



Seven rubber conveyor belts run the length of the 50-ft. hay drying machine. Micro-generators and aeration fans are evenly spaced along the aluminum housing.

## Microwave Hay Dryer

(Continued from cover page)

evenly out along the machine's 50-ft. length. Hay is picked up by the dryer's 7-ft. wide baler-type hay pickup. It's lifted up onto seven 11-in. rubber belts positioned side by side. The belts run the full length of the machine.

"It was a lot simpler and less expensive to use seven narrow belts rather than one wide belt, which would be too heavy and difficult to maintain," notes Herron.

A 580 hp. diesel engine, mounted in the middle of the machine, drives a 320 kw generator that provides electric power and a hydraulic pump that drives orbit motors that run the conveyor belts and hay pickup.

A housing made out of aluminum runs the length of the machine over the conveyor belts. Fans mount along the top of



A 580 hp. diesel engine drives a 320 kw generator to provide electric power.

the housing. "It's an extremely well-built machine, not just some schlocky contraption put together out of junk parts. It looks like it came off a production line somewhere but so far we've only built the one machine," says Herron, who'd like to bring the machine to market next year either on his own or in partnership with an established manufacturer.

Because the machine is self-powered, it can be pulled with a small tractor or even a pickup. Herron can cut, and then dry; 12 to 15 acres of hay a day with the dryer. "We pull it about as fast as you'd go with a square baler operating in heavy hay."

Although Herron admits the machine will be expensive (no "production price" has yet been determined), he feels he and other high-quality hay producers can justify the cost. "It lets us cut hay in the morning, dry it a couple hours later and have it at the horsetracks in Miami by midnight the same day. People will pay a premium for it because there's virtually no leaf loss and it keeps the dark green fresh-mown appearance it has when you first cut it in the field. Animals love it."

Herron says he can adjust the machine to take out as much moisture as necessary, depending on the crop. Because microwaves work by "exciting" water molecules, the new dryer gets rid of the water without damaging plant material, unlike other types of dryers which heat up the crop material to get the water out.

He has a simple answer for people who ask if the dryer is safe. "The only way you could get hurt by the microwaves is if you crawled up inside while it was running," he says, adding that the housing is completely sealed up so no one can "accidentally" get inside.

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Dawn's row crop planter looks more like a big grain drill because it's fitted with big-capacity seed hoppers. Front fertilizer toolbar adjusts up and down hydraulically.

## ROW UNITS MADE OUT OF 1-IN. PLATE STEEL

### Revolutionary New Row Crop Planter

"It's the first new-from-the-ground-up row crop planter in 30 years," says Jim Bassett, president of Dawn Equipment Co., about the company's beefy new planter which was introduced at the Farm Progress Show this fall. It features heavy plate steel row units specially designed to handle add-on equipment and lots of trash.

Dawn Equipment is best-known for its row clearing Trash Wheels. Problems with mounting the wheels, together with other miscellaneous add-on equipment, led Bassett to develop the new planter.

"Today's row crop planters were designed for use in conventionally-tilled ground with no attachments added to the frame. We've been adding more and more equipment the past few years that they just aren't equipped to handle," says Bassett. As a manufacturer of one of the most popular add-ons for planters, Bassett says he was continually dealing with breakdowns and other problems related to mounting trash clearing wheels on planters.

Heavy-duty row units made out of 1-in. thick plate steel are key to success of the new planter. They mount on a 7 by 7-in. toolbar. "Plate steel gives you the strength to handle planter add-ons and added weight for down pressure needed when you've got extra components and trashy conditions," Bassett explains.

The new 6-row looks more like a drill than a planter because it's fitted with a single 4,000 lb. capacity seed hopper and a 12,000 lb. fertilizer hopper up front. Both hoppers are lined with stainless steel inside.

Seed feeds by gravity to air-powered metering units beneath the hopper. Manufactured in Europe, Bassett says the system is the simplest and most effective seed metering system he's ever seen. Each unit has just one moving part - a metering wheel. Air is used to pick up seed and blow it

through plastic tubes to the row units.

"When changing from corn to soybeans or another crop, you just change the single plate," notes Bassett. Air power is provided by apto-driven fan mounted on the planter tongue. Air is carried inside the toolbar back to the metering units.

The row units have heavy-duty Timken bearings on all pivot points and wheels, and easy-to-use hand crank adjustments for depth control on planter units, Trash Wheels, and closing wheels. You can mount trash wheels ahead of or in back of a coulter, or both. "Some farmers like to have two sets of Trash Wheels. They set one to just barely skim the surface to get rid of bigger residue and set the other deeper to work the soil," says Bassett.

One unique feature on the new row units is a chain-driven solid-steel press wheel. "One of the biggest problems with current planters is that press wheels can drag and lock up, digging up the furrow. This press wheel can't lock up and always presses seed firmly into place."

Dry fertilizer is placed by openers mounted on the planter's front toolbar. It can be set up to plant 2 in. to the side and 2 in. below the seed. Two hydraulic cylinders make it easy to adjust the fertilizer toolbar up and down to adjust for field conditions and to keep plenty of down pressure on the rear planter units. Two 150 gal. tanks on the planter hold starter fertilizer.

"For planting soybeans in 15 in. rows, you mount row units on the front toolbar spaced between the rear 30-in. rows.

A 6-row sells for \$24,000. Units can be added to either end to make an 8-row.

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Row units are made out of 1-in. plate steel. All pivot points and wheels have Timken bearings. Solid steel press wheel is chain-driven.

Vol. 18, No. 6, 1994

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**FARM SHOW** is published bimonthly for \$13.95 per year (\$16.95 in Canada and foreign countries) by Farm Show Publishing, Inc., P.O. Box 1029, 20088 Kenwood Trail, Lakeville, Minn. 55044. Second class postage paid at Lakeville, Minn., and Madelia, Minn. POSTMASTER: Send address changes to FARM SHOW, P.O. Box 1029, Lakeville, Minn. 55044 (ph 612 469-5572; fax 612 469-5575). Single copy price is \$3.50 (\$4.00 in Canada). Publication No. 470870 GST No. 13127202.

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Nov.-Dec., 1994