

## Winterizing landscapes

### Mulching, pruning and barricading are as important in the war against winter as in the battle against summertime problems.

■ The severe winter of 1993-94 damaged many landscapes across the Midwest.

"The record-breaking temperatures, deep snow and ice storms took their toll on almost everyone's landscape," says Dr. J. Robert Nuss, professor of ornamental horticulture in Penn State's College of Agricultural Sciences.

"The deep snow provided some insulation, but many plants still were not hardy enough to withstand the cold."

During the past decade of mild winters, many homeowners planted broadleaf evergreens and other plants that couldn't stand the cold. Leaf and flower buds and stems and branches were all destroyed.

"Some marginally hardy plants were killed down to the soil line, even though they were protected by snow," says Nuss.

The best way to plan for a hard winter is to protect the plants. Here are

some tips from Charles Owen, formerly with the Holden Arboretum, Mentor, Ohio, now horticulturist at the Cleveland Metroparks Zoo:

**Mulching**—Mulch is the best thing you can do for landscape plants. It helps moderate the soil temperature and moisture, which reduces the chance of injury by desiccation. Keep the soil cool a bit longer in spring, to delay bud break and thus avoid damage from a late frost.

Mulch will also reduce frost-heaving, which is caused by the soil freezing and thawing alternately. Frost-heaving occurs mostly with herbaceous material planted in the fall.

Organic material is preferable for mulching, but must be replaced every few years.

Apply mulch to a uniform thickness over the entire bed or under the drip line of trees. The thickness of the layer depends on the material, but 2 to 3 inches is right for most material. Use less if you are using something that mats down, like fresh leaves or lawn clippings, and more if you use fluffy material, such as straw.

Inorganic materials—black plastic, stone or other landscape fabrics—don't moderate changes in soil temperature as well as organ-

ic mulches do.

Whichever mulch you use, pull it back from the stem or crown of plants. The moisture-retaining properties of mulch can otherwise be fatal, as rots and molds can enter at the crown if this area is too wet.

**Pruning**—A severe form of weather-related plant damage is breakage caused by wind, snow and ice. Winter breakage occurs mostly on evergreen plants, especially large ones with a flat-topped, spreading habit.

Deciduous trees are often broken up by the wet snows sometimes seen in November.

You can greatly reduce breakage in the long run by pruning young trees so they grow to be pyramidal. Also, prune branches with weak mechanical attachment, such as narrow crotches.

On older trees, and trees that will not grow in pyramidal manner, cabling and bracing are the only way to reduce damage from ice and snow. You can create wind breaks in order to reduce breakage throughout the year.

Winter injury is also caused by ice that forms inside plant tissue. This is seen most often after spring freezes and frosts, as plants come out of dormancy. The best advice in this case is to select and place plants properly.



### Advice for the mountain zone

■ "I don't think the Midwest has to irrigate during winter, but here, we have to make sure soil is moist and plants are hydrated," says Bill Carlos, horticulture program coordinator for the cooperative extension in Reno, Nev.

"Plants continue to lose moisture through their leaves, particularly evergreens. If we get a real dry winter, they will experience winter desiccation, as well as heaving and thawing of root ball; you have to insulate the soil with a three-inch layer of mulch."

Overnight lows in northern Nevada can descend to 10°F. or colder, depending on the winter. On any winter day, the temperature might fluctuate between 60° above to 30° below.

If you're in Colorado, northern Utah, Idaho or northern Nevada, read on:

✓ Select and plant cold-hardy trees and shrubs, adapted to inorganic, alkaline soils and a hot, dry climate.

✓ Select plants for their snow tolerant architecture: low, spreading habit and strong wood.

✓ Break up caliche (calcium carbonate) layers and hardpans prior to planting.

✓ Amend light and heavy soils with organic matter before planting.

✓ Mulch around the base of plants.

✓ Locate plants to avoid freezing, drying, winter winds and direct sun.

✓ Locate plants away from areas where snow accumulates or is piled up.

✓ Provide winter protection, if plants are exposed.

✓ Maintain plants in good vigor during the growing season.

✓ Replenish soil moisture before the ground freezes, but after the plants have gone dormant.

✓ Don't irrigate excessively, prune or fertilize late in the season. Let plants go dormant.

## WINTERIZING LANDSCAPES

### Winter pests

- Mice, rabbits, and deer take over in winter as insect pests lie dormant.

Mice and rabbits eat the cambium, the living tissue just under the tree bark. Look for this injury on low-growing shrubs, especially evergreens, and on young fruit trees.

If the cambium is removed from the entire perimeter—called girdling—everything terminal to the girdled site loses contact with the root system and dies.

So when the trunk is girdled, the tree's entire top dies.

Deer damage plants in two ways. First, they eat twigs, buds and leaves. Although this is annoying because it can deform landscape plants, the damage usually is not fatal.

The second type of deer damage is worse and sometimes lethal. When bucks rub their antlers on tree trunks, the cambium is destroyed. It takes several years for the tree to grow new tissue, but the bucks often return to rub the same

trees year after year.

Snow fences, chicken wire, hardware cloth or other fabrics can help protect plants from these hungry marauders, but they'll only work on individual plants. Deer can clear fences, and other animals can burrow under them.

