KINGMAN IS GROWING! Column

Remove harmful soil salts in gardens and landscapes

By Laura Murphy, Mohave County Master Gardener

Salts in the soil are a problem for gardeners here in the Desert Southwest. Salt can occur naturally. In some parts of the Southwest, salt levels are so high that no plants will grow, excepting maybe saltbush and salt cedar. Salts also come from the fertilizers we apply to our gardens and landscapes. But probably the biggest source of salts in the soil is our irrigation water. Yes, the water we drink and use to irrigate our plants has salts. Certainly the levels are small, only about 350 parts per million in tap water - salty ocean water has 20,000 ppm. However, over time, these small amounts of salt can accumulate in the soil and cause harm to many potted, garden and landscape plants.

Salts harm plants in two ways. Leaves, stems and roots can dehydrate when soil salts become so high that roots can no longer draw in water. As this occurs, even though plants are being watered they wilt from an inability to absorb that water. When salts are absorbed by the roots, levels may become toxic to the plant.

Plants sprayed with water are more prone to salt injury than are plants watered by drip irrigation. That's because as water dries on the leaves it leaves behind a minute amount of salt. As the plant is continually watered and the wetting and drying cycle continues, more and more salt accumulates. The leaf tips and eventually the entire leaf will dehydrate and turn brown.

Constant overhead watering is generally not recommended for plants, with the exception of Bermuda grass lawns. Bermuda grass is very salt tolerant.

Native Sonora desert plants are, in general, tolerant of moderate levels of salt in the soil. But most of the garden and landscape plants we grow that are native to other regions are not salt tolerant. Even small amounts can cause plant illness. Browning of leaf margins, yellowing and
dropping of leaves, stunting of growth and eventual death can result from excess salts. Landscape plants most commonly affected include; roses, plumbago, hibiscus, cape honeysuckle, privet, and crape myrtle. Citrus and other fruit trees are also affected.

As for vegetables and flowers, few are tolerant of even moderate levels of soil salts. The only commonly grown vegetable with good salt tolerance is beets. As for flowers, Madagascar periwinkle is the most salt tolerant.

Excess salts can be removed from the upper soil levels, where plant roots are, by dissolving them and flushing them down below the root zone with lots of water. While monsoon rains are occurring it’s easier to move the salts because the soil, in many locations is already moist. A large amount of water should be slowly applied to those plants suffering from or most likely to suffer from salt buildup. If your landscape has bubblers, the easiest way to accomplish this is to run your bubblers several cycles to apply enough water to push the salts deeper in the soil, past the roots.

You can also use a soaker hose. It can be purchased in all garden supply and hardware stores. Its porous rubber tubing allows water to slowly seep out. Purchase enough hose to crisscross or spiral the hose out over the area to be leached, leaving a space of two to three feet between the tubing.

Connect the soaker hose to an outside hose bib. Open the hose bib valve just enough to have droplets of water coming out of the soaker hose. If the valve is opened too much, the force and volume of the water flow will cause water to spray out the soaker tube, rather than drip out. For larger shrubs and small trees it may be necessary to let the soaker hose run the better part of a day to dissolve and wash away the excess salts.

House and patio potted plants are also prone to damage from excess salts. Above all, do not allow potted plants to sit in their drainage water. Salts can accumulate to high levels in this drainage water. If pots are sitting in saucers, remove the saucers or fill them with gravel so that pots are setting on the gravel above the drainage water, not in it.

At least twice yearly, water potted plants with large amounts of water and allowing the excess to run out the drainage holes. If there are salts present in the soil they will be washed out of the pots.

Finally, any salt-sensitive plants, whether potted or planted in the garden or landscape, should be flushed of excess salts at least twice yearly. The best times to do this are during the summer monsoon season and again during the winter rainy period (January - February).

*Information for this article from John Begeman of the University of Arizona. For more information, contact the University of Arizona Mohave County Cooperative Extension, 101 E. Beale St., Kingman or telephone (928) 753-3788.*
Saturday, March 7 the University of Arizona Mohave County Cooperative Extension Kingman area Master Gardeners’ will be presenting a “SPRING VEGETABLES” workshop at 101 E. Beale Street, Kingman, from 9:00 – 12:00 PM. Seating is limited so please call 753-3788 for your reservation.

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