



TREES UNDER STRESS: THE DROUGHT OF 1988-1989

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The classic symptoms of water stress—wilted leaves and marginal leaf scorch—were a common sight during the 1988-89 growing seasons. In severe cases, the terminal portions of the crowns of trees died back, as that portion of the plant is most remote from the limited water supply. Recently planted trees, particularly those set out in spring or fall of 1988, suffered extreme drought stress or death.

Fall-planted conifers were nearly a complete loss. Drought sensitive trees such as sugar maple, beech, birch, arborvitae and spruce were among the most common fatalities.

Many tree losses during 1989 were due to borer infestation of drought stressed trees. Oaks, birches and pines were especially hard hit, but ashes, lindens and numerous other trees are dead or dying from this cause. Canker and vascular diseases such as Dutch elm disease and oak wilt have been more prevalent due to drought stress.



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In some cases the bronzed, irregular dead tissue of scorch disease will extend both inward from the leaf margin and in between the veins.

Rainfall for 1989 in Madison is at least six inches below normal and some parts of the state have received even less. If the drought persists, deep watering of the rootzone of trees before soil freeze-up is in order — especially for conifers.

In addition to irrigation, mulching young trees with shredded bark or woodchips will help conserve soil moisture and moderate soil temperature extremes. Apply three to four inches of mulch over the entire rootzone of the tree, but keep it six inches away from the trunk. Mulch in contact with the trunk may delay winter hardening of those tissues and the mulch may serve as an attractive home to mice and moles that may feed on the bark in winter. The presence of mulch will also minimize injury from mowing equipment and weed "eaters".

Research by Dr. Gary Watson at the Morton Arboretum has demonstrated that grass growing over feeder roots of trees causes severe competition for moisture and nutrients. The addition of mulch over tree roots increased total root surface area of trees up to 195%.

When applying turf herbicides, keep them away from the rootzones of trees. Dicamba can kill broad-leaved trees as well as broadleaved weeds!

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