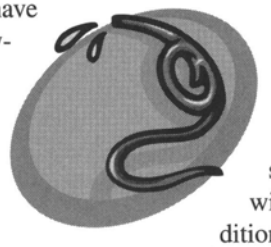
Water Quality and Turfgrass

THE IMPORTANCE OF A COMPLETE WATER QUALITY ANALYSIS

Not only is the quantity of irrigation water available for turf important but also the quality of the water. Most turf does not require the purity of water prescribed for in-house use. However, before using other sources of water, you should have a complete water quality analysis done. Some universities, private agricultural testing companies and water-testing laboratories offer water-quality analysis.



A water-quality analysis will indicate concentrations, in parts per million (ppm) or milligrams per litre (mg/l), of most of the substances listed in the adjacent table.

Private laboratory fees can be quite expensive per sample. Generally, an interpretation of the results is provided together with recommendations. You may request additional tests for heavy metals, such as aluminium and copper. It is also desirable to know concentrations of iron, manganese and total suspended solids (TSS) to assist you in designing appropriate filtration systems.

Turfgrass Water Requirements

Turfgrasses consist of about 90% water by weight. It is an essential ingredient of all living cells. All nutrients taken into turfgrass roots from the soil are in solution. They are moved from roots to stems and leaves in solution and they function within all cells in solution. In addition, as water evaporates in spaces within the leaf, it cools the turf and its micro-environment. Eventually the water vapour diffuses out of the leaf through stomata, small pores spaced together on upper and lower surfaces.

Turfgrasses differ in both physical properties that influence water needs and physiological processes that determine water use. So, turfgrasses have a combination of structural and chemical characteristics that make them more or less efficient users of water as well as more or less drought tolerant. Naturally, the depth and extent of root development influences drought tolerance. A grass with a larger, more extensive and deeper root system has an increased volume of soil from which to obtain needed water. ♦

— The Lawn Institute

WATER QUALITY ANALYSIS

Look for concentration levels of the following substances:

Sodium (Na) • Phosphorous (P)
Potassium (K) • Sulphate (SO_4)
Calcium (Ca) • Nitrate (NO_3)
Magnesium (Mg) • Total Dissolved Salts (TDS) • Carbonate (CO_3) • Electrical Conductivity (EC) • Bicarbonate (HCO_3)
Sodium Adsorption Ratio (SAR)
Chloride (CL) • pH • Boron (B)

STA ANNUAL FIELD DAY

August 15 • Waterloo Recreation Complex & RIM Millennium Park