

Wildland Invasive Species Program

The Nature Conservancy

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PVC Herbicide Wand

Parts Required

Unless otherwise specified, all the parts are 1 inch diameter PVC fittings.

2—threaded female caps

1—3/4-inch unthreaded female cap

4—male couplings, threaded on the male end

1—45 degree elbow coupling, unthreaded

1—ball valve, threaded on both female ends

1—pipe piece 12 to 15 inches long

2—pipe pieces 1 inch long

1—heavy duty (“cellulose”) sponge 2 x 4 x 1.5 inches

4—1.25 inch rubber lavatory gaskets (see construction hints, below)

Tools/Materials Required

PVC purple primer and cement

PVC pipe cutters or hacksaw

Coarse file for PVC

Drill with 1/16 inch and 3/4 inch bits

Ruler

Scissors (to cut sponge)

Assembly Instructions

Construction hints: When buying parts for the wand, remember that the wand has four threaded joins which are hand-tightened. Lavatory gaskets ensure the fits are leak proof. When selecting gaskets, try them out on the PVC connectors before you use them. You may need to double up gaskets to make a tight seal. Gaskets with too large of an inner diameter may leak, too. In general, refer to the construction schematics on our web site if you are unclear on any of the instructions (<http://tncweeds.ucdavis.edu/tools.html>).

A) Making the main reservoir: Cement a male threaded coupling onto each end of the 12—15” pipe. Place a rubber gasket on one end, followed by a female threaded cap. With the rubber gasket in place, the fit should be leakproof when hand-tightened to a snug fit.

B) Making the sponge reservoir: Depending upon the details of the way your PVC fittings were molded, you may have to innovate to complete this part of the construction. Read this section completely before proceeding! First, cut the end off the 3/4 inch PVC cap, and drill two holes (1/16 inch) in it. The cap should look like a large shirt-button. The cap should slide snugly into the unthreaded end of a threaded male coupling (you may need to file it a little). Cement it in place as far inside the male coupling as you can. Use a 1” length of pipe to cement the male coupling to the 45 degree elbow coupling. Use another 1” length of pipe to cement the other end of the 45 degree elbow to a male coupling.

C)Making the sponge tip: Drill a 3/4 inch diameter hole into a threaded female cap. Make a sponge tip by cutting a square or columnar chunk out of a heavy-duty sponge. A tip 1 inch in diameter and 1.5 inches long should fit snugly in the hole. A metal pipe with sharpened ends can be used to cut out sponge tips. Cut out several, you will need them.

D)Completing the wand: Using gaskets, screw the sponge tip to the end of the sponge reservoir nearest the 3/4 inch drip hole disk. Screw the other end into the ball valve. Screw the main reservoir into the other side of the ball valve.

How To Use the Wand

With ball valve in the closed position, pour the herbicide mix into the main reservoir and replace the fill-cap on the wand. Open the ball valve slightly to let herbicide enter the sponge reservoir. (You may need to loosen the fill-cap to let air into the main reservoir.) Once the sponge tip begins to saturate, close the ball valve (and if necessary, retighten the fill cap). Only a light touch of the saturated sponge tip is needed to apply herbicide to a cut-stump. Open the ball valve when more herbicide is needed in the sponge tip.

Helpful Hints

--by the wand's inventor, Jack McGowan-Stinski (TNC MI)

- 1)During colder weather the ball valve may have to be left open to allow enough herbicide to saturate the sponge. Drip holes also can be made larger if faster herbicide flow is desired.
- 2)Do not allow left-over herbicide mix to remain in the reservoir in extreme temperatures.
- 3)Always clear drip holes of residue before using the applicator. A paper clip works well for cleaning out residues.
- 4)When the sponge becomes worn, replace it (recommended after every work day at a minimum).
- 5)When using the applicator during freezing conditions, duct tape a disposable chemical hand warmer around the section with the drip hole disk to reduce the chance of drip holes freezing shut.
- 6)Use a herbicide dye to check for leaks, monitor applications, and identify any exposure to the person using the applicator.