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## European-Style Scythes

Most Americans have abandoned scythes in favor of power mowing equipment, even when it comes to cutting weeds around buildings and fences.

But if you've grown weary of the whine of string trimmers, maybe you're ready to try a scythe.

If you've used a scythe in the past and disliked the experience, you were probably using the wrong kind of scythe.

The European-style scythe works so well you may want to park your lawn mower and use one to cut the lawn. The bush style of scythe may be used to trim undergrowth in your woodlot and the ditch style may be used for brambles and tough weeds.

Most scythes sold in America are heavy and poorly balanced. Not only that, but the angle at which the blade mounts on the handle (called a snath) tends to require that the worker bend over to cut with it.

On the other hand, European-style scythes are lightweight and well balanced. The blade and handle are positioned to allow a comfortable upright stance.

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**Reader Inquiry No. 39**

## Road-Hardening Solution Turns Gravel Into Solid Surface

North Dakota ranchers, farmers and township road supervisors have started using a new enzyme – based road treatment to harden up gravel roads. Molasses based, fermented Permazyme from Pacific Enzymes turns compacted earth hard like shale in hours. What's more, it even works in ponds to seal up leaks and to eliminate vegetation.

"It sounds like snake oil, which is what I called it before I tried it," says Bob Johnson, Pacific Enzymes. "Even with all the engineering tests that have been done on the product, it sounds too good to be true. I put it on a road in 1998. When I checked it three years later, I was amazed at how hard it still was."

At the time, Johnson was a county roads superintendent in California. Today, he demonstrates the product and trains users.

Permazyme was developed after a farm family noticed that the hog feed they were using would compact the ground around the feeder. Since then, it has been marketed in California and surrounding states for nearly 40 years. It was only recently introduced into the upper Midwest.

"We treated a section of road last year, and even after being under water this spring, it's still hard as a rock," says Maureen Clemons, sales representative for North Dakota and Montana. "After 6 months, you will be hard pressed to drive a screwdriver through treated dirt."

Very little product is needed to harden the soil. Johnson warns against anything less than a 500:1 ratio of water to Permazyme. Depending on soil types and climate, the ratio can be as high as 3,000:1.

How much to apply and how deep it needs to be mixed in again depends on soil type, climate and use. One gal. of Permazyme in solution treats about 150 cu. yds. of soil.

Packing is key, adds Johnson. However, once packed and allowed to set for a few days, the ground becomes hard. Johnson warns that the treatment should be considered permanent.

"If you try to grade a surface that has been hardened properly, you'll see sparks fly," says Johnson. "However, it's easy to reactivate the enzyme to make the soil pliable down an inch or two. It requires as little as a pint per 1,000 gal. of water sprayed on the surface."

He recommends reactivation as a way to coat the hardened surface with gravel or other material. Once reactivated, the surface can be worked over for a day or so,

before it hardens again.

"Spread a thin layer of gravel over a reactivated surface and roll it to bind it with the soil," suggests Johnson. "You'll have a surface that looks like it has a foot of gravel on it."

Another effective use of the product is to seal ponds. Johnson says he waded into a pond a year ago that had been treated in 1970, and the bottom is still rock solid, though now covered with a couple inches of organic material.

Johnson advises treating a pond before filling it to get a good seal around the upper sides. However, an existing pond can be treated. Simply stir up the pond, pour the Permazyme into the pond and wait for it to settle.

"As it reacts to the particles and they settle out, the weight of the water compacts it," says Johnson. "It won't bother fish at all, though it will get so hard that plants can't grow through it."

Permazyme is only available directly from the company or through an approved distributor. While the application process is simple, a mistake can cause failure. The company requires users be trained in proper application.

"Farm equipment is all that is needed to prepare the soil and mix the solution," says Johnson. "An industrial roller or packer will do the best job compacting, though we have used a carry-all loaded with dirt."

Johnson is based in California and only recently began marketing the product in the Midwest. On a recent trip to Minnesota and North and South Dakota, he made applications at grain elevator yards, farm equipment yards, livestock silage pits, feedlot bunker areas, livestock auction areas and rural roads.

At \$1,750 per 5 gal., Permazyme isn't cheap. However, seeing is believing. After a recent on-farm presentation for a dozen farmers, each one took home a container to use, says Johnson.

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