

# Soil Steamer Helps Grower Control Weeds, Pathogens

After struggling to control a soil fungus called *sclerotinia* that was attacking some of his most profitable crops, Curtis Millsap of Millsap Farms in Springfield, Mo., applied for a SARE grant to obtain a soil steamer to treat the problem (Sustainable Agriculture Research & Education; <https://www.sare.org/Grants>).

Curtis grows organic garden produce for his CSA, which limits methods that can be used to treat diseases and pests. After trying some high cost products to deter the black, node-like fungus that was killing 50 to 70 percent of his lettuce plantings alone, he went looking for other methods and heard about soil steamers.

European producers have used steam treatments to kill soil pathogens and weeds for many years, but the idea is relatively new in the U.S. Curtis located a mid-1970's soil steamer in Vermont, and was awarded a SARE grant to purchase the machine.

The used soil steamer cost \$4,000 (a brand new soil steamer can cost \$20,000 or more). Curtis invested an additional \$1,500 in repairs and parts, and another \$1,000 into hoses and tarps.

To use the soil steamer, the unit is parked next to the growing beds. A diesel burner boils water, then pushes steam at 15 psi into a 2-in. dia. 50-ft. hose, which is used to direct

steam into a planting bed. A steam "soaker hose" further distributes the steam into the entirety of the bed. The bed must be tarped and sealed to hold in the steam.

"You need a pretty decent seal," Curtis says. He uses 6-mil. plastic buried along the edges or sealed with sandbags. As the steamer heats up, the tarp will puff up and a cloud of steam is seen above the bed. Curtis treats the top 2 in. of soil to 180 degrees.

It takes about 2 hrs. to steam-treat a 3-ft. by 100-ft bed – about the same amount of time it takes to set up the system, Curtis says. Each treatment takes 5 to 10 gal. of diesel fuel. He notes that the method gives almost complete weed and pathogen control. He is very pleased with how the soil steamer solved his immediate problem, but is not sure what the long term effects on soil health might be.

To date, Millsap Farms has steam-treated 27,000 square feet of their covered growing space since acquiring the soil steamer in the summer of 2019, and Curtis hopes to move to selective steaming every 2 to 3 years now that the problematic soil fungus is under control.

Contact: FARM SHOW Followup, Millsap Farm, 6593 N Emu Lane, Springfield, Mo. 65803 (ph 417-839-0847, [www.millsapfarms.wordpress.com](http://www.millsapfarms.wordpress.com); Millsap Farm on Facebook and Instagram).



A diesel burner boils water and pushes steam into a 50-ft. hose, which directs it into garden planting bed. Bed is tarped and sealed to hold in the steam.

## Now THAT'S A Barbed Wire Fence

Installing 660 ft. of fencing 'including gates' wouldn't typically draw attention in Midland, Texas. But it stopped traffic in May when Jeremy Hedrick welded strands of 1-in. dia. "wire" with 3-in. long barbs to 4x4 metal posts.

The giant barbed wire is the brainchild of Hedrick and his father-in-law Richard Kalas, owners of The Iron Anvil, a welding and blacksmithing shop in Albuquerque. Hedrick got the idea when a friend attempted to replicate oversized barbed wire for a vendor booth and he decided he could make it even better.

"After scrapping \$2,000 worth of material and hours of work, we finally got it and made a pair of gates," Hedrick says. He credits Kalas for his skills that helped them make jigs, dyes and a machine powerful enough to twist two pieces of 1-in. mild steel pipes to create 10-ft. lengths of wire.

Images of the first gates went viral and people called from all over the U.S. and overseas.

"We went into production, building gates and shipping them all over the country. Now they want us to come out and put it up," Hedrick says, citing an upcoming order for a customer who lives near a couple of popular country western singers.

While a variety of customers including doctors, lawyers and ranchers order gates, bridges, coffee tables and other customized items, The Iron Anvil also sells 10-ft. lengths of giant wire to DIYers and artists. Some bend the steel into gentle arches for headboards. Others make headache racks or brush guards for their trucks.

Cost for 10-ft. lengths starts at \$220/each (plus shipping) with discounted prices for larger quantities.

The steel is made in California and is not coated. Most customers want a rust finish, Hedrick says, and a few paint their gates.

Though the barbed wire is currently a hot seller, all of The Iron Anvil's creations are made from scratch with creative and off-the-wall designs.

That sets them apart, Hedrick says, and currently the business has a 4-month waiting list for custom orders, though there are usually barbed wire lengths available for sale.



To make his popular barbed wire gates, Hedrick welds strands of 1-in. dia. "wire" with 3-in. long barbs to 4 by 4 metal posts.

Check out the business' website and Facebook page for videos and photos.

Contact: FARM SHOW Followup, Iron Anvil, 6345 2nd St. NW, Albuquerque, N.M. 87107 (ph 505 974-9990; [www.theironanvilnm.com](http://www.theironanvilnm.com); [Jeremy.Hedrick@me.com](mailto:Jeremy.Hedrick@me.com); Facebook: The Iron Anvil; Instagram: @the\_iron\_anvil).



Pto-driven BCS Reaper Binder makes bundles of wheat and barley that can later be run through a plot thresher.

## Small Field Reaper Binder

The new BCS MLP 140 SDZ Reaper Binder is ideal for small fields of wheat and barley. The pto-powered, 3-pt. mounted machine requires only 18 hp. to harvest just under 2 acres per hour.

"I have imported several of them," says Eugene Canales, Ferrari Tractor CIE. "My customers use them to harvest wheat at the dough stage, which is a little less than ripe."

Canales notes that many of those same customers run the bundles through a Cicoria plot thresher (Vol. 42, No. 6). "Most of them have from 2 to 10 acres. They're willing to substitute some labor to avoid having to use a combine," he says.

The 140 SDZ has a working width of 55

in. It is about 6 1/2 ft. wide and a little over 10 ft. long. Overall height is 3 ft., 7 in. and it weighs just under 750 lbs.

The recommended maximum harvesting height for grain is 5 ft., 6 in. The company also makes the MLP 140 TC for harvesting higher crops such as sesame, sun hemp, reed, pearl millet and sorghum. It has a maximum harvesting height of almost 8 ft.

The 140 SDZ is priced at \$12,132. The price for the 140 TC is \$12,431. Both prices are FOB Newark, N. J.

Contact: FARM SHOW Followup, Ferrari Tractors CIE, P.O. Box 1045, Gridley, Calif. 95948 (ph 530 846-6401; [sales@ferrari-tractors.com](mailto:sales@ferrari-tractors.com); [www.ferrari-tractors.com](http://www.ferrari-tractors.com)).

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