

# Air-Powered Australian Water Pump Works

FARM SHOW subscriber Steve Travis of Newport, Ore., wrote us recently about a clever water pump that he says works great and costs thousands less than an electric well pump. Travis says his Brumby Submersible Pump, which runs only on air pressure, also puts air bubbles in the water to improve drinking quality.

We checked into his recommendation, contacting the Brumby company in Toodyay, Australia. Owner Tom Kress, who started the business 25 years ago, says some of the first pumps he sold are still operating today. "They've only got two moving parts, which are floating ball valves that don't corrode, so there really isn't anything to go wrong with them," Kress says. Brumby pumps are popular throughout Australia and are also used in Europe, Mexico and Africa. The company has sold pumps in the U.S. direct to customers and would welcome a U.S. distributor.

Kress says the Brumby can be used to pump water, corrosive chemicals, and even gritty fluids. The Brumby works in a well, a bore or a sump. "It's a simple, cost effective and tough alternative to conventional electric pumps," Kress says.

A Brumby, unlike conventional pumps, doesn't corrode, seize or burn out. That's because it's made of tough, non-metallic and non-corroding materials that don't interact with the liquid being pumped. "We've had customers tell us their pumps haven't been damaged pumping sand or grit, even when they've run dry," Kress says. "Gritty materials and high or low pH water, even chemicals, don't affect the workability of the pump."

A Brumby is ideal for rural or urban use where the water supply is a long distance from a power supply and when a pump is needed to lift water to a tank or reservoir. It can even be used to aerate ponds or fish

tanks. A Brumby runs on compressed air that can be supplied by a small engine or battery-powered compressor. The Brumby submersible pump is easy to install and can be relocated to different sites by just pulling it out by hand and moving it to a different location. No support cables are required because the pump connects to and hangs on the end of poly tubing, which is inexpensive and readily available.

Brumby submersible pumps are cylinder shaped, about 3 ft. long and weigh less than 10 lbs. Three different sizes are available to suit flow capacity and vertical lift capacity needs. The S1 model is for wells under 100 ft. deep. The S2 has two valves and can be used with a controller to deliver 150 gal. per hour. A larger L2 model is 7 1/2 ft. long and is designed for larger casings. Any of the pumps can be teamed with a 12V controller package for around \$850 or an electric controller for \$900. Pump prices range from



**Australian-made Brumby water pump can be used to pump water, corrosive chemicals, and even gritty fluids. It works in a well, a bore or a sump.**

\$700 to \$900. One person can easily install a Brumby without special tools. There's no metal piping or electrical cables needed.

Contact: FARM SHOW Followup, Tom Kress, Brumby Submersible Pumps, P.O. Box 247, Toodyay 6566 Western Australia (ph 61 0 8 9574 4525; www.brumbypumps.com).

## Walk-Behind "Wonder Plow" Also Plants, Fertilizes

"Our new self-propelled Wonder Plow is a multipurpose garden tool that you can use as a plow, cultivator, seeder, or fertilizer unit, eliminating the need to buy separate machines," says Don Cotton, TurfPride LLC, Andalusia, Ala.

The walk-behind machine is self-propelled by a Honda GX-160 engine with 6:1 reduction. The engine belt and chain-drives an 18-in. high, 9 1/2-in. wide lugged rubber wheel. The rig has a 1/4-in. thick main frame, and the basic unit comes with a single plow that's used to make furrows. The machine can also be equipped with a toolbar and gauge wheels on front that lets you clamp on various attachments, including single or

double cultivator sweeps; an Earthway push-type seeder that furrows, plants, and covers the seed all in one pass; and an Earthway fertilizer unit for dropping granular fertilizer next to the row.

"It's the perfect tool for large gardens or nurseries that are too big for hand hoeing but not big enough for a tractor," says Cotton. "We basically took the handlebars off the Earthway seeder and mounted it on the toolbar. The planter comes with interchangeable seed plates for different crops. An easy-to-set depth gauge wheel keeps you from planting too deep so the entire crop emerges at the same time."

The basic Wonder Plow equipped with a



**You can use the self-propelled Wonder Plow as a plow, cultivator, seeder, or fertilizer unit, eliminating the need to buy separate machines.**

single plow sells for \$1,095. A kit containing the toolbar, gauge wheels, and 2 sweeps sells for \$200. The Earthway seeder sells for \$99.95, and the fertilizer hopper for \$75.



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## Chicken Mash Made With Wind Power

Why buy chicken mash if you can make it yourself with homemade equipment, food scraps and alfalfa hay? Jeff Hoard, an off-grid inventor, makes his mash with equipment made from his salvage pile and some of it powered by the wind.

"I grind alfalfa with my wind-powered grinder and add flour from grain we grow, eggshells, coffee grounds and a little purchased vitamins and electrolytes," says Hoard. "I mix it up good with my barrel tumbler and squirt in a little used vegetable oil to bind it. The smell drives the chickens crazy!"

The wind-powered alfalfa mill consists of a fan blade made from a barrel top cut into sections and bent into vane shapes. Sheet metal extensions bolt to the vanes to gather more wind. A center shaft on the fan blades drives a 30:1 right angle worm-drive gearbox that drives a vertical shaft to the alfalfa mill. A tail attached to the gearbox keeps the fan pointed into the wind. To help keep the fan and tail aligned in high winds, Hoard anchors it to an upright pole mounted in an old wheel.

The shaft runs through a cross frame fixed to the top of a 50-gal. drum with holes cut in its bottom. Two 1/4-in. by 1-in. steel wiper blades are fixed to the end of the shaft resting on the bottom of the drum.

The drum rests on tabs fixed to the inside of the end of a slightly larger "hopper" barrel half that rests on a shipping pallet. Aluminum straps secure the barrel to the hopper with chains securing it to the pallet.

"Hay dropped into the barrel gets ground through the holes by the wiper blades when the wind blows," explains Hoard. "When the

hopper is full, we simply swap it out with a second hopper."

Eggshells and a mix of grain are run through an old flour mill. Hoard replaced the hand crank drive with a pulley and mounted it with an old Briggs and Stratton engine to a sheet of plywood.

Ground alfalfa, flour, eggshells and other ingredients are mixed together in Hoard's tumbler. It's another 55-gal. barrel that is mounted to an old appliance mover. A plastic lid covers one barrel end and rests on two lawn mower wheels attached by struts from the appliance mover. The other end of the barrel is supported by a shaft attached to its end that runs through a pillow block bearing to a hand crank. The bearing is on a vertical pipe that extends from the top end of the appliance mover.

"When we need some chicken mash, we can roll the tumbler into place, lay the appliance mover on the ground and add ingredients," says Hoard. "Two L-shaped blades welded to the insides of the tumbler catch the material as the barrel is turned and tumble it together."

Used vegetable oil from a friend's restaurant is strained and poured into a small hand sprayer. Simply setting it in the sun is enough to warm it most days, says Hoard.

"My wife points the sprayer wand through a hole in the tumbler and sprays in enough oil to bind the mash," he says. "It makes a great layer mash."

Hoard shares his "creative scrounging" ideas and projects on his Hillbilly Heaven CD available at his website.

Contact: FARM SHOW Followup,



**Jeff Hoard, an off-grid inventor, makes chicken mash with homemade equipment including this wind-powered alfalfa mill (left) and a modified flour mill.**



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**Ground alfalfa, flour, eggshells and other ingredients are mixed together in homemade tumbler.**

