

Aerify desert greens

By DON DALE

If there are three major steps in preventing heat stress on desert bentgrass greens, Kurt Desiderio would probably list them in this order: aerify, aerify and aerify. It is aerification that has kept his greens at PGA West alive and kicking.

"Our goal in aerification is to keep as much air space in the soil as possible," says Desiderio, who is superintendent of two PGA West courses in La Quinta, California. La Quinta is near Palm Springs at about sea level in one of the hottest golfing regions in the world.

"This area was basically blow sand," Desiderio says, and the greens were built on sand. That might sound like a medium which water and air would penetrate freely, but it is not. And even finer sand gets blown around the Coachella Valley during storms, and that sand compacts on greens to form a hard surface soil.

Desiderio, who came here in 1996 after working in El Paso,

Texas, says the ideal greens base would be 50 percent soil and 50 percent pore space. Of that 50 percent pore space, 25 percent should be filled with water and 25 percent with air.

Needing more air

"That's checked with laboratory analysis. We pull cores and send them off about twice a year," he says. It's usually done once in spring and once in the fall.

"We're probably only 40 percent pore space, and of that, only 15 percent is air space," he says. That puts his bentgrass, which is not ideally suited to the desert in any case, in a continual state of stress in the hot summers. The top three inches, because of wind-blown fines, needs to be opened up for air.

Desiderio's program begins in late winter with regular aerification with needle or pencil tines "to keep the greens loose." He does this until the weather warms up, driving the tines six inches deep to give roots room to grow through dense sand.

"I try to do it at least four

The first hole on the Nicklaus Private Course at PGA West in La Quinta, California.

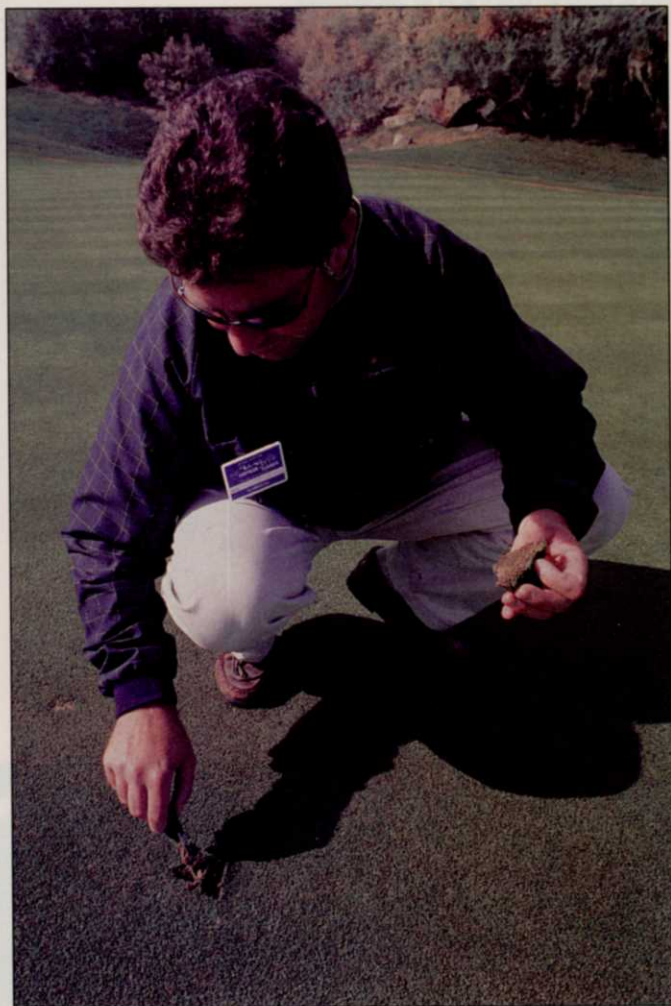
times a year," he says. "My goal this year is to do it once a month, January through May." Then he will also do it at other times of the year as needed—even in summer if he feels it's necessary, though he has to be careful to not damage the turf in the heat.

In March he begins pulling cores with 5/8-inch tines on a Greenaire to open spaces in the soil. The idea is to give the turf a chance to drop good, healthy roots in the winter, because in the summer roots gradually wither back until they may only be down three inches or less.

On the Jack Nicklaus Private Course, which because of poor wind circulation is hotter than any other course, Desiderio does not use sand to backfill the cores. He uses Ecolite. That not only gives him a porous fill, it also is a light colored material that does not heat up in the sun.



Kurt Desiderio, superintendent at the Nicklaus and Weiskopf Private Courses at PGA West.



Kurt Desiderio cuts samples on a green to look at soil consistency and water penetration

"This Ecolite does not hold a lot of heat," he says. Last year he actually pulled one-inch cores 10 inches deep and backfilled with Ecolite. Even so it has been a struggle to keep the bentgrass healthy.

"It really helped us," he says of last summer's program of pulling one-inch cores and filling them with Ecolite. He would like to do this twice a year in the spring.

Prescription fertility

Desiderio's soil fertility program on the bentgrass greens is designed to give good nutrition while adding to soil porosity. He has a regular organic granular fertilizer program, using products like Sustane, Green

Relief or Milorganite, supplementing that with foliar sprays.

"I spoon-feed on top of the organics," he says. That gives him good week-in, week-out growth built on a reserve of fertilizer in the organics. The result is very uniform growth and resistance to heat.

To create a consistent putting surface, Desiderio avoids quick-release fertilizers and uses a lot of potassium—something his desert soil needs. He applies from 15 to 20 pounds of potassium annually, parceled out as needed, and about eight pounds of nitrogen.

His normal program is a shot of organic granular 5-2-10 once a month at half a pound of nitrogen per 1,000 square feet of green. He supplements that about every 10 days with potassium nitrate and 6-30-30 or 20-20-20, applied foliar. He also uses B-Plus or other microbes to keep up organic action in the sandy soil, and adds iron at four ounces per 1,000 when needed.

Those are average annual figures. In the summer he uses less granular and more foliar, and in the winter more granular and less foliar.

Hold the salt please

Desiderio also can have a problem with salt buildup, so he applies a very heavy irrigation about once a month to flush salts down and away from the root zone. He puts it on top of an application of gypsum.

"That's a standard thing you do here," he notes. In fact, that's another reason for a good aerification program: salt flushing doesn't work unless you have a soil profile that will encourage water penetration.

"You wouldn't be able to apply water fast enough" if you didn't aerify religiously, Desiderio says.

To cut down on the heat quotient on the Nicklaus Private Course, which is built close to the mountains and gets poor air circulation, Desiderio tries everything he can to cool the course. He went so far as to cut some vegetation that was blocking air flow to the 16th green.

His crews also are active in removing blow sand from fairways, and wishes there was a way to remove it from greens. They use small loaders to take sand from fairways, there's that much at times. This is necessary both for aesthetics and to prevent those fines from compacting surface soil.

Heat is not as much of a concern on the hybrid Bermuda fairways and tees, he says, but he aerifies the fairways with 5/8-inch cores on a Renovaire once a year (in May or June) and the tees twice (the last time in August to give them time to heal before overseeding begins).

Because of the struggle with bentgrass, PGA West has decided to convert the greens of the Nicklaus Private Course to Tifdwarf Bermuda this summer, Desiderio points out.

His Weiskopf Private Course will retain its bentgrass, because its location is a little more open to air flow and its greens were built to USGA specs. They are better able to fend off the heat. □

—Don Dale is a freelance writer living and working in California.