

Tractor-Mounted Blower Keeps Mower Deck Clear

After burning up 2 rotary mowers and a tractor, Terry Jacob put air power to work keeping mower decks clean. He can blow away residue at the end of the day or whenever it builds up, which is often.

"I maintain roads for 2 townships, and that includes mowing," says Jacob. "Whenever you lift a wing on a mower, the residue dumps onto the main deck. It's a fire hazard if not cleared away. If it gets wet, it crusts up and encourages rust."

Prior to adding the blower, Jacob would clear the residue away with a rake or shovel at the end of the day. That can be too little and too late.

"With one fire, I had a buildup of residue when some wire wrapped around the clutch and it slipped for a bit," recalls Jacob. "It didn't take long until it got hot enough for a fire to start. When you're in a remote area, you can't always get to water."

Jacob picked up a blower at an auction for about \$100, complete with a 6-in. hose. Originally, the hydraulic-powered fan had been part of a small, dry fertilizer applicator.

He mounts it to the expanded metal protective screen on back of his tractor and plugs it into a hydraulic outlet. The in-cab control lets him engage the fan and control the speed that controls the volume of air.

Jacob estimates the fan puts out the equivalent of an 80 to 90 mph wind. The entire apparatus attaches and detaches with only 2 bolts, whether the screen is in the upright or lowered position. He suggests



Terry Jacob keeps his big mower decks clean with this hydraulic-operated fan and 6-in. hose mounted on back of his tractor.

the fan would be just as useful cleaning off combines and other farm equipment, as well as the tractor to which it is mounted.

"I'm planning to build a rack that holds the hose better," he says. "For now, I set the speed in the cab, get off the tractor and use the hose to direct the air. It only takes a few minutes to clear the deck, roll the hose back up, shut off the fan, and get on about business."

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Pre-cooler was designed to mount against the ceiling, cooling milk down to 47 degrees.

He Built His Own Milk "Pre-cooler"

When one of two bottom cooling units in James Martin's 3,500-gal. milk cooler failed, he bought a commercial pre-cooler, but it couldn't keep up to the milk flow. Fixing the cooler would have required extensive repairs. That wasn't possible when cows are being milked twice a day. So Martin designed and fabricated a unit to chill milk to 47 degrees before it entered the big cooler.

"I couldn't get refrigeration guys to build a pre-cooler for me, so I did it myself," says Martin. "I used 1 5/8-in. stainless steel tubing inside 2-in. copper and introduced compressed Freon between the 2 tubes.

"I figure I used 127 ft. of stainless steel," says Martin. "I invested about \$3,000 in it, which was worth it because it kept my milk qualifying for the Grade A premium."

Martin set the system up so the compressor would kick in after the milk pump did. Martin had to experiment with expansion valves for the Freon to get the right cooling rate. If the milk got too cold, it would freeze. He put a

thermosensor in the exiting milk to shut down the compressor if the temperature dropped too much. Otherwise, it shut down when the milk pump stopped.

"I used it for about 10 years before I quit dairying," says Martin. "It only froze up about 10 times in all those years. We milked for about 15 hours a day in 2 shifts and could put milk in the tank at 47 degrees in the summer."

Cleaning the system was easy, he adds. When the milk shift ended, about 10 gal. of milk would remain in the pre-cooler. It would be drained and fed to dairy calves. The same wash cycle that cleaned the dairy's pipeline milking system cleaned the pre-cooler.

"I was careful to use components from a dairy supply store," says Martin. "I talked to my federal dairy inspector first and never cut any corners."

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Hydroponic 12 by 20-ft. greenhouse is covered with heavy plastic. Sloping south roof maximizes sun warmth.

They Built Their Own Hydroponic Greenhouse

Jordan Gogerty and Danny Richters built their hydroponic greenhouse on the cheap using salvaged materials.

"We gained a wealth of experience in what works and what doesn't without taking a big financial risk," says Gogerty. "We started more than 1,000 tomato seedlings and 800 peppers in the greenhouse last April. Danny transplanted them to the field and started picking ripe tomatoes by July 4th."

The 12 by 20-ft. structure has a base of salvaged 2 by 4-in. bridge deck planks and is covered with heavy plastic. The sloping south roof maximizes sun warmth, while an upper section to the north vents excess heat in the summer. In the winter, it provides sunlight to the rear of the greenhouse.

Seedlings were started in a variety of containers from pint size to 5-gal. buckets. Most containers were filled with rock wool; however, Gogerty and Richters also experimented with mulch as a planting medium. Gogerty started basil in small pint containers before transplanting. He also started and maintained tomatoes and romaine lettuce hydroponically in the greenhouse for family use throughout the spring and summer. Meanwhile, Richters developed a commercial market for his produce.

"He had 800 tomato plants survive in the field. He sells bulk to local restaurants and supermarkets," says Gogerty. "He also sells buckets of canner tomatoes to individuals."

Larger containers such as buckets were connected in series with pvc pipes. All plants in the hydroponic system receive nutrient-rich solutions.

Gogerty suggests that the low-cost greenhouse will likely undergo changes as "proof of concept" is verified. Their goal is to



Gogerty and Richters started more than 1,000 tomato seedlings and 800 peppers in the greenhouse last April.

keep costs down while developing productive methods that work.

"We may build a bigger one," says Gogerty. "We have a pit under our current greenhouse. We are considering filling it with water as a heat sink."

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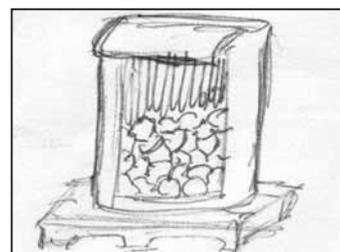
Fuel Oil Tank Storage Bins

"My husband got a free 275-gal. fuel oil tank and came up with the idea of cutting an opening in front of it to store firewood," says Gloria Murray, Dennysville, Maine.

"He cut an opening 26 in. wide and 55 in. long and used the cut-off piece as a protective awning that extends out over the front of the tank. The tanks sit on pallets to minimize rust. You'd be surprised how much chopped wood these tanks can hold.

"The first one worked so well he bought a couple more. People were happy to get rid of them.

"He uses one of the tanks to hold gas cans for our mowers and chainsaw, attaching a door to the front made out of the cut-off section."



Large opening cut into 275-gal. fuel oil tank is used to store firewood. Cut-off piece serves as a protective awning.

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