Air Exchange Unit Slashes Crop Drying Time And Cost

You can cut fuel use when drying crops by up to 75 percent with a Desert Air Crop Dryer, according to Siebring Mfg. The innovative drier uses a heat exchanger to dry with drier, cleaner air than conventional dryers. After several years of testing, the company is now taking orders for this fall's drying season.

"Conventional direct heat dryers are pumping a pound of water or more into the bin with each pound of fuel used," says Warren Tiederman, Siebring Mfg. "LP releases nearly a gallon of water per 100,000 btu's into the grain, plus contaminants. The heat has to dry that water out before it can start to dry the grain."

By putting a heat exchanger between the burner and the fan blowing the heat into the bin, Siebring uses drier air to begin with. The heat exchanger also prevents the water in the fuel from entering the bin.

When the heat exchanger warms the air even 10°, it doubles the air's water holding capacity. Heating it 20° quadruples water holding capacity. When it hits the grain, it pulls moisture out of the grain more effectively. It is that efficiency that saves fuel and time in the drying process, says Tiederman.

Eliminating the direct discharge of heat from the burners into the bin also protects grain quality. The cooler, but drier air reduces stress cracks and actually increases test weight.

"Farmers tell us corn coming out of our drying process looks more like corn dried on the cob in a crib," says Tiederman. "We had a North Dakota farmer take seed beans out at 19.5 percent, put them in a 60-in. thick layer in the bin and hook up one of our small units. When the company tested the beans, they found no cracks."

Siebring, a supplier of equipment for greenhouses, is new to the crop drying business. Tiederman grew up on a farm and had lots of experience with crop dryers. He and company founder Gordon Siebring realized the more gentle heat and cleaner air they produced with their heat exchanger-equipped greenhouse system would work on grain as well.

"We tested it for a couple years," says Tiederman. "At first we thought we would have to get the temperature up to 130°. We quickly realized we only needed to raise it a few degrees. A 10° increase on a dry, warm day has a huge effect."

The savings are huge as well. Tiederman points to one unit custom installed for a North Dakota farmer. He does the same job with 210,000 btu's that previously required a million btu's with a direct-fire dryer. The cost of the dryer is less as well.

"A 210,000 btu unit with our heat exchanger only costs about $4,000," says Tiederman. "Setup is simple. All you need is a fuel tank and a bin with a fan. Set the heat exchanger in front of the fan and start them up. We have a relay built in, so if the bin fan isn't running, our dryer won't run either."

Desert Air Crop Dryer uses a heat exchanger between the burner and fan to enable it to dry grain with drier, cleaner air than conventional dryers.

Tiederman says the Desert Air Crop Dryer works best with a bin equipped with a stirrator. However, even a simple full floor bin will work if the center is drawn down before drying starts.

While the heat exchanger idea is similar to natural air drying, the big difference is time and the expense of running the fan.

"Natural air drying might require the fan to run for a month," says Tiederman. "With our heat exchanger, energy use will actually be less."

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Demand Grows For Crabgrass Seed

It has been 17 years since FARM SHOW first reported on crabgrass as a forage crop (Vol. 18, No. 2). R. L. Dalrymple now sells two varieties of the seed. Demand continues to grow as more people become familiar with it.

"We sell across the entire country, but the 23 states in the South and the East are our major market," says Dalrymple, Elstel Farm & Seeds. "We have a lot of return customers, but there are still a lot of people who haven't heard of using crabgrass for forage."

Dalrymple's Red River Crabgrass RRCG and Quick-N-Big are different than the low growing weed you find in your lawn. The forage varieties grow around 3 ft. high, spread by stolons that can grow 4 ft. long and produce enough seed for volunteer re-establishment.

It's one of the highest-quality summer grasses, stays green until frost, and can continue to be grazed after frost. In a two year Florida study, the RRCG averaged 15.2 percent protein and 76.8 percent digestibility. This past spring, Red River Crabgrass seed sold for only $6 per pound; however, seed may be a problem next year due to the drought conditions in Oklahoma.

"Our crabgrass fields stayed green longer than others, but eventually they turned brown as well," says Dalrymple.

He notes that his fields had no measureable rain in 7 weeks and more than 40 days with temperatures of 100° or more. The weather bureau reports the area has had the least rain since 1921.

"It is mind boggling to me, even though I have worked with these grasses since 1972," says Dalrymple. "The Quick-N-Big still grew knee high and was enough to swath for some seed and bale for hay."

In a good year, he says, the crop yields 6 tons of dry matter per acre under intensive management. Average returns are closer to two to three tons of dry matter per acre in a pure stand.

"It can be seeded to a pure stand at a rate of 3 to 6 lbs./acre or used in a mix of summer forages," he says. "It can also be double cropped with winter annual grasses."

Photo Courtesy, Noble Foundation

Demand continues to grow for crabgrass as a forage crop, says R.L. Dalrymple, who sells two varieties of the seed.

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Company Offers "Turn Key" Phase Converter Service

If you need a converter to produce 3-phase power from a single phase line, you'll be interested in the "turn key" service offered by Remco Electrical Mfg. of Grandville, Mich. The company calls itself "the phase converter people".

"We deal with farmers all the time and they can't get over how easy we make it for them to convert single phase into 3-phase industrial strength power. We haven't found anything yet that was too complicated to provide a turn key system," says Steven Maki. "A lot of our business is ag-related, powering irrigation rigs, grain dryers, and elevator legs. We consider ourselves the Cadillac of the phase converter industry. None of our competitors puts together as nice of a package as we do."

According to Maki, 3-phase motors cost about half as much as single phase motors, and are considered more reliable, too, with fewer parts to fail. The only catch is getting 3-phase power to your farm, because utilities charge a lot to bring in a 3-phase line. "Buying a converter is a much less expensive route," he says.

He says their systems are built as simple as they can be made, and with the smallest number of moving parts. "The more stuff inside a panel, the more that can go wrong with it. We follow the 'keep it simple' rule to provide the best phase converters on the market."

Service is a big part of their business. "We answer our phones almost as much as we get work done, answering questions on problems farmers are having with old systems," says Maki. "For example, a farmer recently called to say lightning had struck a center pivot irrigation system and shorted out some electric lines. When he turned on the phase converter he ended up shorting it out. However, in one day we were able to install a brand new system and get the system running again.

"Some of our competitors send you a panel and then call a motor manufacturer and send you the motor from another location. We bring all the equipment needed to your farm. And when we build a panel we build it strictly for that motor, so you don't have to worry about putting all the parts together. You can just turn the system on and it's ready to go."

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Photo shows Remco's 480V automatic rotary phase converter panel equipped with multiple irrigation pump controls for additional loads.