Hay Drier Uses Vacuum To Dry

"We pull hot air down through bales rather than trying to push it through like other hay driers. It works better at about half the cost," says Fritz Trauttmansdorff about his first-of-its-kind bale drier.

Trauttmansdorff works for Ontario's Dunlea Farms Ltd., a supplier of hay for the Canadian and U.S. horse markets. "Last year we put half our production - 40,000 14 by 18 by 38-in. bales - through it. We've found we can consistently dry hay from 25 or 30% moisture down to around 15% in 24 to 36 hours for $6 to $10 per ton, assuming a natural gas cost of 18 cents per 35 cu. ft. and electric at 8 cents per kwh. That's about half of what it costs in LP and electricity with a forced air batch drier."

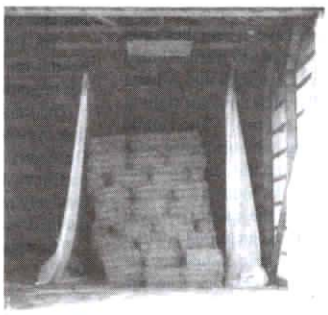
Edwin Arinze, an ag engineer at the University of Saskatchewan, has tested Dunlea Farms' system and was impressed with its performance.

"It provides more uniform air distribution - and therefore more uniform quality - through the hay than is possible with forced air systems," says Arinze.

Key to success of the system, Arinze and Trautmansdorff agree, is the way long poly curtains tightly seal against the haystack once drying begins.

There are two drying bays in a 40 by 64 by 20-ft. high pole barn that houses the system. A 37-ft. long by 60-in. wide plenum, with a pair of hinged 42-in. wings, mounts in the roof of the building. Once the bales are in place, the wings swing down against the stack - via boat winches and cable - and 20-ft. poly curtains are pulled together to surround the stack.

A 900,000 Btu grain drier burner feeds hot air into the plenum. It's then pulled down through the bales by a 12 1/2 hp fan in a 4 by 4 ft. duct under the floor.



The suction "vacuum packs" curtains tightly around the stacks.

Moist air is exhausted out of the building, while warm air is recaptured with a heat exchange.

Hay temperature and moisture are controlled with readings and testers. Once hay reaches its desired moisture level, it's cooled by moving outside air through it for about two hours.

Hay is moved in and out of the drier 160 bales at a time with a stack mover. Between the two bays, the system is capable of drying 1600 bales, or 40 tons of hay, per day.

The system cost $50,000 to $60,000 (Canadian) for the drier and building and was custom-designed for Dunlea Farms. The operation produces 80,000 bales from 400 to 500 acres of alfalfa/timothy hay a year.

Trauttmansdorff has customized "how to" packages available and he's looking for a manufacturer to produce the system.

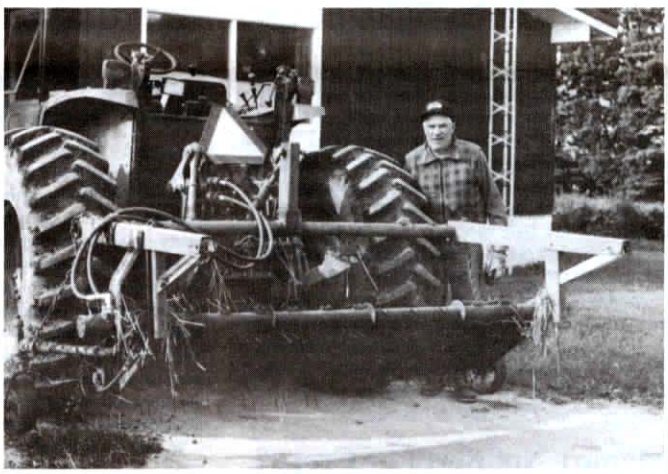
Contact: FARM SHOW Followup, Fritz Trauttmansdorff, Dunlea Farms Ltd., R.R. 1, Jerseyville, Ontario, Canada LOR IRO (ph 519 647-2311; fax 647-3300).

FARM SHOW

"Made It Myself"

Some of the best new products we hear about are "made it myself" innovations born in farmer's workshops. If you've got a new invention or favorite gadget you're proud of, we'd like to hear about it. Send along a photo or two, and a description of what it is and how it works. Is it being manufactured commercially? If so, where can interested farmers buy it? Are you looking for manufacturers, dealers or distributors? (Send to FARM SHOW, Box 1029, Lakeville, Minn. 55044)

Mark Newhall, Editor



3-Pt. Mounted Swath Lifter

Manitoba farmer Ernest Marshall made this 3-pt. mounted swath lifter from an 8-ft. 4-belt John Deere combine pickup.

"We bought the pickup for $25 at an auction. The frame that supports it was originally part of the push-off mechanism off a Farmhand hay sweep. The pickup is driven by an orbit motor that we borrow from a swing auger in the off-season.

"We set the speed of the pickup slightly faster than the tractor speed, which tosses the hay slightly to allow fast dry-down after a rain. The compact design of this swath lifter allows tight and easy turns with little tramping, unlike pull-type swath lifters. And, unlike swath turners which flip the windrow over, we're able to lift a swath several times if necessary with less leaf and protein loss than raking, yet dry- down is just as fast. This was the best $25 we ever spent."

Contact: FARM SHOW Followup, Ernest Marshall, Box 99, Inglis, Manitoba Canada R0J 0X0 (ph 204 564-2569).

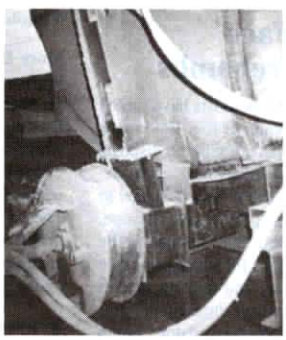
Manure Hauler Built From Milk Truck

The truck that hauls a dairy farm's main product can also be used to haul its main by-product, says Madisonburg, Pa., farmer Glen Miller, who converted a milk tank truck into a durable manure hauler.

"The stainless steel tank will last a lifetime," Miller says. "We empty our 469,000 gal. pit twice a year and probably haul 100 to 110 loads per clean-out. We started using the truck in 1991 and it just works great."

The milk-to-manure conversion came about after Miller installed his big pit in 1990. A local milk hauler had a 1972 Mack truck and 4,000-gal. tank for sale for $4,000. The truck's 237 cu. in. engine had less than 100,000 miles on it.

There were a few repairs to make to the truck. Miller had them done by a local welding shop that also converted the tank to handle manure.



The shop first rebuilt the rusted out cradle underneath the tank, repaired the rusted portions of the frame, and cut off the rear compartment housing the truck's milk hose and pump.

The next step was to install a turret, which extends 2 ft. into the tank's fill port and 1 ft. above it, to keep manure from splashing out.

To spread manure, an 8-in. square "drop" box was mounted on the rear of the truck. A Badger slinger and valve assembly was fitted to the box. The discharge unit operates with a two-spool hydraulic valve mounted on back of the truck cab. Handles extend inside the cab for easy access.

New tires all around and a new paint job completed the conversion. Including truck, the total cost was about $10,000.

Contact: FARM SHOW Followup, Glen Miller, P.O. Box 124, Madisonburg, Pa. 16852 (ph 814 349-8286).