

Tree injection works—when done well

Proper diagnosis of tree illnesses requires that strict attention be given to the tree's history, type and location.

Once the cause is determined, injection treatment, if required, must be done according to strict guidelines to produce positive results.

Lanphear Supply of Cleveland, Ohio, recently sponsored a tree injection seminar to examine proper tree diagnosis and injection treatment.

Tim Johnson of Artistic Arborists, Phoenix, Ariz., believes there may be something in a tree's past that has a direct effect on its present condition. These factors include whether the tree is newly planted or long established; the source of the plant; date of planting and tree condition; soil type and maintenance history.

According to Johnson, proper tracking of a tree's history also should include information on the water source, speed of percolation, fertilization programs, pruning, disease and pest history and on-site environmental conditions.

How does it look?

"Then you must look at the plant itself," says Johnson. "Look at its appearance, which includes the root zone, trunk, canopy, flower or fruit

production, and the overall healthy appearance of the tree."

When examining a tree's roots, for example, Johnson says to take into account the degree of root flare, root de-



Lauren Lanphear: Soil temperature is the most critical factor to consider during tree injections."

velopment, color and stability in the ground.

Trunk examination should consider bark color, soundness and evidence of prior injury.

With inspection of the tree's location, determine whether care has been periodic, haphazard or frequent. Is there much activity around the tree? What was the area used for in the past? Was it a forest, playground or parking lot?

When you look at the site, Johnson advises, look at a number of soil characteristics: soil type, pH, moisture, oxygen level, compaction, salt content, percolation, temperature and hardness.

Proper injection

Lauren Lanphear, president of Lanphear Supply, is a disciple of the Mauget system of tree injection. One of the benefits to the system is that minimal depth is required.

"With the Mauget system, drilling is usually done at 1/4-inch," says Lanphear, "whereas some injection systems require drilling as deep as three inches.

"But even a tiny drilling requires that you wound the tree, so care must be taken.

"Be aware of drilling into non-living tissue," advises Lanphear. "Your most active tissue is going to be located directly inside the bark, in the non-functional xylem."

Avoid injecting into decayed areas;

chemical activity will cease.

Citing research from the University of Illinois, Lanphear says wounds that are 3/8-inch in diameter invariably close within one year.

Avoid injections into root valleys. "The mid-root flare area is the best place to inject," says Lanphear, "followed by the lower root flare or the root itself.

"The stem or trunk, or below or beside an existing wound are the least desirable injection sites."

Timing: spring is best

Injection treatments are most effective when done in spring.

"Later in the year, you'll get less closure," advises Lanphear. "If you inject in fall or early winter, realize that there's a lot of fungal spores in the air at that time of year, and you can expose the wound to greater risk."

Mid-day injections are more effective than those performed in early morning or late afternoon.

High air temperature (75°F), low humidity and sunlight are also desirable.

"The lower the humidity, the less pressure there is on the transpiration system," says Lanphear. "And sunlight helps raise the intake pressure inside the xylem."

Look at the family tree

Genetics impacts wounding to a great degree. "It controls compartmentalization," explains Lanphear. "You have to become familiar with which trees respond better to wounds. Among species, one will be better than another. Between species, some trees we describe as short-lived trees: willows, cherry, cottonwood."

This is when prior injury can tell a tale.


"Look at old pruning wounds or areas where branches have naturally broken off," says Lanphear. "If it's clear that a tree doesn't close its wounds quickly, that's a tree you might not want to inject. Also, monitor the trees you inject. Do not inject a tree if it's cracking or bleeding.

The most critical factor of all, says Lanphear, is soil temperature.

"When we inject a tree, we're plugging into the tree's natural uptake system. Soil temperature is what activates that uptake. Root activity ceases at temperatures below 30°F.

"At 50°F and above," says Lanphear, "the transpiration system is at full go."

—Terry McIver □



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