

## Outdoor Wood Stove Built With Old Combine Wheels

Old wheels from a Deere combine help keep Don Luschen and his family warm in their Wayne, Neb., home.

Over the past 15 years, Luschen has made about a dozen "combine" stoves for friends, family and neighbors using wheels, auger tubing and other scrap parts. The forced air outdoor stoves burn wood. Old furnace blowers circulate heat.

Luschen prefers to use big beveled Deere wheels that create cones on each end when two of them are welded together.

He makes a 22-in. door for easy loading on one end of the stove and a draft on the other end.

In the back he cuts two 6 or 8-in. holes depending on what used auger tubing he has on hand. The top hole is for the heat duct. The bottom is for the cold air return that moves air back to the stove with an old furnace blower in the basement. The ductwork is insulated. A stovepipe goes out the top of the stove.

Luschen creates a dead air space for the heated air to circulate, between his wheel firebox and an insulated box. He builds a frame of angle iron, covered with metal and makes a second frame and fills the area between with sand or dirt. Or, he pours a cement foundation and builds concrete block walls with a cement roof and boxes in the front with metal. It's important to let the cement cure for a couple of months before using the stove, he notes.

"You can use anything round with thick metal for the firebox. I built one stove I could crawl into and almost stand up. It had a 24-in. truck wheel for the door," Luschen says. "I like them 4 ft. long, because you can burn

pallets, which most people haul to landfills."

He usually fills his stove in the morning and at about 10 each night. He sets the drafts on the front and on the stovepipe according to how fast he wants the fire to burn.

He notes that he's used the smaller back wheels of a combine and even an old boiler he cut in two to make two stoves. All his parts are scrap. The wheels, for example, are often cracked. He welds them shut and they work just fine for a stove.

In the 15 years he's used his combine wheel stove, he's only had to replace the used furnace blower twice. The blower runs continuously and costs about \$22 to \$25/month to run.

That's a big difference from the cost of 500 gal. of propane that he used to burn every month. The wood stove is tied into the furnace system and ductwork, so the propane furnace kicks in if needed. That amounts to about 150 gal. a year.

"What I like about this stove is that there's no dirt or dust in the basement. There are no rodents or ants that come in with the wood. And there's no smoke in the house," Luschen says.

It's handy for him to dump a load of wood next to the stove, and he can burn green wood (mixed 50/50 with dry wood) and other junk wood. He removes ashes from the stove every two to three weeks.

The stove has another side benefit. "We built a pet house on top of the stove, and a cat sleeps in it all winter," Luschen says.

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Don Luschen uses old wheels from Deere combines to make inexpensive outdoor wood burning stoves.



A 22-in. dia. door is cut into one end of stove for loading wood. A heat duct and cold air return are on back.

## Big Bale Burner Pays For Itself Fast

An article in FARM SHOW several years ago gave Doug and Bruce Youngblood the idea to build their bale-burning hot water furnace to cut heating bills.

"We built one stove and then another, and the second one worked even better," says Bruce Youngblood. "Then we built one for a neighbor, and others wanted them, too."

The Youngbloods worked with a neighbor who drew up blueprints. Topeka Metal Specialties, Topeka, Kan., produces components, and the family builds stoves to order. So far they have 9 stoves in place and lots of interest from other chicken and turkey growers.

"We'll burn four bales of dry fescue at \$15 each or two bundles of slab wood for \$30 per day," says Bruce Youngblood. "Either way, we replace about \$300 worth of propane. A four-house farm will use \$40,000 to \$50,000 of fuel a year, but our stove can drop that to \$12,000 to \$15,000."

Youngblood recommends one stove for a set of four 500-ft. by 40-ft. poultry houses. He says their 10-ft. tall, 8-ft. wide and 12-ft. long stoves sell for \$57,000 with radiators selling for \$425 each. Each radiator is attached to

the front of an existing fan. A full system, including radiators, pipes, stove, cement pad and pumps, will cost a grower from \$85,000 to \$90,000. A smaller stove sells for \$37,000.

"We supply all the parts and directions for installation, and most farmers do it themselves," says Youngblood. "We sold one to a big welding shop that has hot water heat in their floor. We don't recommend them for homes as they are too big to be economical, but they would be ideal for grain drying or greenhouses."

The big stoves weigh in at 17,500 lbs. Bale chambers are 1/2 in. thick, 7 ft. round and 10 ft. deep. Chambers are surrounded by a 7,000-gal. water jacket that heats to 160 to 165 degrees F.

"The smaller stoves also handle big round bales, but the water jacket holds only 2,000 gal.," says Youngblood.

All the electrical controls are hard-wired with no computers or software involved. Each stove has an aquastat to control the rate of burn and a timer for shutdown control.

Water is constantly pumped through the door to keep it cool. Forced air fans in the



Doug and Bruce Youngblood build bale-burning, hot water furnaces that help local chicken and turkey growers cut their heating bills.

door and the opposite end of the chamber encourage a clean, complete burn.

As a new bale or bundle is pushed in, the ashes are pushed out of an ash chute at the rear of the chamber. Water is pumped out of 2-in. lines by a 120 gpm, 3 hp pump. The pump maintains 20 to 30 lbs. of pressure in the lines to feed radiators. Cooled water is then cycled back to the stove for reheating.

The Youngbloods designed their radiators for use in high dust environments. With only

7 fins per inch, there is room for dust to push through and not plug the fins.

"We sell stoves direct, but also have a dealer in Mississippi and are looking for dealers in other parts of the country, too," says Bruce.

Contact: FARM SHOW Followup, B & D Heating Systems, LLC, 2819 Panda Rd., Diamond, Mo. 64840 (ph 417 540 5358-Bruce; 417 325-6270-Doug; bdheating\_agriflame@live.com; www.agriflame.com).

## Commercial Quality Battery-Powered Mower

It seems like electric-powered riding mowers are popping up all over but they're limited to residential use because of their average 1-hr. drive time. An Ohio company made a big splash at the recent GIE+Expo in Louisville with a zero-turn battery-powered mower that they say will run all day.

That's because it has an innovative deep-cycle battery pack that can be quickly swapped out with a fresh battery pack. The 6 lead-acid batteries in each pack provide an average 90 to 120 min. of mowing time,

enough to mow 3 to 4 acres. Once they wear down it takes less than 5 min. to swap in a fresh battery pack. The tractor has a 62-in. floating deck with four blades, each direct-driven by an electric motor. Top mower speed is 9.3 mph.

Sells for \$9,500 plus \$1,900 per battery pack.

Contact: FARM SHOW Followup, Mean Green Products, LLC, P.O. Box 317, Okeana, Ohio 45053 (ph 513 200-7561; www.meangreenproducts.com).



Zero turn mower uses a deep-cycle battery pack that provides an average 90 to 120 min. of mowing time. A replacement battery pack can be installed in 5 min. or less.