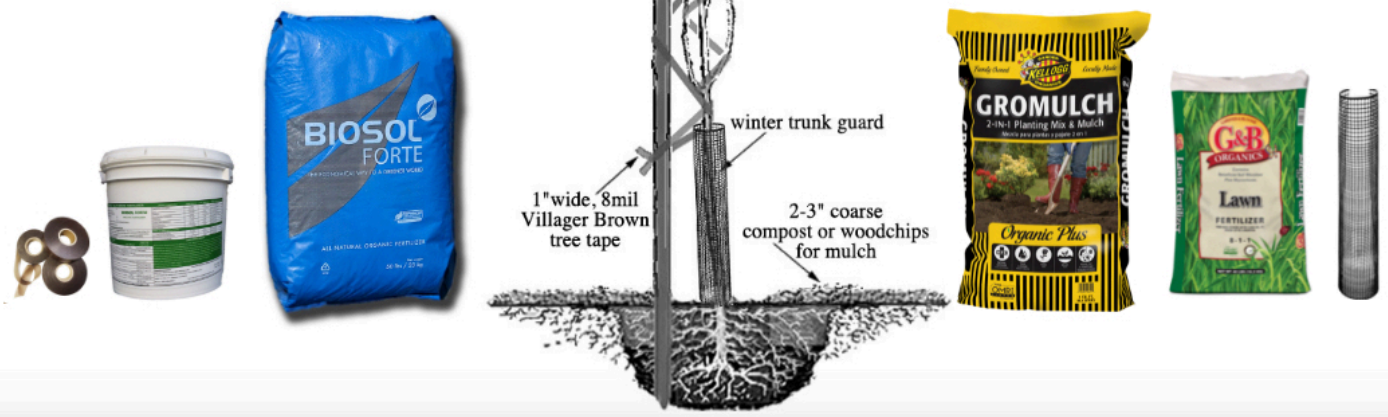
Villager nursery inc.



Tree Winterizing

•) **Improving the odds -** It is often little things we do in our gardens that slightly (or greatly) increase the odds of our plants surviving and thriving. Know that, in nature, on the dry side of the Sierras, one in a million (or far, far fewer) native plants ever survive from seed to maturity.

Native plants are "cultured and manicured" by harsh forces of nature. Seedlings are pruned by ice, snow, and wind from their first winter on, and also, in nature, > **99.9999% of them die**. *Most homeowners, gardeners and landscapers don't like infinitesimally small survival rates* nor do they want to wait 15 years to see their landscape struggle to survive. So we plant older plants, of appropriate species, grown a little faster in milder climates. We plant them well, care for, fertilize, water, mulch, prune, train, and, sometimes, even protect them for a few seasons.

We do not love tree wrapping and it is excessively used, but 2-3 years of helping new plants adjust to our harsh environment (so they'll survive another 20-90) saves everyone time, disappointment and money.

•) **Water** slowly, thoroughly and infrequently in Fall. Newly planted trees and shrubs should be watered once a week through October. Maple, Birch and Alder are particularly susceptible to drought injury in the late fall and winter. Always send your garden into winter with moist soil. The last deep watering is often around Thanksgiving. Even dormant trees need water, especially new plantings, so, if we have no substantial rain or snow, water at least once a month, even through the winter.

•) **Fall Feeding** - **Biosol** organic fertilizer is the best "winterizing" fertilizer we have used. The organic materials in **Biosol** improve our poor mineral soils and feed beneficial microbes in the soil that release nutrients for the plants. **Biosol** works in association with **G&B** bioactive fertilizers. We use **G&B** fertilizers to feed and inoculate the soils at planting time and to feed during the growing season.

•) **Winter-Damage** - Some stems not sufficiently dormant before hard frosts (because of late summer chemical fertilization, excessive fall watering or very poor weather) will die back. Essentially, the windows and doors of tender new growth are not properly shut for winter. We generally recommend reducing irrigation starting in late August to let plants know that winter is coming. When hardy plants freeze, water moves from inside to outside the cells' walls, into the intercellular spaces. As this happens, the solutes in the cells increase and, as with salt water, the freezing temperature drops. During periods of dry-cold, the frozen moisture between cells (it helps protect the cells) can sublimate away (ice to vapor in this case). Without protection, the little remaining supercooled moisture inside the cells dries up resulting in irreversible cell death by drought (much freeze damage is actually drought).

Our high elevation winter sun can damage thin-barked deciduous trees lacking lower branches. The trunks of trees absorb the sun's heat and thaw-out during the day; when the sun sets, temperatures drop so rapidly that water is trapped inside. That water turns to ice and the cells rupture and die. We use and recommend tree guards.

Damage can also be caused by reflected heat, artificial warmth (from dryer vents, etc…) or when plants are simply not suited to this climate (i.e. "annual" trees from box stores' "annual tree" sales).

•) Protecting Trunks - It is important to protect the trunks of young trees with tree guards. Polymer tree guards work very well. They protect against winter sun, rodents, rabbit, and deer damage. The grid shades the trunk, allows air movement and looks good year round. Check guards annually to prevent girdling.

•) Winter Protection - Those who reason that they can protect non-hardy plants from the cold of winter with a blanket of mulch or a wrapping of cloth are mistaken. Within a few hours, the ambient cold will penetrate any covering. Plant mountain cold-hardy species in the appropriate location. Afternoon winter sun is one of our most dangerous threats and we are often choosing planting locations to avoid that exposure.

