

Underground Poly “Troughs” Hold Moisture Under Crops

In the late 1960’s, Alvin Smucker was an enterprising Michigan State University graduate student. He was working with 2 professors on a radical new way to create water barriers in sandy soils. Their concept was to lay thin troughs of asphalt 1 to 2 ft. under the soil surface to hold water for plant roots. The idea appeared to work, but the machine they developed was confiscated in Libya where it was being tested, and the project was dropped.

Dr. Smucker is now a professor of Soil Biophysics at Michigan State and he has resurrected the idea. He’s working with a Canadian company that’s testing a machine that lays heavy duty poly in curved troughs underground rather than asphalt.

“It has the potential to transform barren landscapes into sustainable plant production regions. It could transform lives

and communities,” Smucker says. He has tested and proven the concept in dry areas of Michigan and in West Texas, where cotton yields were bumped an amazing 500 percent. “Water retention layers reduce the needed quantity of irrigation and protect portable groundwater supplies from fertilizer and pesticides,” Smucker says.

Per acre installation costs are \$1,400 to \$1,800 and improved yields from vegetable crops could pay that back in 1 to 2 years. Smucker says some yields in Michigan doubled, tripled and even quadrupled after installation. Better yet, “it’s a zero-maintenance system with sustainable water-holding capacities up to 300 years,” he adds.

Smucker is currently testing the concept in blueberries as well as fruit and nut orchards. RWF BRON, the Canadian manufacturer, has patented its new machine and continues



RWF BRON Co. is testing a machine (above left) that lays heavy duty poly in curved troughs underground (above) where plant roots can take advantage of the retained water.

testing in the U.S. and around the world in arid regions.

Contact: FARM SHOW Followup, Dr. Alvin Smucker, Michigan State University

(Smucker@msu.edu). Also, RWF BRON, 873 Devonshire Ave, Woodstock, Ontario, Canada N4S 8Z4 (ph 519 421-0036; www.Bronrwf.com).



McIntire Brass Works sells 4 models of slide poles, ranging from a simple unprotected brass pole to caged models with guards and gates.

They’ve Been Making Fire Poles For 100 Years

“We probably average two inquiries per month about installing McIntyre slide poles in homes or barns, but our primary business is still slide poles for fire stations,” says Arthur Anthony, owner of McIntire Brass Works, Somerville, Mass. “We’ve been making slide poles for more than 100 years and we don’t make anything else.”

The company’s poles have been installed in some upscale homes and also in barns, but most barn installations have been in well-preserved post-and-beam construction barns that were being converted to homes, according to Anthony.

Interestingly, Anthony says, original slide poles back in the late 1880’s were made of hickory wood, but the standard has always been brass or stainless steel. “Brass is considered the most desirable because it is the easiest to slide. We polish our brass like a mirror.”

Brass poles need to be polished at least once a week, Anthony says. That task generally goes to whoever is lowest on the totem pole in terms of longevity, he says. “Kind of like the military, where the lowliest

jobs are given to the private as a way of earning his first stripe.”

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The longest pole ever installed by McIntire was a 54-footer. Asked whether a long pole might be a solution for descending fast from a grain elevator leg, Anthony cautions against the idea. “I don’t recommend it. Fifty four feet is a long way to drop, no matter what kind of shape you’re in.”

Anthony and his wife bought McIntire Brass Works 30 years ago and Anthony continues to show up every day, despite recently celebrating his 75th birthday. “I’m retired, but I still work 40 hrs. per week. The way I’ve always looked at it, when you find something you love to do, it’s really not work.”

Refurbished fire poles can sometimes be had for as little as \$2,000.

Contact: FARM SHOW Followup, Arthur Anthony, McIntire Brass Works, Inc., 14 Horace St., Somerville, Mass. 02143 (ph 617 872-1152; www.slidepole.com).



Harlen Grovom built this 7-ft. wide grapple fork out of cultivator and chisel plow shanks.

Grapple Fork Built From Cultivator, Chisel Shanks

Harlen Grovom of Park River, N. Dak., recently sent photos of a 7-ft. wide grapple fork he built out of cultivator and chisel plow shanks.

“I use it on my Bobcat skid loader to pick up rocks and fallen trees, which I use as firewood for my outdoor woodburning stove. It’s built pretty strong,” says Grovom.

Grovom had previously used cultivator shanks to build a grapple fork that mounted on the bucket of his New Holland skid loader (Vol. 38, No. 2). “My new model works better because dirt falls between the shanks and onto the ground instead of in the loader bucket. I don’t get a load of dirt every time I scoop up something,” he says.

He used 4 by 2 tubing off an old cultivator to build the frame, which supports 2 rows of spring-loaded shanks spaced about 7 in.

apart. The top row of shanks are off a Wilrich cultivator, and the bottom row is off a Deere chisel plow. A 1 1/2-in. dia. steel shaft forms the pivot point, and a pair of hydraulic cylinders opens and closes the grapple.

“I use it a lot. It works great to pick up a whole bunch of firewood together at one time. I spaced the shanks as close together as I could to keep material from falling through,” says Grovom.

“I really like the spring-loaded shanks, because if one hits something hard it’ll bend back without breaking like a welded-on shank might.”

Contact: FARM SHOW Followup, Harlen Grovom, 12643 Hwy. 17, Park River, N. Dak. 58270 (ph 701 331-0169; hlgrovom@polarcomm.com).



He used 4 by 2 tubing off an old cultivator to build the frame, which supports 2 rows of spring-loaded shanks spaced about 7 in. apart.