

spread out in a natural pattern of growth, are always moist and never at sub-zero temperatures. Every step or method of care and protection which duplicates or approximates these conditions increases survival at transplanting time and rapid regrowth in the new location. Transplanting

losses are the greatest drains on profits in any form of the nursery industry. They are worth any effort to reduce and control them.

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## NEW METHOD OF INJECTING IRON INTO PIN OAKS

Contributed Abstract

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The use of iron salts to control lime-induced chlorosis in oaks is an accepted horticultural practice. For the past four years, we have used a method of injecting iron sulphate dissolved in water called the Medi-Ject Method®. It only requires 24 hours to treat an average size pin oak. This method can be effective using either gravity flow or low pressure (10-15 psi). This work was done in Lincoln and West Point, Nebraska.

The main disadvantage of iron sulphate over the other recommended materials is its inability to readily solubilize in cold water. We overcome this by injecting large quantities of water over a period of several hours. Holes 2 inches deep are drilled at equal distances around the tree (not to exceed 12 inches apart), preferably into the flare roots which extend out from the tree trunk. A 2½-gallon reservoir filled with ½ gallon of water flushes the lines which connect the tees to the reservoir. One-half the required amount of iron sulphate (Table 1) is dissolved in ½ gallon of water and placed in the reservoir. This is repeated with the other half of the iron sulphate. The reservoir is then filled. When almost empty, refill with plain water to flush the system and carry any residual iron into the tree. (This refill is usually done by the customer.) The number of refills varies according to the size of the tree. The number of holes per tree, the amount of ferrous sulfate used, and the number of water refills are given in Table 1.

In Lincoln, 5 trees were treated in 1978, 26 in 1979, 76 in 1980, and 234 in 1981. In West Point, 17 trees were treated in 1980. The trees averaged 13 to 19 inches in diameter. Of the 358 trees it was necessary to retreat only 6 that either failed to become green after 45 days or reverted to the chlorotic state after 1 year. Phytotoxicity was not observed on those trees treated according to label rates.

**Table 1. Injection of ferrous sulfate into pin oaks using the Medi-Ject® method.**

<i>Tree diameter (inches)</i>	<i>Number of holes per tree</i>	<i>Amount of FeSO<sub>4</sub> (ounces)</i>	<i>Number of refills</i>
1-4	4	0.5	1
5-10	4-5	2.0	1
10-15	5-6	4.5	1-2
15-20	6-7	5.5	2-3
20-25	7-8	6.5	3-4
25-30	8-9	7.5	4-5
30-35	9-10	8.5	5-6

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