

Plant Ice Resistant Trees

A number of characteristics increase a tree species' susceptibility to ice storms: "included" bark, decaying or dead branches, increased surface area of lateral (side) branches, broad crowns, and imbalanced crowns.

Included bark results from in-grown bark in branch junctions. This is a weak connection and enhances a tree's susceptibility to breakage under ice-loading conditions. For example, "Bradford" pear branches often break during ice storms where there is included bark in branch junctions. In contrast, the "Aristocrat" pear has few branches with included bark and sustains less damage during ice storms.

Decaying or dead branches are already weakened and have a high probability of breaking when loaded with ice. The surface area of lateral branches increases as the number of branches and the broadness of the crown increase. With an increased surface area, more ice can accumulate on lateral branches; the greater ice load results in greater branch failure.

Many broad-leafed tree species, when grown in the open, form broad crowns (decurent branching), increasing their susceptibility to ice storms. Examples include Siberian elm, American elm, hackberry, green ash, and honey locust. Trees with imbalanced crowns are also more susceptible to ice damage.

Ice storm damage management and prevention

Proper tree placement, away from structures, will reduce property damage. Trees should not be planted in locations where growth will interfere with above-ground utilities – branches that grow into power lines and fail during ice storms create power outages and safety hazards. Trees pruned regularly from a young age should be more resistant to ice storms as a result of removal of structurally weak branches, decreased surface area of lateral branches, and decreased wind resistance. Professional arborists can install cables and braces to increase a tree's tolerance to ice accumulation in situations where individual trees must be stabilized to prevent their failure.

After storm damage has occurred, hazardous trees and branches require immediate removal to ensure safety and prevent additional property damage. Trees that can be saved should have broken branches properly pruned to the branch collar (stubs and flush-cut pruning result in weakly attached sprouts and future insect and disease problems). Loose bark should be cut back only to where it is solidly attached to the tree. A split fork can be repaired through cabling and bracing.

Tree species resistant to ice damage can be planted to reduce tree and property damage from ice storms:

Ice storm susceptibility of tree species commonly planted in urban areas

<u>Susceptible</u>		<u>Intermediate resistance</u>	<u>Resistant</u>	
American elm	Honey locust	Bur oak	American sweetgum	Ironwood
American linden	Pin oak	Eastern white pine	Arborvitae	Kentucky coffee tree
Black cherry	Siberian elm	Northern red oak	Black walnut	Littleleaf linden
Black locust	Silver maple	Red maple	Blue beech	Norway maple
Bradford pear		Sugar maple	Catalpa	Silver linden
Common hackberry		Sycamore	Eastern hemlock	Swamp white oak
Green ash		Tuliptree	Ginkgo	White oak
		White ash		

Source: Univ. of New Hampshire, University of Illinois, USDA Forest Service and NH Dept. of Resources and Economic Development.

Find a professional

A professional arborist can assess your landscape and work with you to determine the best salt-resistant trees and shrubs to plant and to care for your existing landscape. Contact the Tree Care Industry Association (TCIA), a public and professional resource on trees and arboriculture since 1938. It has more than 2,000 member companies who recognize stringent safety and performance standards and who are required to carry liability insurance. TCIA has the nation's only Accreditation program that helps consumers find tree care companies that have been inspected and accredited based on: adherence to industry standards for quality and safety; maintenance of trained, professional staff; and dedication to ethics and quality in business practices. An easy way to find a tree care service provider in your area is to use the "Locate Your Local TCIA Member Companies" program. You can use this service by calling 1-800-733-2622 or by doing a ZIP Code search on www.treecaretips.org.

Editors: If you would like additional information or digital photos, please contact Editor@tcia.org

TCIA arborists, safety and business professionals are also available as sources for tree related articles and issues: 1-800-733-2622 or andersen@tcia.org.