Spray Tank Pressurized By "Carbon Dioxide"

Gene Boehler came up with a nifty way to spray weeds around his farm yard that eliminates the need to do any hand pumping.

The Farmersville, Ill., farmer mounted a 5-lb. carbon dioxide bottle and pressure regulator on a 2-wheeled steel frame, along with the 3-gal. tank and hand wand off a handheld pump sprayer. He attached the carbon dioxide hose to the tank with an air hose quick connector and mounted an in-line pressure gauge between the regulator and tank. Because the wand's nozzle had plugged frequently in the past, he also installed the filter from an old field sprayer in-line between the tank and wand.

"The carbon dioxide bottle pressurizes the tank constantly. To spray I just squeeze the trigger on the hand wand. It takes some of the drudgery out of hand pumping and also saves time," says Boehler. "I had mounted the tank and hand wand on the cart years ago and added an air chuck to the tank, but I always had to pump the tank out by hand in order to empty it. Then last spring I decided to add the carbon dioxide bottle and regulator and made brackets to hold them. I also replaced the cart's small 8-in. lawn mower tires with 20-in. bicycle tires to make the cart easier to pull.

"I usually adjust the pressure regulator to provide about 20 to 25 psi to the tank. So far there's been only about a 300 to 400 per pound drop in pressure on the carbon dioxide bottle, so I think one bottle will last me all season long. The field sprayer filter really helps. Since last spring I've applied about 20 tanks worth of chemical, but the nozzle hasn't plugged up once," says Boehler.

He spent about $200 for the carbon dioxide bottle and pressure regulator, which he bought new.

As a spraying tip, Boehler says ordinary household ammonia works great to wash herbicides out of spray tanks when you want to use the tank for other chemicals such as insecticides. "If you don't use ammonia, enough of the herbicide could remain in the tank to cause problems. The ammonia cleans the herbicide out and neutralizes it," says Boehler.

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Boehler mounted a 5-lb. carbon dioxide bottle and pressure regulator on a 2-wheeled steel frame, along with the 3-gal. tank and hand wand off a handheld pump sprayer. Carbon dioxide bottle pressurizes tank constantly, eliminating the need to do any hand pumping.

Battery-Operated Spray Cart

This new spray cart is motorized and powered by a 12-volt battery to continuously spray a variety of liquid products directly from a 5-gal. bucket or 2 1/2-gal. jug.

"You don't need to stop and pump the unit like you do with a backpack sprayer, so you can greatly reduce your application time," says Ken Rost, Frost Inc., St. Croix Falls, Wis. "There's no backpack pressure on your back. All you do is walk and spray."

The Handy-Spray is equipped with a 1 gpm pump and sprays 50 gal. on a single battery charge. The pump is controlled by a momentary switch on the handle, and the application rate is adjusted by ground speed. The spray nozzle mounts on a metal strap located on front of the cart. Three nozzle options are available, depending on the application type and desired coverage.

"The pump always runs at the same speed and pressure so you always get a nice, consistent application," says Rost. "It's ideal for use on acreages to spray herbicides or pest control products on lawns and gardens, and it works great to apply Roundup on weeds that grow along the edges of a gravel driveway. Some people even use it during winter to apply liquid ice control products on entry ways."

The Handy-Spray sells for $350 plus S&H.

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Battery-operated spray cart continuously sprays a variety of liquid products directly from a 5-gal. bucket or 2 1/2-gal. jug. Pump (below) is controlled by a switch on handle.

"Made It Myself" Spray Rig

"I got tired of using my 4-gal. backpack sprayer so I bought a 15-gal. spot sprayer from Northern Tool and mounted it on back of my Simplicity zero-turn riding mower", says Dan Schultz Oswego, Ill.

"The mower has a bagging attachment so I used that as a model to mount the sprayer. I used two 3-in. pieces of channel iron for the upright portion of the frame, cutting a slot in the bottom of each to fit over the attachment point on the mower and drilling holes to fit the pins that lock it to the mower.

"Then I attached pieces of angle iron to the top of the channel iron so I could lay down a piece of plywood on which I mounted the tank. I ran wire from the on-demand spray pump to a switch and then to the battery, using alligator clips to connect to the battery.

"It worked great as a spot sprayer but then I decided I also wanted a boom. I just added some L-shaped braces to the channel iron uprights, then used muffler clamps to affix a piece of 3/4 –in. pvc to the braces. I plumbed a 'Y' into the top of the tank to allow use of the spray wand and boom, which each have their own shut-off control. Then I used regular sprayer parts to mount nozzles on the pvc boom."

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Dan Schultz got tired of using his 4-gal. backpack sprayer so he mounted a 15-gal. spot sprayer on back of his riding mower. "It worked great as a spot sprayer, but then I decided I also wanted a boom," he says.

Pellet Stove Works Without Electric Power

"I was a hunter for several years and got tired of messing with firewood to provide heat in our camp. There was constant mainentance with a wood stove," says Washington inventor Larry Hepper. "It seemed like it took us a day or day and a half to get everything ready. One day I grabbed some tube steel, started cutting and welding, and eventually came up with my first pellet stove."

Hepper says his first prototype shot flames a foot high out of the stack. After several modifications and a few years of testing, the Clarry Pellet stove that his company now markets came to be.

Hepper did the design, fabrication and welding himself with ideas and suggestions provided by his son and fellow outdoorsman, Carl Williamson. Today Hepper's original design and a larger model serve the outdoors market. A UL-approved model can be used to heat residential homes, off-electrical-grid cabins, line shacks, detached shop structures or outbuildings.

Hepper says that Clarry gravity-fed stoves feed wood pellets automatically into the burning chamber without electrical power. "As long as you use the right pellets for the right conditions, the stoves work great, producing an abundant supply of heat," Hepper says.

The stove hoppers hold about 40 lbs of pellets that flow into a grate above a 5 in. deep ash drawer. As the pellets burn, heat radiates from the primary burning chamber and a secondary exhaust chamber. A manual thermostat controls temperature by regulating the inflow of air.

Hepper says best results are achieved when premium or super premium pellets containing less than 8 percent moisture and no recycled products are used. These pellets work best in lower elevations, while pellets with less than 6 percent and preferably less than 4 percent moisture should be used at 3,000 to 6,000-ft. elevations. Super premium pellets with less than 2.5 percent moisture should be used at 8,000 to 9,000-ft. elevation and during extremely cold conditions.

Clarry's RE model, which weighs about 110 lbs., uses about 4 to 5 lbs. of pellets per hour. It's made for 14 by 16-ft. or larger wall tents and sells for $1,599. The slightly smaller RME model is made for wall tents up to 12 by 14-ft. or ice fishing shelters and sells for $1,499. It measures 24 in. long by 6 in. wide by 28 in. tall and weighs about 70 lbs. It uses about 3 to 4 lbs. of pellets per hour. The CST and CSS models are UL-certified for use in small homes, off-grid cabins or shops. Those models retail for $1,999 and $1,899.

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Clarry gravity-fed stoves feed wood pellets automatically into the burning chamber without electrical power.