

"Owner's Report" On Corn-Burning Stoves

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but the corn furnace is our main heat source.

"I wanted to avoid having to carry corn into the house and down to the basement where the furnace is, so I set up a 150-bu. gravity flow bin to hold my fuel corn. I make sure the corn is 13 to 14 percent moisture and screen everything so we don't have any problems with corn bridging up or trash logging the auger.

"I bought a fiberglass bin to make it look nicer and located it behind the garage so it wasn't as obvious from the front of the house. It's about 50 ft. from the furnace. To fill the furnace hopper, I ran a flex auger underground from the bin through the basement wall.

"The furnace has a 12-bu. hopper. A pressure switch in the hopper controls the flex

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auger. It wasn't all that difficult to set up, and we don't have to carry any corn this way.

"There's hardly any ash to remove, and it takes only a couple of minutes to clean it out. I only carried out seven 5-gal. pails of ash the whole winter."

Mary Bronzynski, O'Neill, Nebraska: "We bought a freestanding **Golden Grain 2000** stove for our living room just over a year ago. We're just thrilled to death with it. The living room has a lot of windows in it, and even with forced air heating, I was always cold in there in the winter. I love the heat from it and it's very economical. It looks nice in my living room and I haven't been cold since we put it in.

"We operate a hay grinding business, but we don't grow corn so we have to buy grain for the stove. I tried burning wood pellets in it but I prefer corn, which is also less expensive.

"We've been buying corn from a local grower. He brings it to us in a gravity flow wagon. We store corn in our garage in 50-gal. drums and carry it to the stove in a 5-gal. bucket.

"We liked it so much we bought a model 3100 portable furnace to use in our shop. Our daughter and her husband are heating their home with a corn stove now, too.

"We didn't need to put in a chimney or do anything special to install the stove. It vents through a sidewall, just like a clothes dryer. And it doesn't get any hotter than a dryer, either.

"After having the stove for a few months and hearing my neighbors still complaining about high fuel costs, I contacted the company that made my stove and asked if I could become a dealer. We've sold several of them in the area now."

Bob and Marilyn Brandt, Rural Energy Products, Van Wert, Ohio (ph 419 238-4580): Bob and Marilyn have been selling corn burning stoves for 10 years and are passionate about them. They offer a great variety of different stoves as well as fireplaces, furnaces and boilers.

"Most people with corn stoves use only a

bushel or a little more per day," says Bob. "Even in the coldest weather they will use less than a hopper wagon load of corn - 150 to 250 bushels, depending on the winter. However, last winter we had customers who didn't even use 100 bushels as it was a mild winter here in Ohio. Most corn stoves are multifuel stoves in which you can burn wood pellets, wheat, rye, cherry pits, etc. Of course, these fuels have different btu ratings. The older style corn stoves have a stationary firepot in which you need to change the clinkers once a day. There's a tool to do this and the hot coals fall to the bottom of the pot after you flip the clinker out of the firepot into the combustion chamber. If you don't get the clinkers out every day or so the fire will be smothered out.

"The Envirotec and Golden Grain stoves have this stationary firepot. The American Energy Systems "Countryside" and the Country Flame "Harvester" have a stirrer in the firepot to grind up the clinkers and then put the ash in the ash pan. However, generally you only get a cup of ash or so a day with a stove. The corn needs to be fairly clean as any fines will create more fly ash and larger pieces of cobs or stalks can stop the auger. Most combines today do a good job of cleaning the corn so it doesn't need to be cleaned before burning in most corn stoves.

"The clinkers, ashes, or fly ash can sometimes be a problem if the stove isn't properly maintained. We like to sell ash vacs with our corn stoves so that people don't need to shut them down and can vacuum ash while the fire is still burning.

"Ash vacs are totally fire retardant including the filter and hose. It is self-contained and doesn't blow ash in your house like a shop vac does. You need to be careful when using a shop vac or other vacuum because you don't want to start a fire with hot ash.

"Moisture in corn can be a problem and corn should be under 15 percent but less than 18 percent moisture or most of the stoves and furnaces we have tried might have a problem and go out. It takes a lot of air and heat to keep corn burning. We suggest that if corn is over 15 percent but less than 18 percent to add a few wood pellets, and often this helps carry the extra moisture so the fire won't go out. Most of the heating units haven't gotten to self ignition, but it isn't hard to start them with wood pellets. Corn needs to be stored in proper containers so it doesn't draw moisture and it's best if it's sealed in some way to not invite rodents. Some people who don't grow their own corn have difficulty finding good clean corn - even at a grain elevator.

