



Trailer-mounted steam generator hooks up between tractor and baler. A pto shaft and hydraulic lines run through the trailer chassis back to baler.

TRAILER-MOUNTED BOILER INJECTS STEAM

“Dew Simulator” Adds Moisture To Hay Bales

Dry conditions in the western U.S. and Canada often mean hay growers have to wait - sometimes for days - for natural dew to form before they can start baling. A new “dew simulator” machine solves that problem by applying steam to hay as it’s being baled.

“It lets you bale hay 24 hours a day and maintain the right moisture content from start to finish,” says inventor Dave Staheli, Cedar City, Utah, who has spent the past two years developing the patented system.

The “DewPoint Simulator” is a self-contained, trailer-mounted steam generator that hooks up between the tractor and baler. A pto shaft and hydraulic lines run through the trailer chassis back to the baler.

The trailer is equipped with a boiler and a 650 or 1,300-gal. stainless steel water tank, as well as diesel tanks (to fire the boiler burner) and a gas-engine powered electrical generator (to power the boiler’s electrical system and DewPoint Simulator controls). Steam delivery hoses extend from the boiler back to the baler.

Injection manifolds mounted above and below the baler’s pickup assembly apply steam to the hay, softening it up instantly to prevent leaf loss and shattering during movement into the baler. Additional steam is injected into hay as it passes through the feed chamber and just before it’s compressed in the bale chamber. An electronic moisture sensor mounted in the bale chamber reads the bale’s moisture level and displays it on a moisture meter inside the tractor cab. The operator can adjust moisture level on-the-go from the cab by using a potentiometer that controls electric-actuated steam valves on the steam generator.

“I think it’s one of the most significant advances in baled hay production since the

development of the baler itself,” says Staheli. “Because of dry atmospheric conditions, most hay growers in the West must wait for dew to form before they can start baling. On average they can bale only 3 to 4 hours a day, and sometimes they have to wait a week or longer for dew to form. If they can’t wait and have to bale when it’s too dry they often get docked \$20 to \$40 a ton.

“So far we’ve developed two models - the 3100 for use with 3-string balers including the Hesston 4690, New Holland 500, 505, 515 and Freeman 330 and 370; and the 6100 for use with the Hesston 4900 1-ton baler. We haven’t tested it yet on round balers. The demand for these two models is growing very fast. However, we still have two more models under development - one for 2-string balers and one specially designed for 3-string custom operators where highway travel is required.

“It’s not an inexpensive system. For example, the 6100 model sells for about \$70,000. However, when you look at all the economics it saves you money. Our tests show that one baler hooked to the DewPoint system can do the work of two or three conventional balers. The dew simulator leaves each flake of the bale more defined and compact which reduces leaf loss and waste during handling and feeding. Another advantage is that bale density can be increased significantly, allowing you to store more tons of hay inside a barn. Also, fewer bales are needed on a truck in order to reach legal maximum weight limits.

Staheli plans to sponsor field demonstrations of the Dew Simulator this summer.

Contact: FARM SHOW Followup, Dave Staheli, Staheli West, Inc., 1280 West 3695 North, Cedar City, Utah 84720 (ph 801 586-3005; fax 6256).



Staheli offers two models - one for use with 3-string balers and one for use with the Hesston 4900 1-ton baler. When a centerline baler is used, a video camera is mounted on back of the steam generator with a monitor inside the cab.

RAISES AND LOWERS WITH THE FLIP OF A SWITCH

New-Style Dairy Barn Floor Drops Down For Milking

Moveable dairy barn floors have been around for years (see sidebar) but have never really caught on in a big way.

Among the first Canadian dairy farmers to try out a “drop down floor” are Gerrit and Carola Dekker of Springfield, Ontario. The 9 by 30-ft. hydraulic-powered floor is in their double-12 parlor in a new 200-head free-stall barn.

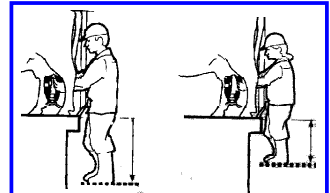
The system works great, say the Dekkers, who milk 140 cows. Adjusting the height of the floor to the height of the worker greatly reduces stress on the back,” notes Gerrit. “When you start stiffening up, one quick adjustment and you’re comfortable again.”

