

**Optimum Stocking of Urban Trees.** Norman A. Richards, SUNY College of Environmental Science and Forestry, Syracuse, NY.

Promotions of urban tree planting tend to ignore the broader tree management concept that optimum stocking usually is not the maximum possible, but rather, depend on site-specific benefits and costs of trees in relation to the greenspace resources that can support their growth. Based primarily on observations in Syracuse, NY, this paper offers concepts for wider testing as to adaptation of forestry concepts of stocking to three general categories of urban tree conditions: 1) urban woods, where forest stocking concepts are directly applicable, 2) urban savanna and street tree strips, the largest area component in most communities, with substantial greenspace interspersed with structures. Here, optimum stocking commonly is held below the biological potential of the greenspace by non-tree values, and depends on many site-specific factors, and 3) trees in paving, mostly in central-city areas, where optimum stocking depends on the potential and willingness to create adequate quality spaces to support trees.

**The Influence of Soil pH on the Activity of Paclobutrazol, Flurprimidol and Uniconazole.** D.E. Wachter, H.A.Holt and W.R. Chaney, Department of Forestry and Natural Resources, Purdue University, West Lafayette, IN 47907.

This study was conducted to determine whether soil pH has a significant effect on the uptake of three tree growth regulators (TGRs) by seedlings of silver maple (*Acer saccharinum*) and American sycamore (*Plantanus occidentalis*). A Hanna series loam, with a pH of 5.0, was treated to raise the pH to 6.5 and 8.0. Two concentrations (1X and 10X) of three TGRs (paclobutrazol, flurprimidol, and uniconazole) were incorporated into the soil after dissolving the technical grade of the active ingredient in isopropyl alcohol. One-year-old American sycamore and silver maple seedlings were planted into soil containing the pH-TGR treatment combinations. Soil drenching treatments, using the same concentrations, soil pHs, TGRs and tree species were also established. A randomized complete block design with six replications per treatment were established for both experiments. The height of the dominant stem at 90 days after treatment was recorded. The data were analyzed using a 4-way analysis of variance followed by a comparison of means. American sycamore showed a significant difference in the 4-way interaction of pH-application method-regulator-concentration. Silver maple did not show a significant difference in the 4-way interaction. Comparing the treatment of pHs to each other, pH 5.0 was regulated the most followed by 6.5 and 8.0. The drench application demonstrated the most regulation, especially with the flurprimidol treatments at the 10X concentration.

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## MUNICIPAL/UTILITY COOPERATION BENEFITS BOTH

by David F. De Voto

For many years municipalities and utility companies have had strong feelings that neither was helping the urban forest accomplish the things it should. Utility companies argue that trees that reach a height that place them near utility lines should not be planted. Urban foresters argue that many of these trees are already there and that utility companies are "butchering" these trees during line-clearance. Further, they argue that

taller trees are needed to provide shade in cities and that utility lines should be placed underground. Recently, however, there have been many instances of changes in attitudes on both sides and that consideration is being given to mediating and resolving these issues.

The city of Minneapolis, Minnesota is friendly, beautiful, and tree covered. Northern States Power (NSP) Company, is efficient, powerful but coop-

erative. In fact, the Minneapolis Forestry Division and the NSP Line Clearance Division get along so well that even the trees feel good.

We have recently conducted two major cooperative programs. The first was an experimental project using a growth regulator. A few years ago, NSP approached the Minneapolis Forestry Division and said that they wanted to conduct some research using a new growth regulator. It would be injected into trees growing under their lines. What they hoped to do was to extend their trimming cycle to reduce expenses. They wanted permission to use the Minneapolis trees.

Frankly, the Division was somewhat reluctant because I had personal concerns about injecting trees for any reason. After some discussion, however, a compromise was reached that allowed injection but only in certain species of trees of not less than 10 inches in diameter, and only in limited areas of the city. Injections were not allowed in very small trees for fear of serious damage to the cambial layer. Soil applications for the smaller trees, would have been allowed but the pesticide label did not permit that use.

In this particular study, the results were poor and there was serious weeping from injection sites in some trees. The project is on hold but may be tried again if soil application approval can be gained. At least we sat down, worked out a compromise and cooperated.

The second project came about when the citizens of certain neighborhoods in Minneapolis requested ornamental street lighting in place of the standard tall luminaire type poles and fixtures. The original plan developed by the City Planning

Division called for between-pole trenching down the boulevard (parkway, tree lawn) for burying the electric cable. When the trenching started, neighborhood home owners became concerned about serious root damage to trees. The Forestry office placed a temporary hold on the project except in areas where no trees were involved.

In a public meeting the Director of Forestry distributed a guide developed by the municipal foresters of northeast Illinois entitled: *Parkway Tree Augering Specifications* (1). There was silence for a couple of minutes while the homeowners and the construction people absorbed what they had read. The NSP spokesperson responded, "Is this all you want? That's no problem at all". The NSP construction workers are now following the procedure of trenching as specified. The "pseudogopher" (an air powered, cylindrical shaped ram) is being used to tunnel under the tree. The electric wire is pulled through the tunnel and the trench is begun again on the other side.

The lesson learned from these two experiences is that when each side listens to the other and when they work out mutual compromises, everyone benefits and the job gets completed to everyone's satisfaction.

#### Literature Cited

1. Morell, John D. 1984. *Parkway tree augering specifications*. J. Arboric. 10(5):129-132.

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