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salt/and landscape plantings

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The removal of winter ice and snow by chemicals has generated much interest in the last few years. Although the chemicals maintain relatively ice-free walks, roads and streets, they do cause plant injury once they get into the soil. However, a number of other factors may also contribute. For example, too much fertilizer applied without properly watering it in, and restricted soil drainage, either because of high water tables or hardpans, may cause similar symptoms. All add to the problem by concentrating salts in the root zone where salt levels can, and do, increase to harmful concentrations.

Salt damage symptoms are frequently similar to those produced from drought or short-term water shortages. All plant parts—stems, leaves, flowers, fruits—become stunted; the establishment of plants by seed or transplants is difficult; and leaf tipburn and marginal browning frequently occur. These symptoms become most noticeable in areas where salts are allowed to accumulate. Consequently, planters and containers with inadequate drainage are problems. One must remember, however, that all soils are "salty" to a certain degree since they contain nutrients in the form of soluble salts.

The tolerance of plants to salt concentrations varies considerably. Tolerance may involve soil, climatic, genetic, physiological, and pathological factors, plus their interactions. Regardless of the factors involved, the only ways we may appraise the suitability of a plant is: 1) its survival when growing in salty soils; or 2) its yield of leaves, flowers and fruit on salty soils. When dealing with road salts, the gradual die-back and marginal leaf burning could indicate cumulative salt damage. However, such symptoms might mean something else also.

The solution to the problem is almost as difficult as defining the problem. This is especially true since salt damage resembles drought and fertilizer burn, and criteria used to measure salt tolerance are relative and somewhat dubious. Furthermore, ornamental woody plants are not harvested annually and would be susceptible to cumulative effects.

One of the solutions to the problem is to select and plant salt tolerant plants where salt is a problem. However, there is enough inherent variability within a plant species to render any tolerant classification a matter of relative judgment. Research was also conducted in many parts of the world under different soil and climatic conditions and, therefore, does not reflect a true tolerance. Even so, salt-tolerant plant selection is a means of overcoming the problem.

In Connecticut, the problem is associated with road salt applications or over fertilization of the garden without adequate irrigation. Suggested methods to alleviate salt-induced injury include:

1. **Leach salts out of the soil with large quantities of water.** The amount of water needed, however, is so large as to make its use prohibitive.

2. **Wash salt accumulations from the foliage.** The problem may be one of salt spray or splash from roadways. Besides, it is difficult to accomplish washing off during the winter.

3. **Use other materials rather than salt on drives and/or sidewalks.** Abrasives such as sand or ashes can be used but do not clear the sidewalk like chemical deicers. Urea has also been used successfully. This material does not pit concrete surfaces like salt, nor is it as likely to be tracked indoors. Since urea is a fertilizer, it might do some good for lawn and trees. However, it is expensive and is effective only to 11 degrees above zero. Urea mixed with sand is perhaps better than pure urea.

4. **Perhaps the best solution might be to install underground heating cable to melt the ice and snow.** This method can be so costly as to be prohibitive.

Therefore, one has the alternative of removing ice and snow by hand or using one of the labor saving means and face possible plant damage and/or death. The other alternative is to landscape with resistant plants in areas where the problem exists.

Woody ornamentals hardy to Connecticut showing moderate or good salt tolerance.

GOOD	MODERATE
English Oak	Arborvitae
Silver Poplar	Golden Willow
Gray Poplar	Ponderosa Pine
Black Locust	Green Ash
Honey Locust	Eastern Red Cedar
Osier Willow	Japanese Honeysuckle
White Poplar	Box Elder
Scotch Elm	Siberian Crab Apple
Russian Olive	Pyracantha
Tamarix	Blue Spruce
Hawthorn	Douglas Fir
Red Oak	Balsam Fir
White Oak	White Spruce
Mulberry	Beech
	Hard (Sugar) Maple
	Cottonwood
	Aspen
	Birch

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