

“Winterizing” Your Garden

Saturday Class, Mid-October

Prepare your garden so well this fall that it will rise healthy and vigorous in Spring. Cut back perennials, tie trees and shrubs, prepare your lawn and “Fertilize with Biosol in Fall”.

While it is still the best time to plant trees, shrubs, perennials and bulbs, it is definitely time to begin putting much of the garden to bed before winter. Prepare for winter by harvesting, cleaning-up, cutting-back, staking, tying, wrapping, mulching, fertilizing (organic/slow-release) and putting away tools, etc... (“winterizing”).

Watering - Reduce watering in late August & early September to let your gardens know winter is coming. This will increase your plants’ hardiness and improve the fall colors. Once fall colors begin to show increase watering and do not let your plants dry out. By October, **water seldom, but water deeply** once (maybe twice) a week. New plantings in sunny, dry locations may need additional water even in winter. **Water at least** once a month in winter, if we have no substantial rain or snow. *Water to encourage roots you want.* (see also **Antitranspirants**).

Bulbs - **Bulbs should be planted now**, before the soil freezes too hard for digging. **It is no big deal to move a little snow out of the way.** Planting with **Biosol** and/or **bone meal** will help your bulbs flower better in the **spring after next**, months from now (that’s right, *spring after next*). Plant bulbs in rich, well amended, loose soil. Plant in masses of single varieties for the best displays. Many rock-garden bulbs can be tucked into soil pockets of rock walls, along paths, or in planters. Small bulbs are terrific with wildflowers. Protect tulips from squirrels with Plantskydd, predator urine, natura (systemic repellent), stainless-steel mesh, hardware cloth, chicken wire or sharp gravel (**Biosol** may also help).

Perennials - **Planting, dividing and transplanting perennials now gives you a huge jump on spring.** When you are done planting it is time to put them to bed. When the foliage dies, cut back the stalks and dead leaves to 4-6" inches for neatness and disease prevention. The stalk stubs will catch snow and pine needles and will shade the plant’s crown. For evergreen perennials, biennials and perennials with lush fall basal growth (candytuft, Canterbury bells, catmint, hollyhock, lupine, oriental poppy...) remove only the dead material. Cover marginally hardy perennials with pine needles and evergreen boughs, after the soil freezes, to minimize freeze-thaw cycles.

Trees and Shrubs - **Plant or transplant any trees and shrubs while the soil is still workable. Deciduous trees and shrubs put on as much as 80% of their annual root system expansion in the fall. Your plants will be far better off than if you wait until spring.** Older established plants that need moving can be root-pruned now to be moved in early spring or next fall. Prune half of the roots now so transplant shock will be reduced later.

Remove any dead wood and correct any severe structural faults such as low hanging or leggy branches or competing leaders that may break in the snow. Remove any unwanted sprouts from the base of fruit trees (leave lower branches). **Spring is a better time for major pruning; summer is best for heading-back and hedging.**

Winter-Damage - Besides the obvious crushing of some plants by snow, other plants may suffer because stems are not sufficiently “hardened” or ripened in the fall (*they can be unfit to survive winter*). Essentially, the windows and doors of succulent growth are not properly shut for winter. When plants freeze, water moves from inside the cell to the intercellular spaces. As this happens, the solutes in the cells increase and as with salt water, the freezing temperature drops. During long spells of dry-clod, the frozen moisture *between* the cells (which also helps protect the cells) can sublimate away (ice to vapor - *and vapor to ice*). Without protection, the little remaining super-cooled moisture *in* the cells dries-up: irreversible drought and cell death. (*Freeze damage is drought*).

Winter damage can be a result of late season chemical fertilizing and excessive late summer and fall watering, early HARD frosts or extended summer weather. Damage can also be caused by reflected heat or artificial warmth (from drier vents, etc...). or plants are not suited to this climate (*i.e. “annual trees” from “box stores’ “annual tree” sales*).

Winter Wrapping - We *may* wrap broad-leaf evergreens (holly, Rhododendron) with **row-cover** to shade the foliage from winter sun (see picture at bottom) that might increase chances of snow damage. Non-hardy plants cannot be protected from the cold of winter with a blanket of mulch or a wrapping of cloth; within a few hours, ambient cold will penetrate any covering.

Antitranspirants / Antidesiccants - Reduce Winter Injury and freeze damage that we see over dry winters.

Antitranspirants are used throughout cold regions of the world in gardens, farms, parks and golf courses to prevent winter injury. A product like **Cloud Cover** or **Wilt Stop** will act as a sealant to prevent desiccation of plant tissues and can significantly reduce winter injury on trees, shrubs, sub-shrubs, perennials and even groundcovers and turf, especially new plantings. If you have plants exposed to intense winter sun, wind and low or blown-off snow, consider using an antitranspirant.

