

“Vacuum Aeration” Fan Pulls Air Down Through Bins

“I’ve been using this idea for more than 20 years in my own bins,” says farmer-inventor Norval Semchenko, Max, N. Dak., about his vacuum aeration fan system for grain bins that pulls air down through stored grain rather than pushing the air up.

Here, according to Semchenko, is the problem with conventional “pressure” aeration. “Moisture often condenses on the roof and drips back onto the grain. You can add larger vents but that costs money and lets in snow and rain. Also, every grain bin leaks air somewhere, but it’s difficult to seal the bin when you’re pressurizing it from the inside. When you’re creating a vacuum by pulling air down through a bin, it’s much easier to seal up any leaks.”

Another advantage of vacuum aeration is that it pulls down drier air from up above the bin. “Often air at ground level has higher moisture content, whether from morning dew or from the wet ground,” he notes.

One thing Semchenko has always liked about his vacuum aeration system is that he can “feel” the air coming out of the bin when he stands by the aeration fan. “I’ve gotten so I can tell when the grain is dry just by the moisture content of the exhaust, but you can also buy an inexpensive humidity indicator and use an equilibrium moisture chart to figure out the moisture content of the grain without the need for a probe,” he says.

Semchenko’s specially-designed 18-in. dia. fan is powered by a custom-built Baldor 4-hp electric motor. The fan housing creates a venturi action by narrowing down from 18 in. to 15 in. as air is drawn from the bin, smoothing out the air flow to the fan blade tips. “If you just took a regular fan and reserved it, you’d get a lot of turbulence at the fan, reducing efficiency. Our design eliminates that problem.”

The vacuum aeration fan simply mounts in place of existing fans with no need for

modification of the bin. Adaptor rings are available, if needed, to match up to larger size openings.

“It’s ideal for 18-ft. dia. bins up to 5,000 bu. but I think it will work on larger bins. We’re still testing with larger bins,” says Semchenko.

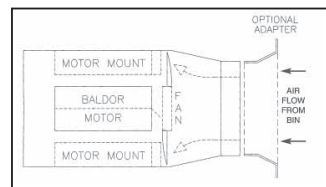
He says there used to be a manufacturer in Kansas who made a vacuum aeration fan using a 1 1/2 hp motor and many farmers in his area owned them. But that company went out of business in the early 1990’s and, as far as Semchenko knows, there’s nothing else like them on the market today.

Semchenko is putting his aeration fan on the market for the first time this year for \$700. The adaptor ring, if needed, sells for \$50.

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An 18-in. dia. fan mounts in place of existing fan. It pulls down air from the top of bin using a 4 hp electric motor.



Stray Voltage No Match For “Ertlizer”

After losing 8 to 10 cows a year from what he believed was stray voltage, Scott Ertl figured out a solution. Now the dairyman is marketing his knowledge along with a device he calls the “Ertlizer”.

“I ran into a guy who showed me how to dowse for electrical currents,” says Ertl. “He walked through my barn and told me I had two choices - sell the farm, or sell out the cows and crop farm.”

Ertl didn’t like either option but it confirmed that it was stray voltage that was causing his trouble. His first step was to walk the farm and separate any piece of conductive metal from soil contact. It helped, but didn’t eliminate the problem.

Ertl says the idea for the Ertlizer simply occurred to him. It gathers stray voltage and focuses it away from the area where it is placed. Ironically, it uses 110-volt current in the process. The stray voltage is then directed away from the barn by a conducting rod buried beneath the unit.

While it may sound hard to believe, it worked. Ertl says his cows stopped dying, their mastitis cleared up and immune prob-

lems went away. Cows that had not come into heat for months suddenly came into heat. This was after having tried everything else he could think of, including rewiring the barn.

Now Ertl is helping other farmers identify the stray voltage paths in their barns. Through word of mouth, he has sold more than 155 Ertlizers in the past 11 months. He offers it with a money back guarantee for \$700. Buyers can use it for 90 days and, after waiting 30 days, get their money back if not satisfied. For \$500 they own it outright. Part of the package includes having Ertl dowse the problem barn and yard.

