

SALT RESISTANCE OF TREES & SHRUBS



Road salt can kill trees, although it mostly just causes the tree unneeded stress. The degree of stress placed on the tree varies with the amount of salt and the salt tolerance of the individual species. It also is dependent on whether the tree is likely to be exposed to **salt spray, soil contamination, or a combination of both**. When planning a roadside tree planting, whether for aesthetic reasons or in creating a windbreak, several factors must be considered: proximity of the trees to the road, the amount of road traffic and therefore the amount of salt, the prevailing winter wind direction, and elevation of the planting site relative to the road surface.

Soil Contamination

Excessive salt accumulation in the soil can occur in areas where salt laden snow is plowed or shoveled off streets or in low lying areas that receive road runoff. The resulting damage to trees and shrubs is threefold, you have chloride which has been absorbed by the tree, scorching leaves and hindering food production, lack of oxygen and water from soil compaction caused by altered soil structure, and soil nutrients necessary for plant survival being chemically tied up by high sodium concentrations. Often, evidence of salt damage through soil contamination is apparent in deciduous trees planted in urban settings such as roadsides and parking lots, as a brown scorching along the outer edges of the leaf.



High Tolerance	Moderate Tolerance	Low Tolerance
Norway maple (non-native)	Silver maple	Red maple
Horse chestnut	Shagbark hickory	Sugar maple
Yellow birch	Basswood	Balsam fir
Gray birch	Green ash	Black walnut
White ash	Red cedar	Norway spruce
European larch	Scots pine	Red pine
White spruce	Black cherry	White pine
Balsam poplar	Plum	Douglas fir
Cottonwood	Smooth sumac	Eastern hemlock
White oak	Eastern white cedar	Highbush cranberry
Bur oak	American elm	Red Osier dogwood
Red oak	Gray dogwood	Hackberry
Mountain ash		American beech
Choke cherry		
Staghorn sumac		
Common lilac		

Salt Spray

Injury caused by salt spray is usually not apparent until the early spring, although long term exposure to salt spray will result in easily recognizable symptoms and patterns of damage. Salt on the buds, needles and smaller and younger branches can actually cause them to lose their cold hardiness and freeze. Deciduous trees may have a lack of budding and leaf out on the outer ends of the branches on the traffic side giving the branches a tufted appearance, while branches on the non-traffic side will appear relatively unaffected. Evergreen trees and shrubs damaged by salt spray will have needles which brown off from the tip in towards the branch beginning near the end of winter and continuing until early spring. In some cases the brown off may be masked by the onset of fresh spring growth, or entire sections of the plant may die back. Often there is no damage to the lowest branches which have been covered by a continuous pack of snow for the majority of the winter.



High Tolerance	Moderate Tolerance	Low Tolerance
Norway maple (non-native)	Black walnut	Red maple
Horse chesnut	Red cedar	Shagbark hickory
Hackberry	Black cherry	American beech
White ash	American elm	Bur oak
Kentucky coffeetree	Silver maple	Basswood
Gray birch	Gray dogwood	Red pine
Cottonwood	Green ash	White pine
Staghorn sumac	Red oak	Sugar maple
White oak	Eastern white cedar	
White spruce	Common lilac	
Yellow birch		
European larch		

