The pot planter

a new attachment for the Waterjet Stinger

| J Chris Hoag

ABSTRACT

The original Waterjet Stinger creates holes, using high-pressure water, to plant nondormant hardwood cuttings, usually for riparian restoration. By using a new head that has a different tip and wider, thicker vanes, the Waterjet Stinger can create holes for container stock as well. The head is relatively inexpensive and to date our results have been favorable, but further testing is being done.

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KEY WORDS
outplanting, hydrodrill, restoration

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Figure 1. (top) The pot probe attachment to the Waterjet Stinger.
Figure 2. (middle) Vanes are attached at right angles to each other.
Figure 3. (bottom) The new tip has 3 holes that emit water.

Photos by J Chris Hoag

The Waterjet Stinger, a tool for outplanting dormant nonrooted cuttings of willows (*Salix* L. [Salicaceae]), cottonwoods (*Populus* L. [Salicaceae]), and dogwoods (*Cornus sericea* L. [Cornaceae]), was described in detail by Hoag and others (2001) a few years ago. The Waterjet Stinger uses water to hydrodrill a hole in the soil large enough to insert a 2- to 4-cm (0.75- to 1.5-in) diameter, dormant, nonrooted cutting. This hole, after it is hydrodrilled, is actually full of a water–soil slurry. When the cutting is pushed into the hole, the water in the slurry percolates into the surrounding soil profile while the soil portion of the slurry settles around the cutting. This results in good soil-to-cutting contact that prevents air pockets near the stem, allowing for better rooting. In addition, the water from the slurry creates a zone of moisture around the cutting that keeps it hydrated longer.

The original concept has worked so well that we have adapted a probe that allows the waterjet to be used to plant container material. We think this will increase the survival of container stock, especially in dry areas of the US, because:

- Plants would be outplanted into a wet hole rather than a dry hole—mitigating loss of moisture from the container medium to the soil.
- Plants would have fewer air pockets around their roots, yielding better root-to-soil contact.
- A slurry would create a zone of moisture, a "water bulb," around the roots that would extend the time the root system has contact with favorable soil moisture.

In 2004, we tested the first "pot probe" and were very pleased with the results (Figure 1). We were able to hydrodrill 15 cm (6 in) deep in a hard-packed silt loam soil in about 5 to 6 s, which allowed a 4-l (1-gal) container tree to fit perfectly into the hole. We have also used it to plant D-40 Deepots™ and Tall One Treepots™ (Stuewe & Sons Inc, Corvallis, Oregon) with great success. Testing is ongoing.

The pot probe was designed by Boyd Simonson. It is similar to the original waterjet probe but includes larger vanes on the sides to create the larger hole needed for container plants. The vanes are 7.5 cm (3 in) wide, taper toward the nozzle, and are welded to the probe pipe at right angles to each other (Figure 2). In addition, because the nozzle tip did not have to be stainless steel, a standard pipe cap was used. Three holes were drilled into the cap similar to the original design (Hoag and others 2001; Figure 3). The outside holes are drilled at a slight angle so that the water sprays out in more of a fan arrangement, allowing the waterjet to drill a hole faster and wider.

The pot planter probe is simple to build. It is made out of 0.5-in steel pipe with a larger 1.5-in pipe welded across the top to act as a handle. Each vane is cut from 0.25-in plate steel. A shutoff valve was added to the top of the pipe to turn the water flow on and off. The nozzle is a standard end cap that is ground flat and drilled with three, 3/16-in holes, 2 at a 7-degree angle and the third straight from the bottom. Materials cost about US$ 100. For additional information, please contact the author.

REFERENCES

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