

September 17, 2014

## Four Steps to Build “Winter-ready” Trees

Are you still mourning the loss of a favorite tree after the long winter of 2013/2014? Afraid of losing more this winter? There are some basic steps that can be taken to better prepare trees from the ravages of winters in the Upper Midwest. It's not possible to avoid all damage, but much of the tree losses and damage experienced from past winters can be reduced or minimized.

**Step One:** Most damage to trees and shrubs during Minnesota winters is damage from animals. Voles bury under the snow and feed off the bark of landscape plants all winter long. Rabbits “prune” the same plants above the snow line. Deer eat or rub everything above the rabbit feed-line. It's a wonder anything but voles, rabbits and deer survive.

There are a lot of products on the market that claim degrees of efficacy for critter control, but the one, almost-guaranteed step for eliminating this damage is excluding the critters from the plants. For rabbits and voles, ¼ inch hardware cloth around the stem/s, starting from the ground-line and up to the first branches works. If that's not possible, create a protective fence around the whole plant with that hardware cloth. Chicken wire does not stop voles, so if you're going to invest the time, invest in hardware cloth, available at any hardware store or home-improvement center.

A taller (5 feet or more) fence around your prized evergreens or shrubs will discourage the deer from over-feeding. Don't leave too much open space between the fence and the plant, though, because deer are amazing high-jumpers. To prevent deer rubbing damage to tree trunks, put 3-4 steel fence posts around the tree trunk, far enough from the stem to avoid damaging the roots but close enough that the antlers can't reach the bark.

**Step Two:** Deicing chemicals kill plants in several ways, so minimize their use and/or move the plants far enough away to minimize the damage. Salt is great on pizza, but very toxic to tree and shrub roots, foliage, flower and leaf buds. If you are near a heavily-used road with speed limits nearing 45 mph or greater, keep sensitive plants at least 60 feet away, or build a protective fence between the road and the plants (a real good look). If you can't build a fence, wrap the plants in burlap for the winter (an even better look). Or, avoid planting near the roads or use plants that tolerate deicing salts better than others

Deicing chemicals kill plants either by killing their roots when the snow melt gets into the soil or the foliage and buds when the spray from the road hits the above-ground plant parts. Do not over-use any deicing chemical. If you can get along without the perfectly dry and salty pavement in your own landscape, don't use any chemical. Shovel early and often whenever possible. When you do use chemicals, carefully follow package directions.

**Step Three:** Water-stressed plants suffer more die-back, more stem cracking and more death than those that enter winter well-watered. Water throughout the summer and autumn, right up to the point where the frozen ground can't take in water. Mulch around your trees and shrubs as far out as you can stand it with 3-4 inches of organic mulch. This reduces the amount of water lost to evaporation, keeps the soil warmer in the autumn and often (as long as there is normal snow cover), and keeps the soil from freezing beyond a thin crust at the top. Roots are very susceptible to cold temperatures (that's why they're underground), so preventing cold soil temperatures minimizes die-back in the following spring and summer. Dry soils in the late autumn freeze faster and deeper than moist soils.

**Step Four:** If your trees and shrubs chronically break apart from heavy winter snows and ice loads, tie the stems together for support before winter starts. If possible tie the branches and stems on shrubs and multiple-stemmed trees (like arborvitae) with pieces of burlap or old bicycle inner tubes or "tree-chains" at a point about 2/3 the distance between the ground and the top of the plant. This artificial support will keep the plants from flopping open and breaking branches and stems. Tree chain is a reusable, commercial product available in different sizes in most garden centers.

None of these steps are very effective after the damage so the best time to take care of the plants is before Thanksgiving (deer protection should be in place by early autumn) and removed (except for mulch) by Easter.

For more information, read the University of Minnesota Extension online publication, *Protecting Trees and Shrubs Against Winter Damage*, by Swanson and Rideout.

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Examples of Stem Protection

