

Paddle Wheel Speeds Sprout Production

By Jim Ruen, Contributing Editor

Raising sprout-type fodder for livestock is a lot easier and more productive with this new fodder wheel that improves on the Australian stacked tray system. Inventor Roland Poirier offers a turnkey system built for easy maintenance and long life.

"The fodder wheel takes less labor and uses 1/5th the water of a flat tray system," says Poirier. "While every growing panel in a flat system requires its own hose and nozzle, ours has only two nozzles for 96 panels."

The fodder wheel takes up an average of just 12 ft. by 16 ft. and the flats are always at waist height for loading and unloading. The entire unit revolves only once in 30 min. and then stops in place for 2 hrs. before rotating again. As panels rotate past the nozzles, they are sprayed with nutrients and water.

The fodder wheel holds 96 separate 34 by 24-in. sections, each producing 50 lbs. of sprouts. All the parts are off the shelf and designed to last 20 to 25 years.

"The heavy-duty bearings should last 30 years in this use," says Poirier. "The platforms are made from plastic deck boards with a 50-year warranty, which is important

in a high humidity situation like this."

Poirier says the fodder wheel system, as it is now set up, produces 16 flats (800 lbs.) of sprout fodder per day or 96 flats every six days. He has customers who are installing multiple units for larger herds. He says it can easily be downsized for smaller producers.

"A fodder wheel with all the bells and whistles, including an iPad with an application for virtual consulting, is priced at \$23,300," says Poirier. "In full production, it will replace 30 acres of productive ground, and that includes everything grown above ground and the root system, too."

Though the fodder wheel was designed for dairy herd use, Poirier says other livestock producers are showing interest. A trial with egg layers found four-day-old sprouts to be ideal for chickens.

"The hens went nuts," says Poirier. "They produced eggs for longer periods with harder shells at the end of the production period than on their standard diet. The egg yolk was also more yellow. Sprout fodder resulted in eggs that are everything the consumer wants."

You can see videos of the NutraFX Nutra-



Fodder wheel holds 96 separate 34 by 24-in. sections, each producing 50 lbs. of sprouts that make great livestock feed.

Culture Fodder Wheel at www.farmshow.com.

#1507, Ottawa, Ont. K2B 8E1 Canada (ph 613 721-6053; www.nutra-fix.com/fodder.html) or Nutra-Fix, 11721 State Hwy. 37, Waddington, N.Y. 13694 (ph 802 673-5780).

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Sam McNair's homemade, tow-behind vacuum turns horse manure into a fluffy, dry material that's ready to compost.



"Puckey Sucker", as McNair calls it, uses a heavy-duty Rubbermaid utility cart tub and a 50 cc Husqvarna leaf blower.

"Puckey Sucker" Cleans Up Pastures And More

Sam McNair, Jr. cleans up his pasture with what he calls his Mark 2 Puckey Sucker. The homemade, tow-behind vacuum turns horse manure into a fluffy, dry material that's ready to compost. It also works great on leaves, branches and stones.

"It costs less than \$600 to put together and I haven't found anything it won't pick up," says McNair.

Getting a power unit was the easy part. He picked up a \$250, 50 cc Husqvarna leaf blower that had been returned for warranty work. The tougher part was deciding what to use for a vacuum vessel. He decided to use heavy-duty Rubbermaid utility cart tubs. The tubs were priced right at \$170 each and had the volume and heavy-duty construction needed.

"You can't use something too light, or it will implode under vacuum," explains McNair. "I could have used steel wheelbarrows, but they were too small."

McNair mounted what would be the bottom half of his tank on an angle iron frame with its handles forward. Heavy-duty wheels and axle salvaged from an old Sears riding lawn mower were mounted underneath the frame with a hitch for towing and a latch that allows the tub to tip to the rear. Tube steel bolted

to the tub's rim forms the bottom mating surface.

The second tub, with its handles pointed to the rear, became the top half. McNair bolted angle iron to its rim to create a flange to overlap the tube steel lip of the lower tub.

"The steel rims provide a mating surface, but also serve to reinforce the tank when it's under vacuum pressure," he says.

At the front of the tank, the top tub's angle iron extended forward several inches to hinge with the lower tub.

Weatherstripping on the overlapping flange and caulk on both rims helps ensure a near airtight seal.

"The commercial vacuum carts I looked at were double walled to handle the pressure," says McNair. "I didn't want to seal it too tight. I drilled a couple holes in the tank and covered them with a sliding tab so I can adjust the vacuum pressure."

To get vacuum pressure McNair cut a hole on top half of the tub and bolted the leaf blower's intake to it. A second and larger hole was also cut in the top tub.

"The opening is about 16 in. by 24 in. and covered with double layer nylon screen framed with 2 by 2-in. wood. You need enough surface area to ensure that the

velocity of the air flow slows so material drops into the tank."

McNair adds that he had to experiment to get the "right" sized opening. The first one plugged up the surface screen. With his current design, not even light hay is a problem.

"Any entrained dust particles small enough to come through the screen continue through the blower fan and exhaust without a problem," he says. "The screen is loose enough that when the vacuum pressure shuts off, it flexes and releases any material caught against it."

McNair cut 3 more holes in the top tub, one in the wheel housing and 2 in the debris capture area of the tank, one in front and one in the rear. A piece of stove pipe with a cap inserted in the housing hole lets McNair clean out any debris that finds its way past the screen.

He inserted a piece of plastic pipe into the hole on the front of the tank. The external stub serves to mount the vacuum hose. Sections of pvc pipe at the end of the hose are used to suck up manure and debris. McNair has fabricated a number of hose ends similar to those that come with shop vacs. They include a one-handed pipe wand for use from the ATV

driver's seat and a two-handed sweeper for use on hard surfaces.

"I cut serrations in the end of the wand to ensure air flow when it's pressed to the ground," says McNair. "You need air flow to keep material in the tube moving."

A piece of clear plastic mounted over the hole in the rear of the tub provides a viewing port to check the amount of material collected. A short rake in a holder on the side of the lower tub is handy for cleaning out material when dumping. Gas springs attached between the two tubs hold them open when the bottom tub latch is released and they are tipped to the rear.

One problem McNair ran into was overheating of the blower motor. To get more airflow, he built a small motor shroud out of sheet metal. Using a short piece of flexible hose and a right angle elbow inserted into the blower's discharge, he redirected air under the shroud.

"Except for welding the frame and running gear, everything else can be done with a sawzall and a drill," says McNair.

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