The Dekkers’ floor was designed by Embro Farm Systems (P.O. Box 100, 137 Huron St., Embro, Ontario, Canada NOJ 1J0; ph 519 475-4850). The floor is adjustable 16 in. up and down, thanks to a control panel that operates four 16-in. hydraulic cylinders underneath the corners of the floor.

The cylinders are driven by a 10 hp electro-hydraulic motor and pump that also operate the other hydraulic systems in the parlor. The floor added about \$10,000 (Canadian) to construction cost of the barn and parlor, Dekker says.

Since the Dekkers put in their moveable floor last fall, Embro Farm Systems has been working on systems for a few other Ontario producers. One has a new scissors lift design that operates on a single cylinder.

At least two other North American com-

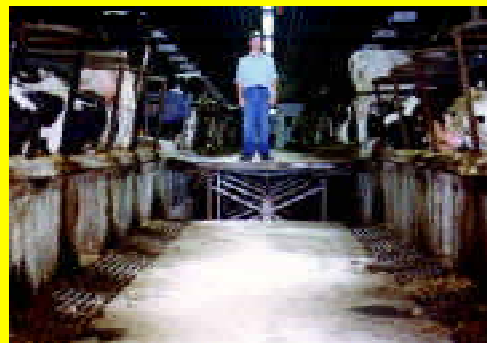


Adjusting floor height to worker height greatly reduces stress on the back, says the company.

panies offer moveable floors as well.

“ComFloor” is offered by Alfa Laval Agri Inc. (11100 N. Congress Avenue, Kansas City, Mo. 64153-1296; ph 816 891-7700; fax 1606). It’s available for tandem, herringbone and parallel parlors and consists of two 5-in. channel iron beams and 4-in. L-iron transverse supports. It adjusts floor height 8 in. with a 1/3 hp pump that operates on vegetable oil instead of conventional hydraulic oil. Sells for about \$9,000 (U.S.) for a double-6 herringbone and \$8,000 (U.S.) for a double-8 parallel.

A third company that makes a system that operates on a single 8 in. dia. air cylinder with 32 in. stroke, a 5 hp twin air compressor, and cable and pulleys. Capital Dairy Systems (R.R. 1, Woodstock, Ontario, Canada N4S 7V6; ph 519 456-5299) has installed one system in a double-12 and another in a double-14 parlor, and they allow for adjustments of from 12 to 18 in. It can be installed in new parlors or as a retrofit for \$7,000 to \$10,000 (Canadian).



After 17 Years, He’s Happy With His “Drop Down” Floor

Seventeen years ago, we reported on a “drop down” floor designed and built by dairy farmer Merle Schwartau that allowed him to turn his tie stall barn into a milking parlor with the flip of a switch (Vol. 3, No. 6).

Schwartau’s 240-ft. long barn alley lowers 28 in. at milking time in about 3 minutes. As the floor drops down, it opens a series of Milker’s Nooks between stalls for easy access.

“We’re very satisfied with it,” Schwartau, Red Wing, Minn., recently told FARM SHOW. “The only work we’ve done on it involved routine maintenance, which is typically not too expensive.

“For example, hydraulic hoses need to be replaced about every five years, which

costs \$1,000 or \$2,000. Likewise, main hydraulic supply pipes have been replaced with hoses. Also, pins that the floor hinges on have been replaced with stainless steel because the originals were rusting.

“The biggest expense so far has been replacement of the sheet steel floor, a process we started in 1995, also because of rust. That’ll end up costing about \$5,000.”

The barn, which was built with the help of Agromatic Equipment, Fond du Lac, Wis., and Voth and Larsen Industries, a local construction firm, cost \$400 per stall, or close to \$40,000.

Contact: FARM SHOW Followup, Merle Schwartau, 29232 Cty. 53 Blvd., Red Wing, Minn. 55066 (ph 612 388-2010).