



"It cut our fuel bill in half," says Craig Stortz, who built a bean stover-fired burner to dry corn.

Stortz put a section of a 28-ft. Harvester silo over the 24-ft. dia. firebox.



## Harvester "Plenum" Channels Hot Air To Dryer

When Craig Stortz built his bean stover-fired burner for use in drying corn (Vol. 29, No. 5), he knew he would slash his fuel

bill. He also knew he could make it more efficient. This year he replaced the leaky plenum he built over the burner with a section from a 28-ft. Harvester silo.

The current harvest season was still underway when this story was written, so final figures were still unavailable. However, with his original setup, the air entering his dryer ran 95 to 105 degrees. Propane was used to get the dryer up to 150 degrees. Thanks to the addition of the Harvester, he is sending 120 degree heat to the

dryer. Last year, which was an ideal season, he used no propane at all.

"The burner by itself cut our fuel bill in half," says Stortz. "The used silo only cost us \$200, so it doesn't have to lower the bill much to more than pay for itself."

Stortz lucked out when the Harvester was being torn down on a neighboring farm. The 28-ft. dia. unit was just the right size to fit over the 24-ft. dia. firebox.

"We had a crane pick it up and set it in place," he says.

Once Stortz had a doorway cut out and curtained off to hold the hot air in place, he was ready to go. Early this season he experimented with wood as a fire source, but since has returned to soybean fodder bales.

"Soybean bales are best," he says. "Wood just doesn't supply enough btu's."

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## She Uses Compost To Heat Her Greenhouse

Why burn propane or fuel oil to heat a greenhouse if you can get the heat for free? Herb grower Katherine Brooks heats a 12 by 16-ft. greenhouse at virtually no cost using a compost pile.

"The entire system cost less than \$200 for materials, and operating costs are about 30 cents per day," says Brooks. "If I was using propane, the heater would have cost \$1,400 and daily operating costs would be more than \$7.00."

After 30 years of composting, Brooks knew an active pile produces plenty of heat. She also knew that the most efficient way to heat plants in a greenhouse is to heat the beds, not the air. She combined those two facts with information that adding wood chips to a compost pile slowed the breakdown, producing more heat over time.

At one end of the greenhouse, she built a 5-ft. dia. compost pile using a wire mesh frame reinforced with steel pipes. Polyethylene sheeting lines the sides and covers the top to hold in heat and retain moisture. The pile itself consists of harvested cover crop, wood chips and a small amount of manure. A 5-gal. metal reservoir, partially filled with water and containing a sump pump, is buried deep within the pile. Black plastic pipe coiled through the pile is connected at one end to the sump pump. At the other end, it exits the pile and connects to a length of insulated hose that runs to growing tables in the greenhouse.

"The hose is installed in a zigzag pattern within the tables," says Brooks. "Water heated in the compost pile is pumped through the hose to warm the plant containers that rest on wire mesh over the hose."

After water has been pumped through the tables, it returns to the reservoir to be reheated and recirculated. The key to the successful program is an active compost



To supply heat, Katherine Brooks ran pipe through a 5-ft. dia. compost pile at one end of her greenhouse. Compost pile is contained by a wire mesh frame.

pile to provide the heat in the first place.

"I carefully construct the pile," she says. "I add 3 to 4-in. layers about twice a week as the material breaks down and settles."

Initially Brooks heaps the compost pile about a foot or so above the frame. She says a compost pile takes about a week to build up and maintains heat in the 140 degree range for about two weeks. The wood chips extend the heat production. After the initial burst of heat, the pile sustains a temperature range around 115 degrees. While cooler, it's still enough to heat the greenhouse sufficiently for herbs and other vegetables she markets in her business, Misty Morning Herbs and More.

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Compost-heated water runs through lengths of insulated hose under growing tables in greenhouse.