

## Gypsum can reduce salt damage to trees, turf

*We have a small snow removal operation. We use sodium chloride or calcium chloride-based products for deicing. I understand that gypsum can prevent or lessen the damage that these products cause to trees and turf. How is this possible? What products should we be using?*

—NEW YORK



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The most common deicing salt products are sodium chloride and, to a lesser degree, calcium chloride. You may find other products such as urea, rock salt, Safe-Step, magnesium chloride, potassium chloride, and Landscape Ice Melter. Their performance on snow and ice melting, and/or damage to nearby desirable plants varies.

The commonly used sodium chloride is toxic to plants in relatively low concentrations.

Gypsum contains calcium sulfate and is effective in reducing the potential for sodium injury to plants. Gypsum must be applied before injury occurs.

Salt injury can occur either from foliar absorption, or absorption through the roots. If gypsum is present in the rootzone during the time when sodium salt is being applied, the calcium in gypsum prevents sodium from binding to soil particles. Since the sodium is not held in the soil, it can be leached beyond the rootzone with rains, melting snow, or irrigation.

However, if toxic levels of sodium remain in the rootzone, it causes phytotoxicity and tis-

sue hydration. This is called physiological drought. Gypsum may not be helpful in minimizing salt damage to foliage if the salt is sprayed on the plant.

Apply gypsum before putting down sodium salts. This allows the the gypsum to solubilize and release calcium. Surface application of 50 lbs. per 1,000 sq. ft. should be sufficient.

Gypsum won't counteract the salt effect of calcium chloride. Although calcium chloride is not as harmful as sodium salt, too much can harm plants.

## Tree roots need protection from construction

*We're working with a large developer at a construction site which was previously a wooded area. We want to protect the roots of the remaining trees, as well as to prevent any further soil erosion. Suggestions?*

—MICHIGAN

There are no simple post-operation remedies!

The trees that you want to save should be fertilized well in advance of winter and prior to stresses caused by nearby construction. This will promote root growth. Protect the area within the dripline of the tree with a special fence. Try to keep heavy equipment off of this area.

If that's not possible, consider using some plywood or similar material to prevent compaction. Areas that are already compacted can be aerified, radial trenched and mulch, or vertical mulched. Avoid scuffing or injuring roots and bark.

To protect the exposed or

cut roots from low temperatures, consider covering them with soil and/or mulch. Mulch should not be more than three to four inches deep. Don't pile mulch up on the tree trunk.

Valuable tree root systems may be further protected with some sort of thermal insulating product. Reports indicate variable results and it may not be practical in some situations.

To avoid winter erosion problems, it's important to conduct construction operations with minimum land exposure. The bare ground should be revegetated to a temporary or permanent cover to avoid erosion. In some situations where no immediate development will be done, seeding with turfgrass, ground covers like crown vetch or clover might be beneficial for erosion control in slopes as well as in other areas.

If it's too late for seeding, consider dormant seeding or mulching. If using mulch, make sure to use an additive to provide additional protection. Seeds should be properly covered with mulch such as straw, polymer-based products, or Penn-mulch. Erosion problems may be a major concern if there are mounds of soil or slopes at the construction site. Erosion control blankets and mats provide excellent protection on steep slopes. Some can be purchased with seed and fertilizer within the blanket or mat. **LM**

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