•) Mulch - Mulch is essential, even for the hardiest plants. Lay 3-4" of loose organic compost out well past the drip-line of every tree. Winter mulch offers the roots and other soil inhabitants (microbes) protection from sun, wind, desiccation, and from temperature swings (freezing-thawing), not from cold. Use **Gromulch, Bark Mulch** or wood chips. Good rules of thumb: You should not be able to see any bare dirt closer than 10 feet from your tree or shrub - or - ***"Dig the hole two to three times as wide as the rootball and always mulch three to four times as wide as the hole."*** - or - ***"No bare soil!"*** **-**vn It is just as important in summer and it provides the raw materials for keeping your soil healthy.

•) Antitranspirant - WiltStop and FreezeProof are antitranspirant sprays that can help protect new plants, broad-leaved evergreens, and susceptible conifers from freeze-drying during the winter. We treat the entire nursery, twice each fall, to prevent loss.

•) Tree Staking - (if not installed at planting) Before our soils freeze and snows fly, install one sturdy **2" x 10' treated lodgepole stake** placed just outside the rootball on the west-southwest side of your new trees (2 stakes are used in flatland high wind areas, not in snow country). Use double strands of **heavy-duty (1" x 8mil) Villager Brown tree tape** to loosely tie the trunk of the tree to the stake in 2 or 3 places. Use loose figure eights and trim excess. We use stakes to support trees properly until they produce enough strong wood to support themselves. Strong trunks are promoted by summer movement. Duration of staking depends on the species and the planting location.

•) Tree Wrapping - In fall, **after** the leaves have fallen from your more brittle or vulnerable new trees and shrubs, tie them up for the winter. Wrap the tree tightly to itself, with **heavy-duty tree tape**. Tie the tree tape to the stake below the lowest branch, then wrap up the tree tightly to itself, pulling in branches as close as possible, all the way up to the height of potential deep snow, tie off, then wrap down the tree and the stake, pulling the wrapped tree tightly to the one stake.

We do not recommend wrapping trees for more than 2-3 years but some locations will obviously require tying much longer (next to driveways, roof-sheds, etc…).

In extreme snow load areas, and with young conifers, an extra bamboo stake can be tied up the center of the tree to splint the leader for the first few winters.

The above ground portions of cold-hardy trees and shrubs are not growing in winter. The cells are alive in a dormant state and energy is stored in the stems and trunk, but even small pruning cuts made in fall won't seal over until early spring because they are "asleep." Virtually ALL of a tree's energy is underground in fall and winter when roots are very actively growing and expanding. **There is no damage whatsoever to shrubs or trees when they are tied for winter, when necessary.**

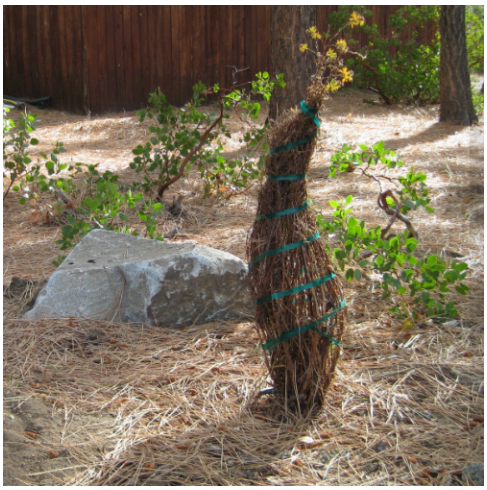
•) Pruning - Remove dead wood, broken branches, and correct any severe structural faults such as low hanging or leggy branches that may break in the snow now. Remove unwanted sprouts from the base of grafted trees (leave all lower branches).

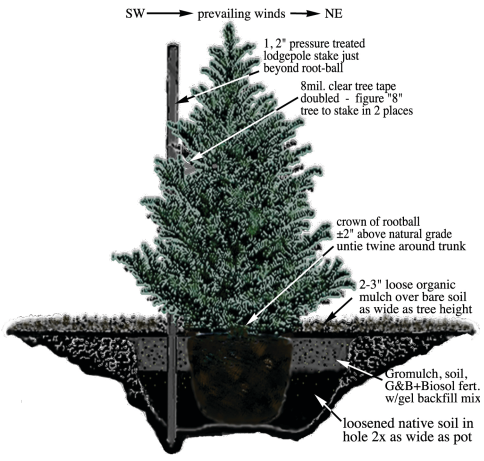
Perform structural pruning and hedging in late winter and summer. Pruning for the first few years will create a dense habit in shrubs and stout branches, strong branch shoulders and sturdier trees that will be better adapted to heavy snow loads without tying. With virtually all of a plant's metabolism engaged in root growth below ground, fall pruning cuts don't begin to seal until late spring (imagine you have a huge cut on your arm in November and must wait until April until it starts healing). Plants don't heal, but when actively growing, they do seal pruning wounds rapidly. Pruning cuts made in fall often die back and offer easy entry for disease-causing organisms. See: Young Tree Training Que Card

•) Untying Trees & Shrubs- Early May is a common time for local gardeners to begin removing the tree tape.

Use care when untying your trees and shrubs that may have begun to grow so as not to knock off any buds.

"Never" and "always" are seldom-appropriate adverbs for Gardening. The realities of your life, your timing or your landscape may preclude "best practices" but it seldom means the death of a garden. Once established, cold hardy plants are pretty resilient.




SW
prevailing winds
NE
1, 2" pressure treated lodgepole stake just beyond root-ball
8mil. clear tree tape doubled - figure "8" tree to stake in 2 places
crown of rootball ±2" above natural grade untie twine around trunk
2-3" loose organic mulch over bare soil as wide as tree height
Gromulch, soil, G&B+Biosol fert. w/gel backfill mix
loosened native soil in hole 2x as wide as pot