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Pea Rock Drainage System

Instead of plastic tile, Bernard Belanger used pea rock to drain some of the land on his 55-acre property near Birch Run, Mich.

He uses a pull-type subsoiler to put a 4-in. dia. row of pea rock about 24 in. under the ground. The 2-wheeled subsoiler is equipped with a 55-gal. barrel that feeds rock down through a 1 1/2 in. wide by 6 in. long trough and into a 4-in. dia. "bullet" mounted behind the subsoiler's single shank.

"This system is easier to use and quite a bit cheaper than tile," says Belanger. "A 311-ft. long run uses one yard of pea rock, which costs about \$30. Tile costs about 33 cents per foot or \$103 for the same run."

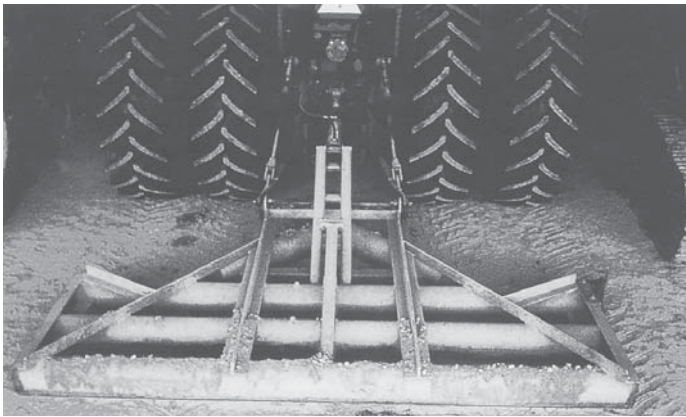
He bought the big subsoiler about 40 years ago and used it for years to break up hardpan. About 10 years ago he replaced the steel wheels with rubber tires. He also added a 3-in. dia. hydraulic cylinder to replace the original rope trip lift system, a sheet metal trough, and welded the barrel on top to put pea rock in.



A 55-gal. barrel feeds rock down through a trough and into a 4-in. dia. "bullet" mounted behind subsoiler's single shank.

Belanger uses a Deere R to pull it. "I used it on a low spot in my yard next to my driveway and it really helped. I also used it on my 150 by 100-ft. garden."

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A top link-mounted hydraulic cylinder is used to change the angle of the entire grader, allowing on-the-go adjustment of depth control.

"Made It Myself" Grader Shapes Up Gravel Roads

"It has 3-pt. depth control which allows on-the-go adjustment," says John Copple, Cedar Vale, Kansas, about the road maintainer he built to shape up driveways and pasture roads.

The 11-ft. wide road maintainer is 6 ft. wide with a V-shaped nose on front. Three 8-in. dia., heavy wall pipes are spaced 2 ft. apart. A top link-mounted hydraulic cylinder is used to change the angle of the entire grader. Retracting the cylinder pulls up the back of the grader and causes the nose to dig in and move gravel away from the center of the road. Then the pipes smooth out the gravel.

"It works slick because it doesn't jerk up a

lot of big rocks like an ordinary blade does. Instead it just slides over them," says Copple, who built the grader three years ago. "It works great for moving gravel crowns away from the center of the road. By adjusting the hydraulic cylinder I can make the nose dig in as deep as I want. I don't have to move the cylinder very much to change the angle of the nose. I spent about \$1,000 on materials."

Copple says he's looking for a manufacturer.

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Livestock Odor Fighter

You can take the odor and more out of poultry and livestock barns with a Clean Air Plant (CAP) from VentilationUSA. Using a technique called biological oxidation instead of replaceable filters, the CAP units capture and destroy gasses, volatile organic compounds and odors, as well as remove particulates from the air. All that is released is clean air, carbon dioxide and water.

"We have found that reducing ammonia in the air saves energy and improves animal growth," says Richard Egan, VentilationUSA. "If livestock producers can reduce the ammonia level without using fans to exhaust it, they will reduce costs, especially in cold weather."

Egan says CAP technology has been used successfully in printing plants and ink manufacturing to reduce pure ammonia levels by 90 percent. He is now applying that technology to agriculture with enzymes selected to work with ammonia.

A fan at the top of the unit pulls pollutants through water and enzymes in the base. Gases and organic particulates are consumed in the oxidation process. Even molds, fungal spores, viruses and bacteria are destroyed by the enzymes.

A small submersible pump recirculates the enzyme and water solution over a cartridge where heavy metals and non-organic particles are adsorbed.

A CAP 600 is 30-in. dia. at the top and narrows down to 26 in. at the base. It's 48-in. tall and is designed to control pollutants in areas up to 5,000 sq. ft. It's equivalent to a venting flow rate of 1,000 cubic feet per minute, yet only releases CO₂ and water. The \$8,000 unit can consume and destroy up to 60 lbs. of pollutants per day.

"Every situation is different, and the



A fan inside the free-standing unit pulls air pollutants down through water and enzymes in the base. Can be used in any livestock barn.

number and size of units needed depends on the concentration of animals," explains Egan. "Moisture can also be a factor. In a swine environment, you might need to use an air exchange system to reduce moisture and then use a CAP to reduce ammonia and other pollutants."

Egan says the units will pay for themselves in improved animal health, more efficient growth and a better work environment with reduced complaints from neighbors.

Contact: FARM SHOW Followup, VentilationUSA LLC, P.O. Box 4360, Manchester, N. H. 03108 (ph 603 622-1791 or 800 622-8078; info@ventusa.com; www.ventusa.com).



Castor wheel under front end follows garden terrain. Shroud can be removed quickly by pulling two bolts.

Late Season Rototilling

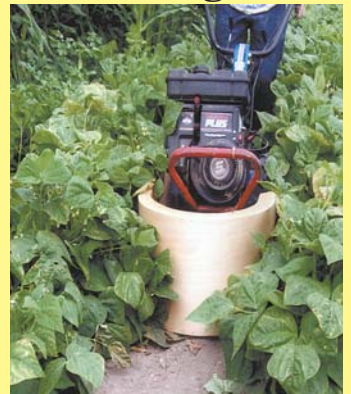
"I'm a cabinet maker so I used wood to make this shroud for my roto tiller to work through late season crops," says Jesse Longenecker, Rossville, Ind. "I only till deep enough to break the crust and take out small weeds."

"The front curve is made from 3 pieces of 1/8-in. birch, bent to shape. The straight sides are 1/2-in. plywood. I sprayed finish on it to make it hold up to moisture and so it would more easily slide through foliage."

"The most important detail is that the shroud has a swivel castor under the front curved nose. It holds the shroud up 2 in. above the ground. If the ground is soft, it will settle down lower to the ground or even slide on the ground with no problem."

"The back end of the shroud attaches loosely with two 5/16-in. bolts to the back tiller guard. This allows the tiller to pivot up and down and the front of the shroud to stay close to the ground. I had to cut away some wood on the right side by the exhaust for when I lift up the back of the tiller at the end of the garden."

"I leave the 5/16-in. bolts bolted to the



Shroud lets Longenecker till garden without damaging full-grown plants.

shroud and use 5/16-in. thumb nuts inside the tiller guard to hold it on. It only takes a minute to put the shroud on or off."

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