“I can walk through a barn and mark on the floor where the current is coming through the floor,” says Ertl. “When I ask the farmer which cows are having trouble, 9 out of 10 times they are the ones where I marked.”

One of the first effects he saw after installing his Ertlizer was a jump in somatic cell count (a milk quality measure which, when it goes up, is usually a sign of infection). He has since seen the same thing happen on other farms where his unit has been installed. “It may jump to 700,000 to 800,000 for a few

days and then drop back down,” says Ertl.

He believes that once the impaired immune system kicks back in, it cleans out the system. He notes that in his own herd, when mastitis does show up, he can successfully clear it up. Previously the same treatments simply didn’t work.

Ertl is convinced that some cows, like some people, are sensitive to the very low level voltage. He says electrical fields surround us, and current is constantly being fed into the earth by grounding wires. As he says, it has to go somewhere.

He notes that he is very sensitive while his wife is not sensitive at all. His youngest children always had trouble sleeping in their beds. He dowsed their room and identified a current flow that went through the beds. Once he installed an Ertlizer unit near the house, the current went away and the children’s sleeping problems did as well.

One experiment he likes to try in a dairy barn where a farmer is having problems with his cows is to turn on the barn cleaner.

“Any motor that sits horizontal with the ground will send out electromagnetic fields



Ertlizer uses 110-volt current to gather stray voltage. A conducting rod buried beneath the unit focuses it away from the area where the unit is placed.

perpendicular to the motor shaft,” he says. “Watch the cows, and if they are affected, they will stand up.”

Ertl recommends such motors be wrapped in standard blue electrical tape, which seems to confine the field to the motor.

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Old 190 AC cab fit Klosterman’s Massey 1240 tractor. He spent about \$350 on the conversion.

Allis Chalmers Cab Fits Massey

After finding an old 190 Allis Chalmers’s Full-Vision cab, Ivan Klosterman, Bonduel, Wis. decided to buy it - but not for an Allis Chalmers tractor. He put it on his Massey Ferguson 1240 tractor.

He made brackets, filled the spaces between the fenders and the cab, and removed the lower right hand window. Klosterman put the loader controls through the space.

He cleaned the cab up and painted it to match his tractor.

Because the roll bar was too tall to connect to the cab, he took it off.

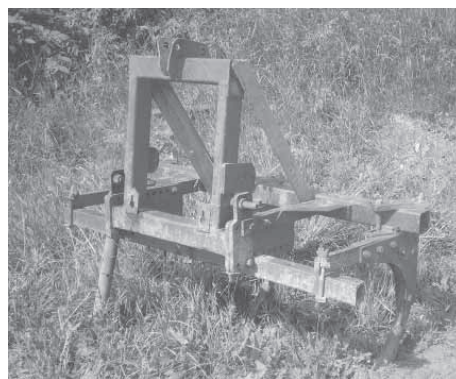
“It’s roomy and visibility is great,” he says.

Including paint, Klosterman says he spent about \$350 on the project.

“If you’re going to do something like this, just take a few measurements beforehand. You’ll save a lot of time later.”

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Mervyn Leifso and son Robin turned an old 6-ft. wide International trip beam plow into a subsoiler that rips down to 14 in. deep. They spent about \$100 on the project.



Subsoiler Made From Trip Beam Plow

“We’ve used our home-built subsoiler for about three years now with good results,” says Mervyn Leifso of Elmwood, Ont.

He and his son Robin made the 3-pt. hitch implement from an old International trip beam plow. They pull it with a 100 hp tractor. The unit rips and mixes the subsoil 10 to 14-in. deep with its three shanks, and Leifso points out that a fourth shank is optional.

“The way it’s made, the shanks are moveable so you can just slide them across for whatever spacing you want,” he says. “It’s

about six feet wide. We used the plow’s 4 by 4-in. square tubing and bought only one 6-ft. piece of tubing to do the project. The rest of the materials were on the plow.”

Leifso says their total cost was about \$100, plus one day of labor.

“If you have a lot of compaction from driving over the field when it’s wet, this subsoiler loosens it up and does a good job,” he adds.

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