"We've sold many kinds of corn heating units and presently sell the American Energy System "Countryside", the Country Flame "Harvester", the Envirotec, and the Golden Grain. We also like the Harman "Invincible" because it's a cast iron stove that can burn up to 60 percent corn but really is a pellet stove.

"At present we are testing the new St. Croix "Lancaster" and have been impressed with it so far. It's well-built and is a smaller corn stove that some people will like. We also sell the A-maiz-ing Heat furnace and boiler. It has a large 14-bu. hopper and a bottom feed which works quite well. We also sell the Traeger corn furnaces and boiler. They work well as stand-alone or add-on furnaces. FARM SHOW readers are welcome to visit our on-farm showroom near Van Wert, Ohio."

"Vibrating Cleaner" Feeds Corn Stove

When Roger Foster bought a corn-burning stove, he needed a way to clean the distressed corn which he bought from a local elevator. The Tower, Ill. farmer ended up building his own portable cleaner out of an old commercial vibrating concrete machine.

"It's a small scale cleaner, but it works good and didn't cost much to put together," says Foster, who uses the rig in his machine shed.

The vibrating screener was originally powered by a gas engine. He replaced it with a 1/2 hp electric motor, which belt-drives the vibrator. Above the vibrator he built a wooden screen housing which consists of a 1/2-in. hardware cloth on top and a 1/4-in. hardware cloth below it.

The machine has three discharge points. Cobs and stalks come off the top-mounted 1/2-in. screen and fall into a 5-gal. bucket in front. Clean corn comes off the 1/4-in. screen and falls into another 5-gal. bucket on one side. Fines drop through the 1/4-in. screen and are discharged into a third bucket on the other side.

"It's a simple design but it works well," says Foster. "I can vary how much the screens vibrate by changing the size of the pulleys. Corn is augered into the cleaner from a nearby gravity wagon."

Foster says no plans are available.



Roger Foster turned a commercial vibrating concrete machine into this portable cleaner that he uses with his corn burning stove.

Contact: FARM SHOW Followup, Roger Foster, Rt. 1, Box 108, Tower Hill, Ill. 62671 (ph 217 567-3417).

High Output Corn Burning Furnace

"It has more capacity than any other corn burning furnace on the market. It also doesn't leave any clinkers," says Merton Anderson, Year-A-Round Corp., Mankato, Minn., about his company's new corn burning furnace.

The furnace is available in three models. The biggest, model 950, measures 55 in. long, 30 in. wide, and 55 in. high and weighs about 850 lbs. It has a heating capacity of 12,000 to 50,000 sq. ft. and uses anywhere from 10 to 100 lbs. of corn per hour. The unit is equipped with a big 21-in. variable speed fan that moves air from the stove into existing heat ducts. An optional control panel allows you to control the heat from a wall-mounted thermostat.

"It puts out 100,000 to 950,000 btu's per hour and transfers 2,000 to 3,000 cfm's per minute," says Anderson. "It has so much capacity that you can even use it to dry corn, which we did last fall on a farm. We took some of the corn that was coming out of the dryer and on its way to the cooling bin and augered it into our stove, which then burned it and sent the heated air back into the dryer. The heat from the corn burner was able to supply about 150 cfm's to the dryer. If you need additional cfm's you can set the thermostat on your dryer accordingly. The supplemental heat saves a lot of money."

According to Anderson, the unit spreads corn in an even layer throughout the firepot which results in a hot fire. "The firepot temperature at full capacity is 1,550 degrees. A patented agitator equipped with metal teeth welded onto a tube moves a small amount of corn continuously into the burner. The corn disintegrates just from the tremendous heat. You'll never get a clinker," says Anderson. "You will get some ashes, but not a lot."

Anderson says he got the idea for the corn burner a few years ago when the heating bill for his factory was more than \$13,000 - for



"It has a lot of capacity and doesn't leave any clinkers," says Year-A-Round Corp. about its new corn burning furnace.

one month. The next month the bill was even higher. He thought there had to be a better way so he started developing his own corn burner. Now he heats the entire factory with corn. "We're saving \$6.50 per million btu's," he says.

The smallest model, model 150, stands 36 in. 26 in. long, 20 in. wide, and 36 in. high and has a heating capacity of 500 to 4,000 sq. ft. It puts out 10,000 to 150,000 btu's per hour and transfers 900 to 1,400 cubic feet per minute. It sells for about \$3,000.

Model 500 measures 40 in. long, 28 in. high, and 42 in. high and has a heating capacity of 4,000 to 12,000 sq. ft. It puts out 40,000 to 500,000 btu's per hour and transfers 1,500 to 2,200 cfm's. It sells for about \$5,000.

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