

Solar grain dryer is mounted on the chassis of a mobile home for portability.

**"I WOULDN'T DRY CORN ANY OTHER WAY"**

## Build Yourself A Solar Dryer

An Iowa farmer dries his corn for 1½ cents a bushel, using a home-made solar collector mounted on an old mobile home chassis. "I wouldn't dry corn any other way," says Calvin Colony, of Oxford. "What other way can you dry a bushel of 31% moisture corn down to 17% for a cent and a half?"

Colony's collector, pictured here, is 8x24 ft. x 8 in. deep and is baffled so that air moves up and down around the baffles on its way through the collector and into the 8,000-bu. bin of corn. An 8 hp fan pulls air through the collector and into the grain. Colony claims he has achieved air temperatures as high as 170°F.

The Iowan farms 320 acres and raises corn which he feeds to livestock. He stores and feeds through the winter, and says he can get by with the 17% moisture. "Bringing corn on down another 2 points would be the most difficult part of my drying procedure," he says. "A small electric heating element would be of great help."

His home-made collector, built with the help of an Iowa State University professor, cost \$200 when it was built three years ago. It is made of aluminum, painted black and shaped into fins, glass, foam insulation, and wood. It is mounted on the chassis of a burned-out mobile home, and the aluminum is pop cans cut open and flattened out. He used glass rather than fiberglass because he feels it is more efficient for letting in the sun's rays.

The advantage of the mobile home chassis is three-fold: (1) The collector is portable; (2) It can be tilted, using concrete blocks, to face the sun directly; and (3) The collector face can be turned away from the sun for summer, which is necessary to protect it.

Temperature of the air from the collector differs, depending on the position of the sun in the sky, which changes during the day and from

month to month. Colony says that during the winter months, when the sun is at a lower angle, the solar collector will produce warmer air. Also, he says, humidity in the air can reduce the temperature.

He likes to use reflector panels on the ground in front of the collector to increase the amount of heat obtained. Also, he uses a grain stirring system in his grain bin to aid in the drying process and to retard grain spoilage.

"Solar-dried grain is like crib-dried grain," says Colony. "It's a deeper yellow; no cracking or grain damage occurs with solar drying. It's better quality grain."

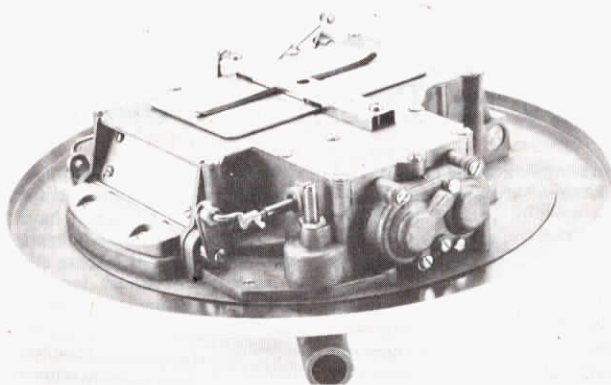
He lists these disadvantages of his system:

- Time to dry is long. Last year it took 21 days to dry 6,000 bushels.
- A collector is needed for each bin.
- High winds can damage a collector.

Some do's and don'ts include:

- Don't try to pull all the air from drying through the collector, just enough to pick up the heat. It takes too much electricity to pull all the air through the 120 ft. collector and attached tubes.
- Do use break-resistant glass instead of fiberglass.
- Do use pop cans cut open. "Aluminum was invented to collect and dissipate heat, and aluminum cans are cheap."
- Do put baffles in the collector so that the air doesn't bypass some of the heat as it moves through.
- Do put the collector on a mobile home trailer frame.
- Don't let the collector face the sun in summer as it can get too hot.
- Don't turn off the fan, because it takes all night to cool off the collector and all day to heat it up. Corn seems to dry faster if you heat and cool it repeatedly.

For more information, contact: FARM SHOW Followup, Calvin Colony, Rt. 2, Oxford, Ia. 52322 (ph 319 645-2831).



Dual Fuel System costs about \$1,000 installed.

**LETS YOU BURN LP OR GASOLINE**

## Dual Carburetion For Your Car or Pickup

How'd you like to cut your car and truck fuel costs, extend the time between oil changes and overhauls, and go further between stops for fuel? You don't need to switch to a new, exotic, unheard-of miracle fuel. Simply install a dual fuel carburetion kit that lets you burn either gasoline or LP-gas.

With kits offered by Century LP-gas Div. of Borg-Warner, you can burn either LP-gas or gasoline, and switch on the go. Or, you can convert entirely to LP-gas.

Century has made LP-gas carburetion equipment for years. But recent interest in dual fueling has swamped the company with orders and officials say they're working strictly on car and truck units now. So far, they haven't designed or tested dual fuel tractor units.

Advantages cited by Century for burning LP-gas include less contamination of engine oil — which results in fewer oil changes, less sulphuric acid formed in the engine for longer wear, fewer or no muffler and tailpipe replacement, fewer engine tuneups and up to 50% savings in fuel cost.

LP-gas has lower heat value than gasoline, so mpg is generally 7 to 10% less than for the same engine burning gasoline. But, LP-gas sells for about 60-70 cents per gallon in most areas, compared to \$1.20-1.30 or more for gasoline. There presently appears to be a world surplus of LP-gas which Century officials expect to last at least five years. So, if you act now, you should be able to recover your investment without trouble.

If you dual fuel an engine you should burn gasoline at least a half-hour per week to keep from drying out the carburetor, say Century engineers. The switch from LP-gas to gasoline is done by simply flipping a switch on the dashboard without stopping the engine. It's advisable, though, to burn all the gasoline out of the carburetor when you return to

LP-gas, says Century. A neutral position in the fuel control permits stopping gasoline flow while you're driving. In a few seconds, when the engine starts to hesitate, go to LP-gas.

The Century kits have what is called a variable venturi that permits the same kits to be installed on almost any size engine by simply using different adapters. The Century Acucarb Dual Fuel system costs about \$1,000 installed, and some sets have been used for more than 700,000 miles, on two or three vehicles. Owners simply removed the kit when trading and installed it again on the new car or truck, says Century rep, Murray Hoggarth.

Hoggarth notes that some car manufacturers, in the past, had been reluctant to honor warranties on vehicles converted to LP-gas, but that there is little or no problem at present.

Cold weather starts on LP-gas are no problem, says Century. Newer system designs have also eliminated the need to start the engine on vapor and switch to liquid LP-gas when the engine warms up. "Now," says Hoggarth, "You just get in, start the engine, let it warm up a little, and go."

Century says most mechanically-inclined farmers could install a dual fuel kit themselves. Some technical assistance may be required in calibrating the system for the proper fuel flow — richer for surges of power, leaner for cruising.

Century makes no direct sales of their LP-gas conversions. All sales are made through a nationwide network of distributors who, in turn, sell through local LP-gas dealers and equipment suppliers. So, if you're interested in a Century dual fuel system for your car or truck, Century sales people ask you to go first to your local LP-gas dealer. If he doesn't handle the kits, he can probably refer you to the nearest dealer that does.