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**TREE SERVICE** Since 1975

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## Fall Fertilization

Is Fall Fertilization a predisposing factor for winter injury in urban landscape plants?

Fall application fertilizer is a common arboriculture practice and research has shown that late summer or early fall is usually the most effective application time for fertilizers, due to nutrient uptake prior to the start of growth the following season. Early shoot growth is almost entirely dependent on the level of stored nutrients. Fertilizer is applied in the fall so that nutrients can be absorbed prior to cessation of root activity and will be available to the developing leaves in the next spring.

Physiological and chemical processes in the woody plant as it "hardens off" make it better able to withstand low temperatures. Winter injury occurs when the temperature of a plant part is lower than its tolerance level. When this low temperature threshold is exceeded, many cells die, leading to symptoms collectively known as winter injury.

The conditions for winter injury are most common in the spring or fall as the tree is changing hardiness and unusually cold temperatures occur, or any time during the winter when extremely low temperatures are encountered.

Some practitioners believe that fall application of fertilizer, specifically those containing nitrogen, will promote less hardy growth that will be damaged in the winter.

Concern about fall fertilization of landscape plants may have originated from some very old research done on fruit trees, but the research was "flawed". In one study, nitrogen rates applied were over four times that what would typically be recommended today, and the "N" was a "quick-release" form. Additionally, at least one of the compounds in this particular fertilizer was later shown to cause tree problems all by itself. In another study, fertilizer rate was far more important than the timing.

Conifer research has pretty consistently shown that fall fertilization increases winter hardiness.

The bottom line of recent research seems to be this: When using the fertilizer rates outlined in the ANSI A300 – Part 2 (Fertilization) standard, reduction in winter hardiness associated with fall fertilization of the "determinate growth" hardwoods or conifers should not be a problem. The only species for which caution may be needed are "indeterminate-growth" species – ones that have multiple growth flushes annually, such as crapemyrtle, *Populus* and apple.

Winter injury is most likely to occur with species planted outside of their hardiness zones, after years of heavy fruit development, after late summer topping, or after excess fall irrigation/rainfall.

Remember the reason for fertilization is to supply nutrients determined to be deficient to achieve a clearly defined objective. Common fertilization objectives include: correcting a visible nutrient deficiency; eliminating a deficiency not readily visible that was detected through soil or tissue analysis; or increasing plant growth, flowering or fruiting.

Winkler's Certified Arborists will be happy to answer any questions and provide a detailed recommendation to fit your specific needs and budget. **Just give us a call: 708-544-1219 or email [info@winklerstreeservice.com](mailto:info@winklerstreeservice.com)**