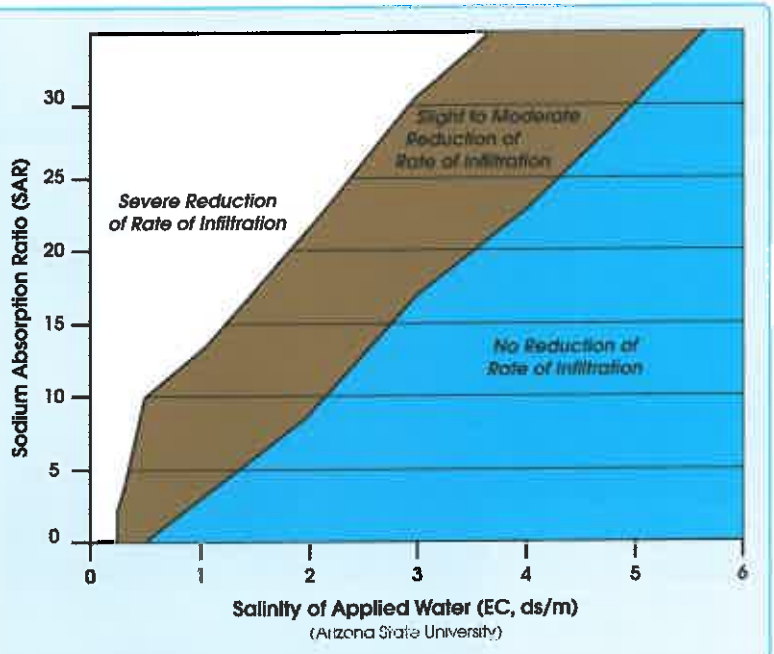
Water Made Easy

By Jim Miller, Sales Manager, AQUA-AID and VERDE-CAL Products

Use this chart to help you better understand how soil issues can arise when irrigation water quality deteriorates. There are so many products available to the turf manager today, but are they really necessary? By knowing your Sodium Absorption Ratio (SAR) and your Electrical Conductivity (EC), you can use the chart to determine what you should be doing based on the potential for problems in the soil.



Treatment Prescription

Gypsum and/or Soil and Water acidifiers. Acid water treatment REQUIRED.

Gypsum and/or Soil and Water acidifiers. Acid water treatment potentially not needed.

Gypsum and/or Soil and Water acidifiers as needed.

Many times I see a facility invest a lot of money in equipment or product that they may not necessarily need. Florida's overall weather patterns are quite easy to predict! (I may be the first to actually believe this.) By this I mean that Florida has a very predictable dry season and an equally predictable wet season. The dry season calls for every turf manager to be ready to amend soils properly to offset potential salt problems in the soil. The wet season usually does not provide enough flushing rainfall to adequately exchange the sodium built up on the soil colloid if those soils haven't been amended properly during the dry season.

I have found that it takes 85 lbs per acre of soluble calcium derived from calcium sulfate to establish a "base level" of calcium sulfate to adequately flush damaging salt such as sodium and bicarbonate. That is the bare minimum level necessary to lower high sodium base saturation effectively. After that, the rate can be dropped to about 45–50 lbs of soluble calcium sulfate per acre per month to maintain sodium base saturation the rest of the season. Do this properly and you move closer to the blue section of the chart referenced above, even with moderate to severe water problems.

Potash and magnesium play a role as well. Bermuda and paspalum will utilize at least 6 lbs or more of potash per 1000 sq ft per year. These same grasses will also utilize about 1 lb of magnesium per 1000 sq ft per year. Calcium, magnesium and potassium are all critical salts required to help keep sodium salts down and buffer the soil solution. I have seen success utilizing this very simple approach.

Regardless the product you choose and the quality of your water source, strive for proper volume of nutrient, solubility and timing whether it is a dry or wet season. When dealing with poor water quality, you have to think outside the box a bit more. Nutrients such as calcium, magnesium and potassium can be more effective and efficient when derived from a granular application, since these nutrients are needed in greater volume in the soil to buffer the soil solution.

And finally, keep aerification equipment tuned up and ready to go. You have already invested in this equipment, so put it to use to prevent the soil from compacting near the surface due to high salts. Coring, venting and pencil tining are excellent practices to use during the dry season and higher stress seasons to keep soil surfaces open and loose.

Integrating all of the above tactics into your current "water strategy" can help to increase the quality of your soil without creating excess strain on Florida's dwindling water supply.