JOB TALK

Potassium gets credit for leaf spot reduction

■ Prolonged spells of hot, wet weather these past few summers have been especially troublesome on golf courses. Ironically, as Bill Johnson prepared for one, he was protecting against the other—and leaf spot—last year at the World Houston Course, Houston, Texas.

Johnson is the regional superintendent for American Golf Corp., the world's largest golf course management corporation. He also serves as an internal consultant at seven American Golf courses in south Texas, including World Houston. In 1991 he began an experiment with sulfate of potash, a high potassium fertilizer, to increase the turf's drought tolerance.

But instead of the anticipated summer droughts, Houston's golf courses were inundated with unusually wet weather. Over the last 20 years, the city has had average annual rainfall of 44 inches. For the last three years, however, the total annual rainfall has exceeded 55 inches.

All the rain was particularly hard on golf courses in the southern half of the mammoth state. The busiest courses—like World Houston, host to 55,000 rounds per year—were especially stressed.

"The courses here have clay soil, which doesn't drain well, and our course tends to be even more poorly drained," says Johnson.

It wouldn't wait—Johnson had already begun a fertility program, using five pounds of K_20 on the front nine, and two pounds on the back.

"I favored sulfate of potash due to its low salt index," says Johnson. "I've always maintained high potassium application rates for my greens and tees, to offset potential leaching loss, increase rooting and improve stress tolerance."

For the experiment, he used Great Salt Lake Minerals Corp.'s new Turf Blend, which, according to the company, contains the lowest salt index of any commonly-used potassium source now on the market.

"The importance of this product lies in the fact that it provides an essential dual nutrient fertilizer while minimizing the risk of turf burn," says Dan Nason, marketing manager for Great Salt Lake Minerals.

"Sulfate of potash is an excellent dual nutrient source safer for turfgrass because of its low salt index, which also allows for safer, higher rates of potassium that promote greater root development and a generally healthier stand of turf. The true value of sulfate of potash becomes especially evident when higher rates of potassium are desired prior to periods of severe stress from disease, drought, heat, cold and wear."

The number five fairway and bunkers at the World Houston Course, which uses potassium to keep turf disease-free.

Although the expected drought of 1991 never occurred, Johnson continued his applications. After the spring rains of 1992, Johnson was confronted not with drought, but with leaf spot disease.

"The severity of the disease and the majority of the damage was confined to the back nine, even though I have several drainage problems on the front nine," Johnson says. "One would expect, all things being equal, that leaf spot severity would be more intense on turf subjected to prolonged periods of free standing water and reduced water infiltration."

To his surprise, there was less disease infestation on the high potassium front nine, but the damaged areas on the front nine recovered faster and more completely than those on the lower potassium back nine.

"The big thing is that we repeated the test in 1993 and got the same result. That, to me, says a lot," says Johnson. "There is no question in my mind that it's reducing leaf spot."

The difference in disease incidence between the front and back nines was so obvious, that, as Johnson says, "Even Ray Charles could see it."

As a result of the experiment, he says, "I feel that high potassium may also play an important role in turf disease resistance and general stress injury recovery."

As an additional benefit of experiment, Johnson was impressed with the quality of Great Salt Lake's Turf Blend. "The particles are very uniform, it's very clean, and when you spread it, there's not a little cloud following you around."

The improved uniformity minimizes screen costs and translates to higher quality blends with less segregation. To Johnson, who must work within a tight budget, that leads to an important consideration when determining whether to go with the added potassium. It's more cost effective, according to Johnson.

But he'd still like to see what a high potassium application does to the turf during a dry spell.