VEGETATION MANAGEMENT

By Roger Funk, Ph.D., Davey Tree Expert Co., Kent, Ohio

Q: *How do you treat St. Augustine decline (SAD)? (Texas)*
A: St. Augustine decline (SAD) is the only major viral disease infecting turfgrasses and cannot be cured with chemicals. Although the best solution is to plant resistant cultivars, susceptible turfgrass can be improved through proper maintenance. Apply fertilizer high in potassium and iron and low in nitrogen. Do not overapply pesticides, particularly phenoxy herbicides. If the turf is grown in shade, do not apply phenoxy herbicides and mow slightly higher.

Q: *I would like to add variety to the landscape plantings at one of our state mental institutions. The goldenchain tree is being considered but I have heard that its parts are poisonous. Is this true? (Indiana)*
A: A number of sources, including a publication from the Arnold Arboretum of Harvard University, state that all parts of the goldenchain tree (*Laburnum anagyroides*) are poisonous, particularly the flowers and seeds which contain a substance called cystine. If eaten, the person may experience vomiting, convulsions, and even death.

Two references to examine prior to purchasing trees for this specific purpose are *Poisonous Plants of the United States* by W. C. Muenscher (1947) and *Poisonous Plants of the United States and Canada* by J. M. Kingsbury (1964).

Q: *What is the latest information on maple decline? Has any specific disease been identified as the cause and can it be controlled? (Michigan)*
A: As with many disorders, we do not as yet, have the final answer(s) and research continues. At present, a number of factors have been associated with maple decline either as an inciting agent or as a contributing factor. These include deicing salts, soil compaction, nutrient deficiencies, drought or prolonged wet soils, high soil temperature, girdling roots, insect defoliation, pollution, mechanical injury, root disorders and basal cankers. Maple decline is usually a "complex" of many of these factors.

Identification and correction of the causal agents in conjunction with high nitrogen fertilizer and proper watering has given the most consistent results. Of course, proper tree selection, soil preparation, and planting practices will minimize the potential for stress conditions that weaken maple trees and trigger maple decline.

Q: *I have been told that fungicides increase the amount of thatch. How is this possible and is it really a problem? (Georgia)*
A: Most fungicides cause thatch accumulation by inhibiting microorganisms that decompose thatch and by increasing the shoot tissue that must be decomposed. However, I am not aware of any research that shows that the increase in thatch is significant.

Q: *Can you tell me a reference for the relative sensitivity to salts of trees commonly grown in central and northeastern United States? (New York)*
A: In the November 1976 Journal of Arboriculture, an article by Michael Dirr entitled "Selection of Trees for Tolerance to Salt Injury," provides a rather comprehensive list of trees ranked according to their relative salt tolerance. More recent information can be obtained from Dr. George Hudler, assistant professor of plant pathology at Cornell University, Ithaca, New York.

I have included a list of the relative salt tolerance of trees and ornamentals which I compiled from various sources. Since investigators often place a tree species in different categories, contact your local extension service to determine if any information is available for your particular area.

Relative salt tolerances of trees and ornamentals

Good Salt Tolerance		Moderate Salt Tolerance		Poor Salt Tolerance	
Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name	Common Name
Quercus robur	English oak	*Thuja spp.*	arborvitae	*Fagus spp.*	beech
Populus alba	white poplar	*Juniper spp.*	juniper	*Juglans nigra L.*	black walnut
Robinia pseudoacacia L.	black locust	*Salix alba tristis*	weepinggold willow	*Tilia spp.*	linden
Gleditsia triacanthos L.	honeylocust	*Pinus ponderosa*	Ponderosa pine	*Euonymus alatus*	winged euonymus
Elaeagnus angustifolia L.	Russian olive	*Fraxinus pennsylvanica*	green ash	*Spirea spp.*	spiraea
Crataegus spp.	hawthorn	*Juniperus virginiana*	Eastern red cedar	*Viburnum spp.*	viburnum
Quercus rubra	red oak	*Gleditsia japonica*	Japanese honeylocust	*Alnus incana*	speckled alder
Quercus alba	white oak	*Acer negundo L.*	boxelder	*Rosa spp.*	rose
Morus spp.	mulberry	*Malus baccata*	Siberian crab	*Acer pseudoplatanus*	sycamore maple
Pinus nigra Arnold	Austrian pine	*Ribes nigrum heterophyllum*	cutleaf European black currant	*Populus nigra italica*	lombardy poplar
Prunus serotina	black cherry	*Pyracantha spp.*	pyracantha	*Acer rubrum L.*	red maple
Populus grandidentata Michx.	large-toothed aspen	*Ligustrum spp.*	privet	*Acer saccharum*	sugar maple
Pinus thunbergi	Japanese black pine	*Populus deltoides*	Eastern cottonwood	*Buxus sempervirens*	common boxwood
Pinus rigida	pitch pine	*Populus spp.*	poplar	*Ulmus americana L.*	American elm
Lycium halimifolium	matrimonyvine	*Salix nigra*	black willow	*Pinus strobus*	white pine
Fraxinus americana L.	white ash	*Catalpa speciosa*	Northern catalpa	*Tsuga canadensis*	Canadian hemlock
Ulmus procera (campestre)	English elm	*Cydonia oblonga*	quince	*Ostrya virginiana*	American hophornbean
		Quercus macrocarpa	bur oak	*Taxus spp.*	yew
Acer platanoides L.	Norway maple	*Shepherdia argentea*	silver buffaloberry	*Pinus resinosa*	red pine
Acer saccharinum L.	silver maple	*Populus tremuloides*	trembling aspen	*Carya ovata*	shagbark hickory
Prunus virginiana L.	chokecherry	*Betula lenta*	sweet birch	*Malus spp.*	apple
Aesculus hippocastanum	horsechestnut	*Betula papyrifera*	paper birch	*Pinus sylvestris*	Scotch pine
Ailanthus altissima	ailanthus	*Betula populifolia*	gray birch	*Abies balsamea*	balsam fir
				Picea pungens	Colorado spruce