

but I do mind recharging it while it is in storage. The manufacturer instructs that the battery be charged once every month for a period of at least eight hours but not more than 16. This is a sprayer that cannot be left dormant.

This might not bother others, but it was the reason I swallowed my natural resistance to acquiring another gasoline-powered anything and bought a third sprayer, the **MacKissic Mighty Mac** model PS 322T. This sprayer is bigger still. It has a 22-gallon white polyethylene tank, and a three-horsepower Briggs and Stratton engine, which drives a Hypro twin-piston pump that can deliver 300 psi. Tank, engine, pump, and the four-wheeled carriage on which they are mounted weigh 120 pounds empty and nearly 300 filled. With this sprayer, a tow-hitch is standard; a pull handle is optional. Twenty-five feet of gray pressure hose connect the pump to a one-foot adjustable brass spray wand with a choice of two tips. I chose an optional pistol-grip wand that gave me 27 inches between my hand and the nozzle itself.

The five-and-a-half-inch opening in the top of the tank has a cover that is slightly awkward to remove, owing to the smallness of the knob. There is no filter screen in the opening or shutoff under the tank. There is, however, a tubular filter basket located in the line to the pump. What is most welcome is the pressure-relief hose that runs from the pump back into the tank. This provides constant agitation of the tank's contents whenever the motor is running, making it unnecessary to stop in order to be sure that wettable powders are still in suspension.

To prime this pump you unscrew the brass pressure-relief valve on the pump, stick the opened nozzle back into the filled tank, and start the engine. When all air has been cleared from the lines, you tighten the relief valve until the desired output pressure is reached.

The Mighty Mac is a much more powerful sprayer than either the Solo or the Mantis. There is no need for extension wands to get a fine spray 20 feet or more into the air. Pull the trigger and the spray is hurled skyward at a tremendous velocity. I can stand well back from the tree and rapidly give it thorough coverage with a blast that is sufficiently powerful to turn the foliage back on itself, wetting it on both sides at once.

The risk with this sprayer is that, unless you are careful, you use up an awful lot of spray in a hurry. The Solo and the Mantis sprayers each deliver their spray at a rate of several minutes per gal-

lon depending on the nozzle settings. The Mighty Mac, by contrast, delivers spray at a rate of several gallons per minute. It is easy to empty the whole tank on a single tree before you realize it. I have found that the trick to handling the Mighty Mac is to treat it as if it were an automatic weapon. Rather than pulling the trigger and emptying the magazine in one long burst, I get much more economical results by using short pulses and repositioning myself between trigger pulls.

With only a 25-foot hose it is necessary to move the machine periodically, and although it is possible to move by hand, I generally use my garden tractor. When the sprayer is being moved or is not in use, the hose can be wound up on an attached metal rack for storage. But the manufacturer specifically warns against leaving it there when the motor is running because the vibration may wear a hole in it. I will probably end up either padding the rack or buying a 50- or 75-foot section of hose. And I will definitely have to construct some sort of a shield between the hose and the hot muffler of the engine because I have already nearly burned a hole through the hose by letting it brush against the muffler.

For winter storage, the manufacturer suggests adding a gallon of antifreeze to the tank and circulating it through the pump. I find it easier to disconnect the lines and drain them, then disconnect the pump from the sprayer. I store the pump indoors where it won't freeze. Of course, I have to attend to all the winterizing procedures for the engine itself, the same as with any gasoline-powered piece of garden equipment.

Each of these three sprayers will do a fine job of spraying small trees. In addition, a number of accessories are available for gardeners with other needs—for example, multiple nozzles for spraying wide strips of grass. There are also plenty of other companies and models to choose from. In the range of four gallons to 22 gallons and \$100 to \$800, there are sprayers that should meet almost everyone's needs.

When choosing a sprayer, ask yourself what you are going to do with it. Then get as much information as you can. Written information is nice, though hands-on experience is even better. Spraying plants will never be a pleasure, but with the right equipment it can at least be less of a pain. ❧

*Roger B. Swain is science editor of this magazine.*

For sources of equipment mentioned in this article, see page 95.

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