.

The dehydrator measures 12 ft. long by 4 ft. wide and is built in 3 sections. Each section has a pair of hinged doors for access.

"It's big, and when the sun is out the aluminum makes it gleam like a jet," says Scheer. "I built it because I wanted a more energy efficient dehydrator that can turn large quantities of apples into chips that we can sell. Solar dehydrators let you dry food for free year after year, which appeals to me. I looked at all the other solar dehydrator designs and decided this one is the simplest and most failsafe.

"It's based on a design created by Larisa Walk and Bob Dahse of Winona, Minn. They built their first solar dehydrator in the 1980's, and now there are hundreds of them in the U.S. and abroad. It's designed to be built by small farmers but can easily be scaled up for commercial production. The key to its success is its simplicity - avoiding complex energy conversions and reducing heat movement as much as possible."

But Scheer took the Walk dehydrator design one step farther by making his dehydrator entirely out of aluminum. "Aluminum is easier to clean than plywood and should hold up better over time, without cracking, chipping or rotting," says Scheer. "Another advantage of using aluminum is that scrap aluminum is cheap and readily available. My dehydrator's foundation is made from 12-ft. aluminum I-beams that weigh 3 to 4 lbs. apiece. With scrap aluminum selling for about $1 to $2 per pound, I was able to build my dehydrator for less than $100."

He started building the dehydrator two years ago. "A small farmer in northern Minnesota proposed a dehydrator experiment to a University of Minnesota extension service funding agency and enrolled me in it. We're comparing my dehydrator with two other designs in three different locations, and so far mine compares favorably. The university would like to see the results made public so that others can benefit."

Sunlight shines through clear twin-wall polycarbonate glazing and heats up black-painted aluminum sheet metal, which radiates heat to the food below it.

Here's the design, from top to bottom.

Sunlight shines through clear twin-wall polycarbonate glazing (typically found in greenhouses) which protects the collector from the elements and helps create an insulating air space. The sunlight heats up black-painted aluminum sheet metal, and the back side of the black aluminum re-radiates infrared heat into the food below it, which sets on stainless steel screens. Moisture given off by the drying food passively flows out under the screens and up sloped air channels underneath the screens.

Building plans for the Walk solar dehydrator are available at www.geopathfinder.com/solar-food-drying.html.

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Roof-mounted rain gauge sends water down through a funnel and clear plastic hose to a rain gauge tube that Wood attached to a post under his porch roof. "I can see exactly how much rain we get by just looking out the back door," he says.

Elevated Rain Gauge Easy To Read

Larry Wood used to mount his rain gauge on a post in his back yard. The problem was that he couldn't see the gauge from his house and he got tired of mowing around it. He fixed the situation by mounting the rain gauge on his house.

"I removed the top part of the rain gauge and remote-mounted it on the roof over my back porch, just above the roof line. I used some light gauge aluminum to make brackets and glued a small funnel to the bottom of the rain pickup. Then I attached a 3/8-in. dia. clear plastic hose that runs about 3 ft. down to the rain gauge tube, which attaches to a post under the porch roof.

"It works great and now I can see exactly how much rain we got by looking out the back door. I bought the oversize rain gauge at Rural King. It detaches quickly to empty it after a rain. I'm sure you can find something similar online."

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Alton Eliason hangs plastic bags over his grapes, apples and other hanging fruit to keep them bug-free.

Bags Produce Bug-Free Fruit

Alton Eliason keeps his grapes, apples and other hanging fruit bug-free by bagging them. After 75 years of gardening organically, Eliason sees no reason to use even organic plant protection products if possible.

"Despite all my efforts to enrich my soil by mulches and other enrichments, keeping the plum curculio, the codling moth and especially the apple maggot from rendering my apples inedible has been a losing battle, until I started bagging apples," says Eliason.

In the past, the 99-year-old sprayed with Imidan for plum curculio and 10 days later for codling moth and hung Tangle-Trap red balls for apple maggot. Today he simply hangs plastic bags over the fruit, and that includes grapes as well as apples.

"Take a plain plastic bag and cut a small hole in the lower corner to allow moisture to drain out," says Eliason. "Place it around the apple when it is 1/2 to 1 in. in diameter and staple it closed to either side of the stem."

Eliason says the same process works just as well on grapes and other fruit as on the apples. He adds that the bags do more than just eliminate poisonous spray. "No more deer fence, no bird damage, and no worry about being wiped out by a hail storm," he says.

Although any small plastic bag will work, Eliason recommends using dog waste bags from pet stores. "Just cut them off to about a 9-in. length," says Eliason.

Eliason credits working in his gardens and gardening organically for reaching 99 years of age. He notes that in November, he and his 101-year-old wife will celebrate their 80th wedding anniversary.

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