Protecting Trunks - Frost cracking is caused by extreme changes in temperature. The trunks of young deciduous trees that have not yet developed corky bark are the most susceptible (especially: apple, cherry, hawthorne, pear, golden chain, mountain ash and maple). Our intense, high elevation, late winter sun warms the south-southwest side of trees (up to 80°F) during the day so that the tissues thaw and allow the cells to swell with water (it also causes moisture loss by evaporation from those areas). When the sun goes down, temperatures drop too quickly and water freezes inside the cells, causing the cells to rupture and the bark to split. Trees suffer freeze burn during periods of deep cold and bright sun. Even if temperatures drop slowly, the already desiccated tissues may succumb to drought. When plants freeze, most of the water in cells is drawn into intercellular spaces where it freezes and helps protect the little super-cooled moisture in the cells. In periods of deep cold and low humidity (often here), the ice between the cells sublimates leaving the unprotected cells to dry-up. It is important to protect the trees by painting the trunk with white latex paint or **wrapping with corrugated plastic trunk wraps, trunk mesh, cloth wraps or bituminous paper**. When planting trees, orient the lowest branches to the southwest (for shading the trunk). The plastic trunk protectors and bituminous paper should be loosened or removed during the summer growing season. Plastic barriers also protect trunks from the ravages of rodents, rabbits and deer that will eat bark during the winter.

Tree Staking - Mountain gardeners use just one sturdy stake, outside the root ball of their tree. 2 stakes are used for summer staking in areas of high-wind and no snow. Position the stake to the southwest of your tree or shrub or between the plant and the source of the most snow (roof-shed, snow blower). 10' x 2" treated lodgepole stakes are the strongest and longest lasting.

Tree Tying - After all the leaves have fallen from your more brittle or vulnerable trees and shrubs it is time to tie them up for the winter. Using **heavy-duty (1" x 8mil) brown or clear tree tape**, start by tying 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 to the top then wrap down the tree, pulling the wrapped tree tightly to the one stake.

Prune your trees and shrubs in spring and summer in order to encourage a more stout habit with strong branch shoulders so that tying will not be necessary for more than the first 3-4 years. Some situations will obviously require tying much longer.

Lawns - Water less frequently as mentioned above. Mow and bag the lawn once, late, with the mower set on a low (2") setting. A lawn mowed too closely can suffer winter drying. **Top-dress lawns with a light layer of Topper (2cu.ft. / 200 sq.ft.)**. Use an organic fertilizer (**Biosol**) in November. Many have had excellent success with lawns by only top-dressing with **Topper (compost) and Dr. Earth fertilizer in spring then with Biosol in fall...** no other fertilizers. Hundreds of gardeners using Biosol (*at the recommended rate*) have also reported a dramatic decrease in vole damage over winter. For sod lawns and lawns with poor soils, fall aeration (deep-tine/core aeration) is a good idea before topdressing, liming or fertilizing. Fall aeration has been used to repel voles as well.

Wildflower Seed - "Wildflowers" occur in many types of wild gardens. A "meadow" is a complex ecosystem that develops in certain soil types with specific moisture content and a very slow succession of plant species over perhaps, thousands of years. Some people have conditions on their property that will actually foster a meadow, most of us do not. For the vast majority, wildflower gardens are colorful flower gardens with a mixture of native flower and grass species. We make several seed mixtures at the Villager. **Mt. Native Mix** is a blend of wildflowers from mountains and high plains, from the Sierras and Rockies to the Alps. **Truckee Garden Mix** is a mixture of wild and ornamental species from all over that create a riot of color and look more like a cottage garden. Our **Strictly Native Mix** contains a variety of local Sierra natives from several ecosystems. Many people mix these with our **Native Grass Blend** and/or our **Fine Fescue Meadow Blend** (*like the grasses at the new community/rec. center*). Most homeowners are looking for plants that will perform well (grow and bloom) with minimal water and which will reseed readily or perennate (come back year after year). We also have several restoration/revegetation mixes.

The best results will be achieved if you remember that this is a garden. Start with the soil. Take time to work in some organic material to hold moisture and organic nutrients for the plants (**Gromulch, Biosol and Dr. Earth**). If you are working with a steep bank, you'll have to use some form of erosion control to stabilize the soil before you work it and plant it. For non-irrigated sites we like to say spread them over the first 4" of snow in late fall and/or over the last 4" of snow in very early spring (*and spread a little today for good measure*).

Mix the seed with **Topper** and spread the mix evenly or in patches over the area you are growing; cover with a thin layer of **Topper** and then pine needles. Water is the most important ingredient. Plants need water to survive. When Mother Nature doesn't provide it, you must. The better the soil the better the nutrient and moisture holding capacity.

In the second year of a wildflower garden some of the plants will return as perennials and the dead material from last year's annuals provides shade on the soil so that the seedlings have an easier time getting started. You might want to weed out undesirable species or you may just let it go. **Bulbs are an excellent addition to all meadows!**

Preparing Soil - Fall is a great time to prepare soil. Areas for spring plantings should be aerated with a spading fork and mulched with mature composted **Amend or Gromulch** (*which will insinuate into the soil over winter*). Spade and turn **new** soil, exposing insect pests to the elements and allowing frost action to soften the structure with less effort on your part.

