



Using HydroJect® To Control The Risks Of Soil Salinity

Toro's amazing new HydroJect® 3010 water-injection aerator enables you to aerify putting greens more frequently than ever before, because HydroJect doesn't disrupt the playing surface. By shooting fine blasts of pressurized water into the soil—instead of pulling cores—the thin, stainless steel nozzles of the HydroJect create virtually invisible pores. There's also no cleanup required, so the whole process goes very quickly.

Because the HydroJect gives you so much flexibility in usage timing, you can aerate greens whenever you want, or as often.

Ron Duncan, Ph.D., developer of several salt-tolerant Seashore Paspalum turfgrass cultivars and now an independent consultant for water challenges on turfgrass, says effective timing of aeration depends on three main variables: soil profile conditions, age of the greens, and the level of salts coming in with irrigation water.

To evaluate a turfgrass situation, Dr. Duncan recommends tissue, soil and water analysis to determine the total salt impact on the ecosystem. Salt is naturally bad for the overall health of turfgrass, and at high levels, it can actually steal

water away from the plant's roots.

"Salinity changes everything," explains Dr. Duncan. "Salts can build up to a level where they just desiccate those roots. Or salts will start sealing that soil surface and reduce oxygen. If you reduce oxygen to Bermudagrass or bentgrass roots, they will die. Then the turf loses density, the putting quality goes down and soon you've got major putting surface complaints from the golfers. The key then is to keep the macro-pores open and keep those salts moving through the profile, and keep oxygen going down," he says.

"If someone already has a salt problem, I put them on weekly or bi-weekly aeration program, at least initially, to start moving the salts down. Then implement a regular aeration maintenance schedule at least monthly depending on the site-specific conditions," he continues. "If you have effluent type irrigation water resources, which may or may not have high salt levels, then it changes your management decisions concerning aeration frequency. And increasingly bad water quality just escalates the challenges in trying to maintain acceptable turf performance, especially on greens with low mowing heights."

To counteract salinity and prevent those damaging effects, Dr. Duncan recommends the Toro HydroJect.

"That's where this implement comes in," he says. "I regularly put people on a HydroJect program for greens when they have the equipment as a way to manage salts and not compromise the surface integrity on that green. The aerification application is not invasive, so you accomplish what you need to do to keep salts moving, without affecting the putting surface."

Pencil tines work similarly, but not as deeply as HydroJect, which reaches down a full 8". Also, most aerators with pencil tines are heavier than a HydroJect unit, which makes compaction worse. Because the HydroJect is so lightweight and easy to operate, it's no trouble to aerate a large green in an hour.

"You always have to fit aeration to site-specific situations," concludes Dr. Duncan. "You may have to do it monthly, or if you've got high salts in your irrigation water, it may be every week or every other week. The point is to understand that you don't just do this once or twice a year." ■