

product formulations have a neutral pH (buffered) and a low viscosity to promote fast, effective, and non-phytotoxic injections. Arborjet formulates mixable products <dash> pesticides, fungicides and elicitors <dash> that include bridging agents with nutrition. Arborjet's formulations allow for quick uptake and ensure product movement to the target. By providing plant health and pest control, future problems are warded off. In addition, Arborjet products can provide up to three years residual.



ArborSystems, LLC

ArborSystems' Wedgle Direct-Inject tree treatment system is a trunk injection chemical delivery method that does not require drilling. Instead, the Wedgle Direct-Inject system injects chemical directly through the bark into a tree's cambial zone. Chemical is placed in the tree's active layer where it can be quickly and completely absorbed. This turnkey system provides everything an applicator needs to treat trees in four simple steps.

1. The number of injections required is determined by measuring the circumference of the tree just above the flare and referring to the label for injection requirements.
2. The Wedgle Punch is used to remove a small bark plug at each injection site.
3. A WedgleChek is inserted into each plug hole.
4. Insert the Wedgle Tip (attached to the Wedgle injection unit) through the WedgleChek and dispense a preset chemical dose. As the Wedgle Tip is withdrawn, the self-sealing WedgleChek keeps the chemical in the tree and prevents air or pests from entering the tree.

With the Wedgle Direct-Inject Tree Treatment System, almost any tree can be treated in less than five minutes. With the new Wedgle Direct-Inject Forestry Pack system, a single operator can treat hundreds of trees in just a few hours without changing or refilling chemical bottles.

With the Wedgle system, chemicals are injected directly into the tree's cambial zone. There is no waiting for uptake, and injections can be made in sunny or overcast conditions at any time of day. Since the system requires no drills or compressors, there are no power requirements. Everything needed to treat trees can be carried in a single, lightweight case or backpack.

The Wedgle Direct-Inject system is completed with ArborSystems line of Direct-Inject chemicals, which includes insecticides, fungicides, nutrients, and plant growth regulators. These chemicals are bottled exclusively for use with the Wedgle Direct-Inject system. The Wedgle is preset to release a precise 1-ml dose (or can be adjusted to deliver a 0.5-ml dose). Because chemical is injected precisely where the tree will use it, less chemical is required, reducing overall chemical costs. Immediate uptake provides control in two to five days, and a single application generally provides season-long control.

J.J. Mauget Co.

Mauget's system is a passive, non-impacting, simple and safe micro-injection system requiring minimal capital investment for equipment. It is an efficient utilization of a tree's natural transport system for introducing and moving therapeutic and protective chemicals.



Trees that can utilize this technology include ring porous (i.e. elms), diffuse porous (i.e. maple), semi porous (i.e. walnut), non porous (i.e. conifers and cycads) and monocots (i.e. palms). Trees and woody shrubs benefit from this technology. Materials such as pesticides, fertilizers and micronutrients are introduced into the active xylem of an adequately watered and actively transpiring tree or shrub.

The dosage generally is determined by measuring the tree at DBH and calculating one capsule for every 2 inches of diameter.

An 11/64-inch hole (7/64-inch for shrubs and thin barked trees or shrubs) is drilled with a Hi Helix drill bit (supplied) using a portable drill at slow speed (600 to 800 rpm). Injection sites should be drilled into the trunk of the tree at the flare and tops of buttress roots at a slight angle above level or at a right angle to the trunk tissue. The hole is drilled through the bark and cambium into healthy xylem tissue about 1/4-inch to 3/8-inch depending on tree size and species.

A plastic feeder tube is inserted into the pre-drilled hole, hand tight, and a capsule of the chosen product is fitted onto the tube. The capsule membrane is ruptured with the use of a soft-headed mallet, the material then flows into the feeder tube and into the active xylem and moves systemically up the tree within a few hours to 3-7 days, some materials are effective within 24 hours.

The effects are rapid. Most insecticides are working within three days or less, fungicide effects may be slightly slower, and fertilizer effects can be seen in three to four weeks.

Most importantly, Mauget's system in the hands of a trained <dash> Mauget trains all applicators <dash> and responsible professional applicator does no harm to the tree or the environment.

Mauget's technology requires making a small shallow surgical wound. The wound commences compartmentalization within hours and in most cases is completely callused over that season.

Mauget's chemistry of more than nine pesticides and five fertilizers are each formulated and tested to move rapidly through the tree, causing no harm to the plant or the environment.

Rainbow Treecare Scientific Advancements

Rainbow Treecare Scientific Advancements provides technical support, training, and education for Arbotect and Alamo fungicides and the tree growth regulator Cambistat. Arbotect and Alamo are applied by a process called macro-infusion while Cambistat can be applied as a basal drench or soil injection at the base of the tree.

Arbotect is a systemic fungicide that protects healthy elms from beetle transmission of Dutch elm disease for three growing seasons. Success rates of 99.5 percent over the three-year period of protection can be achieved when Rainbow Treecare's protocol is followed. Arbotect also minimizes the symptoms of sycamore anthracnose for three years.

Alamo is a fungicide used primarily for the control of oak wilt. In the red oak family, treat only those trees not showing symptoms of oak wilt but within root graft distance to a diseased tree. If a red oak is showing symptoms of oak wilt, a therapeutic treatment of Alamo will not save the tree. Success for Alamo treatments when applied preventively is about 90 percent. White oaks and live oaks can be treated both preventively and therapeutically, although live oaks respond best to preventive treatments. Macro-infusion is a tree care tool that enables an arborist to deliver a large volume of dilute fungicide solution directly into the water-conducting tissues of a tree through the root flares. The goal of the process is to obtain even and complete distribution of the chemical throughout the crown. The process is performed on the root flares for three reasons:

1. Root flare tissue allows for good lateral movement of the solution, which provides for complete distribution of the chemical throughout the canopy.
2. There is greater surface area on the root flares, which provides for better tee placement.
3. Root flare tissue seals over faster than trunk tissue **ST**

