

“Manure Furnace” Burns All Kinds Of Waste

A revolutionary new kind of furnace for burning all kinds of waste material from manure to green wood is ready for market after years of research.

“It works just like an old forge,” John Kimberlin says, explaining that the furnace burns at up to 1,300 degrees, which makes combustion extremely clean with virtually no smoke or odor.

Manufactured by Nature’s Furnace, Inc., Waukee, Iowa, the new company has attracted interest from large farms, race tracks, landfills, and others - anywhere there are large piles of waste.

“This is a commercial size, computer-controlled unit,” Kimberlin says. It starts at \$60,000 and is not geared to residential use, at least at this point. But in the future, the “biomass reactor” may provide not only heat but also cooling and electricity for consumers.

The furnace’s ability to burn high moisture biomass - up to 75 percent - and not malfunction from contaminants such as rocks and dirt - also sets it apart from other biomass burners.

To design the furnace, Kimberlin and a group of engineers focused on heating from the center of the biomass and came up with a simple system with only 11 moving parts. No auxiliary fossil fuels are used to assist combustion. He applied for and received a 20-year patent on the process.

Biomass material is fed from a hopper into the furnace with augers and vibrators. To fire it initially, a series of strip heaters like burn-

ers on a stove are turned on. Once ignited, the burner goes into automatic mode, with the burn controlled and fed by air injected into the smoldering fire.

A heat exchanger is buried inside the combustor. Either air or fluid can be used. Because the exchanger is buried in the combustor, the outside of the furnace stays cool. Moist material is dried by the head of combustion as it works its way to the center of the furnace.

“Once I contained the mass and ignited it from the inside, I was able to see a combustion zone develop, like a cylinder of tornadic fire,” Kimberlin explains. “Heat outputs are incredible. Particle size and moisture variations have very little effect. As the fuel was radiating its own heat inwardly, it was also drying itself.

“What makes it unique is that it’s very small and very simple,” Kimberlin says. The furnace can be placed where the waste is, instead of moving the waste to it. On his own farm, Kimberlin used waste from tree trimming businesses when he didn’t have manure.

The furnace burns clean, and leftover ash is spread on the fields. It puts out 175,000 to 400,000 btu’s, depending on the installation.

Going through the process, Kimberlin gathered a group of inventors to create Nature’s Furnace. And he has surrounded himself with engineers to refine his creation, and meet EPA and government standards. They are working with micro thermal technology to create electricity. He established export markets and delivered furnaces to be



Furnace is shown here mounted on a trailer as a demonstrator unit.

used in poultry, equine and even a mushroom business.

It’s taken years to develop Nature’s Furnace, but with interest in green energy, the timing is right. Kimberlin likes to call biomass “Mother Nature’s battery,” and his furnace takes advantage of it in a very simple way.

About 3 percent of the weight of material is augered out as ash which can be spread on fields. Rocks and other non-flammable contaminants are also augered out.

Units have already been sold in Europe and are now ready for sale in North America.

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Furnace has the ability to burn high moisture biomass - up to 75 percent. Rocks, dirt or other contaminants do not affect operation.

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High-reach stacker can also turn bales sideways, if needed.

Bale Mover Stacks Bales Six High

It didn’t make sense to buy a \$10,000 loader to feed his small herd of Hereford cows. But at 81, Peter Quail needed to find a better way to move bales than his 3-pt. mounted bale forks. It was getting difficult for him to turn around to operate it.

“We rigged up an Altec Bale Stacker on the front and it has worked just great,” says Peter’s son, Nick. After testing the European-made stacker on their own farm, the Quails began promoting it in their business. The St. George Co. Ltd., which sells equipment for agriculture, construction, greenhouses, forestry and landscaping.

The stacker comes in three sizes, stacking large round bales four, five or six bales high. It grabs the bale and moves it up and down. A third cylinder with a hinge mechanism al-

lows the operator to turn the bale sideways or upright.

The stacker works on any tractor with 60 hp or more and lifts up to 1,320 lbs. It requires three hydraulic outlets, and fits on a front or rear 3-pt. hitch. The St. George Company also offers a front mount kit if a tractor doesn’t have a front 3-pt.

It’s easy to operate the Altec Bale Stacker, Nick says, and the price is reasonable - from \$4,000 to \$5,500, depending on the model. The St. George Co. sells direct throughout Canada and the U.S.

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Seed tube in a Deere 750 Series seed drill.

Easy Way To Calibrate A Drill

This simple seed calibration tool and chart can help you hit your target seeding rate every time, says Bob DeBrabandere, Woodstock, Ontario, who came up with the idea.

You simply attach a flange to one end of a 3-in. inside dia. pvc pipe so it’ll stand over one of the runs in your drill. It should stick down a bit so it won’t shift out of the way when in use.

To use, just fill your seed drill as you normally would, which will fill the tube with seed. Operate the drill long enough to use most of the seed from the tube. Measure the inches of seed used from the tube and use a formula shown on the customized seed chart for your drill, which you order from DeBrabandere, to determine the actual seeding rate. Adjust the drill as required, refill the tube, and repeat the procedure.

“It’s one of those ideas that’s so simple you wonder why no one’s thought of it before,” says DeBrabandere, who says customers make their own seed tubes with pipe and a toilet flange.

To order a chart for grains, just send a check for \$15 and tell him the number of runs on your drill. To add a grass seed chart, send an



Seed tube in a Case IH 5100 Series drill.

additional \$. The charts give a “rate factor” based on the number of drill runs and the bushel weight of the grain being sown. Using a pocket calculator, you simply multiply the rate factor times the inches of seed used divided by the acreage sown. This will give you the seeding rate in pounds per acre. The acres can be taken from the acre meter on the drill.

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