Protecting Soil - Mulch originally meant merely an application of manure or other loose compost spread thickly on the soil surface around new plantings to preserve the soil moisture and improve the soil... slowly. This is still true but mulch may also be any material that protects the soil ecosystem and that prevents weeds including pine needles or rocks. We like a layer of loose, rich **soil building compost**, spread in late fall or early winter, over frozen or freezing soil around all of your trees, shrubs and perennials in order to keep the soil frozen. This protects plants' shallow roots and soil microbes from the destructive effects of repeated freeze / thaw cycles that could damage roots or lift plants out of the ground ("heaving" of the soil). In the case of hardy bulbs, late mulching of the frozen crust, helps keep voles and squirrels from burrowing and eating some bulbs.

Mulch also protects the soil from drying. Mulch helps keep moisture available to the plants throughout the winter. Like a hibernating squirrel, still breathing, a plant's cells still respire in winter.

Fertilizer - Now is a perfect time to apply granular organic fertilizers. Most organic fertilizers dissolve slowly and will not disappear into the groundwater. They depend on soil microbes to digest them before their nutrients are available to plants. Naturally, conditions that allow for microbial activity coincide with conditions that favor plant growth (shoot OR root). Applied now, organic fertilizers like **Biosol or Dr. Earth** will be available to the plants into late fall and again in very early spring for the earliest root growth.

Bone Meal (and especially Fish Bone Meal) is an excellent slow releasing source of phosphorous and other nutrients. It has the additional benefit of helping raise soil pH very slowly over a very long period of time. It is great for bulbs and very helpful to flowering perennials, shrubs and trees. **Soft Rock phosphate** is an alternative phosphorous source if you have a problem with dogs digging in your garden. (*Or just use Biosol*).

Lime loving (calcicole) plants - Lime is a compound of calcium, which as **an amendment** changes the chemical and structural characteristics of a soil. Liming makes acid soils less acidic or "sweeter" (raises the pH). It also alters salts of potassium, phosphorous and other essential plant nutrients into forms that are easily used by plants. Lime may aid in clay breakup, reduce sand compaction and its important to soil bacteria who are essential in healthy soil. **Dolomite limestone, oyster shell flour and hydrated lime** are all used in gardens and fields.

Most vegetables and many flowers benefit if lime is spread around in the fall and allowed to "mellow-in" over winter, especially these: Alyssum, asparagus, beet, bluegrass lawn, cabbage, clover lawn, Delphinium, Dianthus, Geum, Iris, lettuce, lilac, onion, Paeonia, pea, Phlox, rhubarb & sweet pea.

Acid loving (calcifuge) plants may just be plants that prefer a fungal compost that tends toward acidic or they may require a very low pH to obtain nutrients. We like to add **Cottonseed Meal** in the fall to acidify the soil while feeding the soil biology. We use **MaxSea Acid** in spring and summer. Try a fall application of **cottonseed meal** on these: azalea, Baptisia, blueberry, Chrysanthemum (Shasta Daisy), fir, flax, foxglove, lupine, lily, mt. ash, oak, ostrich fern, pine, raspberry, Rhododendron, serviceberry, spruce...

Overwintering Potted Plants - For tender plants, bring them into your greenhouse. no? Your solarium then. no? Your sun room?... heated garage by a window? It can be tough. **For hardy plants**, keep them outside in the shade all winter and keep the pot and soil covered with snow for insulation and moisture. If the pot is in sun and immovable, do what you can to shade the south and west sides of the container and keep the soil covered with snow. Repeated freeze - thaw cycles will ruin roots and kill plants. Keep the roots frozen.

Insect and Disease Prevention - If you have problems with diseases on your trees or shrubs it is best to rake and remove or burn the leaves. Fall and early spring applications of an oil spray will help to smother insect eggs that might over winter. Lime-sulfur sprays are for dormant-season use and aid in the prevention of insects and diseases. Dormant sprays are especially effective against spider mites that ravage many gardens in hot summers.

Winter Color - Winter gardens need some interest and winter appearance should be considered when planning the garden: Red twigs of mt. maple, red-twig dogwood or wild rose... Berries of cranberry bush and crabapple... The sense of life from evergreen holly, mugo pine, nest spruce, native juniper, blue spruce, Norway spruce, lodgepole pine, incense cedar, Jeffrey pine, huckleberry oak, mt. mahogany, cotoneaster and even manzanita .

For more information please read our **"Tree Planting"** and **"Evergreen Care"** handouts or attend more of our classes.

It is gardening - it isn't rocket science - there are a thousand variables affecting each garden and trial and error is part of the fun of gardening. Watch your neighbors and the neighboring wild gardens. There is usually some "best option" for what to do but decisions are made in the context of life, available time, money and weather (which is particularly unpredictable here).

At Villager Nursery, we do our best to bring you "research you can trust and information you can use"... or "we've killed thousands of plants in our own gardens so that our clients won't have to."

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