—Charles Owens, the  
Holden Arboretum,  
Mentor, Ohio



Shrub damage caused by hungry deer. Holden Arboretum

## WINTERIZING LANDSCAPES

### A new whey to de-ice

- Salt used for de-icing roads and sidewalks causes conifer needles along some of the nation's

most scenic byways to turn brown. Around the home or beside well-landscaped parking lots, dissolved salt washes into the soil and can cause nearby trees to slowly die.

The good news is that researchers are trying to find ways to economically ferment cheese whey to produce calcium magnesium acetate, an effective and apparently harmless de-icer.

The *Wall Street Journal* says 20 billion pounds of whey are poured down the drain annually as waste. When perfected, however, the calcium compound will probably sound expensive to city officials. At a projected cost of \$300 per ton, it will seem to compare unfavorably to cheap salt, which sells for only about \$30 per ton. That is, until the aggregate damage from salt is calculated—a cost that some studies suggest required up to \$1000 per ton to rectify.

—National Landscape Association News

## Take-all patch springs up on Southern golf courses

**A disease that appears to be either brown patch or grub damage, but upon closer inspection is not.**

By James E. Guyette

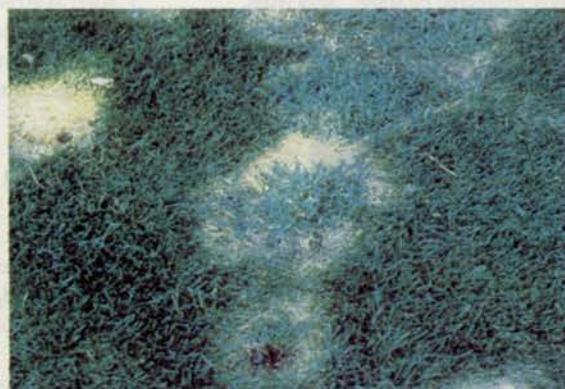
■ A relatively new turfgrass disease called take-all patch has been attacking St. Augustine and bermudagrass in Florida, Alabama, Texas and throughout the Gulf Coast states. The damage this fungus causes is similar to that of brown patch.

"Take-all causes costly damage to parks and golf courses, as well as to commercial sod farms," says Dr. Janell

Johnk, Texas A&M extension specialist, Dallas. It hits home lawns, too.

"Left untreated, the damage increases year-to-year, and ultimately it destroys an entire lawn or field," Johnk notes. "St. Augustine seems to be sustaining greater damage than bermudagrass. It's cropping up wherever grass is found," she adds.

Dr. Joe Krausz, Texas A&M plant pathologist, College Station, first identified take-all in Texas in 1991. The culprit is the fungus *Gaeumannomyces graminis* var. *graminis*. This same fungus is one of the three that cause spring dead spot in bermudagrass. "It's probably been here a



Take-all prefers alkaline soils.

long time, but we're probably just learning about it now," Krausz explains. "In the past, they would probably scratch their heads and attribute it to other things.

"The fungus prefers alkaline (high pH) soils. We're studying that now. It may be our mild winters have let this soil-borne disease get a foothold in  
continued on page 36

continued from page 34

become as severe as it is this year. And once you've got it, it's a real problem," says Krausz.

"The damage approaches epidemic proportions across the state, except for the desert areas," says Johnk. "Unfortunately, this fungal disease imitates brown patch and grubworm damage. What we use to treat for grubworms, for instance, has no effect on this disease. On the other hand, the appropriate chemicals to control take-all work on brown patch, but some chemicals for brown patch are not labeled for take-all."

The two fungicides labeled for take-all are fenarimol (Rubigan) and tridimefon (Bayleton). The best defense against take-all is a strong stand of turf. "It's a long-term management thing," says Krausz.

The best time to apply fungicides is in the fall, when the rainy season starts and evening temperatures dip to below 70°F. Local conditions usually help with timing.

"Don't use a fungicide unless you're sure that you have take-all, and then only at the right time—in the fall," says Johnk.

Adds Krausz: "These fungicides are most effective as preventive treatments and much less effective as curative treatments after the disease is established."

This disease is characterized by large irregular patches of dead turf, often ranging from a foot to several yards in diameter. Affected areas show irregular patterns as individual spots merge or as the disease subsides temporarily and weeds fill thinned areas.

Most visible in early spring and summer, damage usually occurs following stress, such as the first hot, dry days or after applying a quick-release fertilizer.

While take-all patch can be mistaken for brown patch or grub worm damage, a close look reveals several distinguishing factors. "It's a root rotter," Krausz explains. Entire stolons may be lifted easily from the turf. Once the roots are destroyed, they don't recover. Re-growth has to come from the unaffected edges of the diseased patch or new sod.

Brown patch, on the other hand, doesn't affect the roots, and the turf recovers when warm weather arrives. With brown patch, the base of the leaf

sheath is often slimy and rotted and the leaf pulls from the rest of the plant with a gentle tug. Although white grub damage looks similar on the surface, grubs will be found in the soil. Also, grub-damaged roots don't appear rotted.

"Turfgrass with a vigorous root system resists the damage from take-all patch fungus," says Johnk.

Recommended procedures to deal with the disease:

- Eliminate areas where water accumulates in low spots.
- Water only when needed. Infrequent but thorough watering is best.
- Use fertilizers that lower the soil pH, such as ammonium sulfate. Fertilize the last time in early September if nitrogen is needed, taking into account local climate conditions.
- Prevent thatch and aerate to alleviate soil compaction.
- Preventive fungicide treatments in the fall should be repeated for at least two years.

—The author, former editor of Lawn Care Industry magazine, is a frequent contributor to LM.

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