

### Plants & Salt

Salt is harmful to many plants—even lethal to quite a few. Salt damage can come from wind-driven salt in the air and sometimes even the rain in coastal areas or from salty well or pond water used for irrigation. Generally, wells on the barrier islands contain varying amounts of salt, though more and more wells even in mainland Brevard County are beginning to register moderate to high amounts of salt because of population growth and the resulting increased demands made on the Florida aquifer. While most free-flowing artesian wells tend to be high in salt, there seems to be no correlation between salt content, well depth and the presence of sulfur, iron or other elements in the well water.

As with all aspects of nature, there is an incredible diversity of plant responses to salt in the environment. Some have no problem at all with salt. Consider all the plant life at the bottom of the sea! Many grass varieties also thrive in very high salt conditions (over 3000 parts of salt for every million parts of water or *ppm*) in the form of rain, ocean spray or human irrigation. Mahogany trees, some oaks, royal poincianas (Flamboyan), sea grapes, plumeria, St. Augustine grass and a large number of other trees, shrubs and plants are also very salt tolerant.

Some plants are only somewhat tolerant of salty conditions. Citrus, for example, can tolerate up to about 2200 to 2300 ppm of salt on their root systems, a fairly high amount. But even a more moderate 1500 ppm salt sprayed on their foliage can kill them. Finally, there are those plants that tolerate little to no salt at all, like azaleas, crape myrtles and most orchids.

### Salt Damage

In a process called *exosmosis*, salt causes water to move out of the plants; the water-depleted leaf tissue turns brown and looks “burnt.” Direct contact with salt from ocean breezes or the overspray from salty well water on plants not tolerant of salt begins with burn spots throughout the leaf and progresses to complete leaf burn and eventual leaf drop. Unusually harsh storms sometimes result in salt spray on plants that are normally out of harm’s way. These can often be saved by rinsing with city water to remove the dried salt on the plant. Burning around the edges of leaves usually results when salty water is applied to the roots (but not the foliage) of plants not tolerant of salt.

Salt damage is more acute during dry spells. With no rain to rinse the leaves and flush the soil, salt builds up on or in

both, causing damage. Increased salt damage also occurs near the ocean, back from the dune line. Here, live oaks, magnolias and other moderately salt-tolerant plants normally do well because the light salt that accumulates on them from strong winds is washed off by occasional rains. Without the rain during dry periods, salt instead builds up on the leaves and can cause damage. In many cases, this problem can be averted by occasionally rinsing the affected plants with city water.

A plant’s response to salt can be quite varied, depending on the tolerance level of the plant and the amount of salt in the water. Some plants, like the azalea, will die quickly in a salty environment. Others, like most citrus trees, may survive for some time, although their lifespans are usually cut short and their vigor, production and fruit quality is often affected.

### Who Should be Concerned?

When it comes to plants and salt tolerance, the most successful outcomes result from choosing plants that can tolerate the salt, if any, in the air and water around them. Those who live right along the salty Atlantic are the most challenged. Only plants that are highly tolerant of sea spray will work, though plants not tolerant of salt are often successfully grown on the protected west side of a building, fence, larger plant, etc.

# Rockledge Gardens



2153 S. U.S. #1 • Rockledge, FL 32955

Open Mon–Sat 9 am–6 pm • Sun (Feb–May) 11 am–4 pm

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Next are those residents of the barrier islands who use well water for irrigation. Even plants on the protected west side of the house are not safe from salt damage if the contents of the well used to water them contains salt. Since very few wells in Merritt Island or the beaches are salt-free or even low in salt, all residents of the barrier islands using well water are advised to have their water tested.

Finally, those in mainland Brevard who use well water to irrigate their plants, and especially those planning large landscape investments, should have their water tested for salt.

### Salt Testing

Rockledge Gardens will check the salt content of your irrigation water FREE of charge; the test takes less than a minute. We will tell you in parts per million (ppm) how much salt your water contains. To collect the best possible sample, let the well run for 10-15 minutes. In a small to medium-sized container, collect a sample from the same hose, line or spigot that has been running. For those who draw irrigation water from a pond, avoid collecting a sample from the shallow water's edge.

Based on your test results, we suggest you choose your plants based on the following criteria.

**High salt tolerance:** more than 2400 ppm salt  
Plants with high salt tolerance can withstand most salt conditions including exposure to ocean winds or high salt content in irrigation water (up to 3,500 PPM salts).

**Medium salt tolerance:** 1200 to 2400 ppm salt  
Plants with medium salt tolerance will not tolerate salt spray, but can withstand a moderate amount of salt in the irrigation water.

**Low salt tolerance:** less than 1200 ppm salt  
Plants labeled as having low salt tolerance will tolerate little to no salt in any form. They are best planted in locations not exposed to ocean or river winds and irrigated with water with less than 1,500 PPM salt.

Finally, keep in mind that there are continuums within the three groups above—levels within levels. For example, among low salt tolerant plants, orchids can be damaged when salt levels exceed 300 ppm, while most azaleas can tolerate up to 1100 ppm salt.

Please consult our Salt Tolerance Plant List for a good basic list of plants with both high and medium salt tolerance.

## Rockledge Gardens SALINITY TEST RESULTS

Our test indicates that your water  
contains \_\_\_\_\_ ppm salt.

Use of this water is  
\_\_\_\_ recommended  
\_\_\_\_ recommended with some caution  
\_\_\_\_ recommended with great caution  
\_\_\_\_ NOT recommended.

Date: \_\_\_\_\_

Tested By: \_\_\_\_\_

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