Drought — held containers only.” Knaggs said. “But we need 6 inches a month by severe heat and no rain. Continued from page 16

Turfgrass experts have a number of suggestions for grass in drought situations.

Nutrition
In drought situations, superintendents “have to be cautious about feeding” their golf courses, says Jim Snow of the USGA Green Section’s Golf House in Far Hills, N.J. “You wouldn’t want to overstimulate the grass,” Snow says. “Too much fertilization will promote cool root growth. If soil tests indicate low levels of either of those nutrients, you want to provide them. Keep nitrogen fertility down to low to moderate levels during a spell.”

Norman W. Hummel Jr., assistant professor of turfgrass science at Cornell University, says the critical point in nitrogen management is to provide only enough nitrogen in the spring to promote rooting. Areas that haven’t been fertilized in a year or more would benefit from a pound of nitrogen per 1,000 square feet applied early in the growing season.

On areas fertilized in fall or late fall, nitrogen applications would depend on the kind of grass involved and the history of the soil. “Soil testing is crucial,” he says. “You certainly should have adequate levels of phosphorus and potassium, because that will promote good root growth. If soil tests indicate low levels of either of those nutrients, you want to provide them. Keep nitrogen fertility down to low to moderate levels during a spell.”

While it is labor-intensive, Knaggs pointed out that there is also less mowing. They won’t have to bring in water tanks to supplement their self-contained ponds and wells. However, Knaggs is taking measures to take advantage of the Band of Americans’ concept. “We will use deep-drill aerification on greens,” she said. “We’ll be cautious with fertilizer use (because the plants will grow more slowly). And we’ll make sure we use potassium to help the plants under stress. We’ll use a higher cut and smaller machines.”

Knaggs said she could not speak for last year’s golf courses, as they were behind in their summer systems, she added. “But everyone in this area ordinarily believes is troubled by drought.”

The Southeast
In the Southeast, Hoos said that even moisture-loving plant materials have problems. “In 1988 — January to May — Florida was OK. From May on, they were behind in water. September to December they had 2 inches of rain. Normally, they get 50 inches in that time.”

According to Hoos, what happens then is that canals levels drop. It continues through the spring and summer, they could see problems. “Most people irrigate out of the canals. And if it drops below the pump intake levels, then people won’t be able to pump water,” he added.

Southern California
Back on the West Coast in Southern California, the Los Angeles and San Diego basins face problems that will become severe with inadequate rain. Hoos cautioned that the Northern California reservoirs serving the Los Angeles and San Diego basins were at 50-percent capacity for storage in April, before the snow melt and any spring rains that arrived.

If they do not get enough rainfall to recharge the storage this winter, 1990 could be a real problem,” he said, noting that normally the reservoir is kept at 75 to 100 percent. If reservoirs are not refilled, cutback may be necessary in the Greater Los Angeles and San Diego areas.

California’s desert resorts, an area everyone ordinarily believes is troubled by water, are less so during the spring rainy season, Hoos said. “Our ground water and Colorado River water is adequate. In fact, the Coachella Valley Water District sells water to Los Angeles. We have first right to the water for our area.”

The Southwest
Arizona is a different matter. Severe legislative measures have already been implemented. Courses can only irrigate 500 acre-feet per year. They can get more water after that amount, but they pay a severe penalty, according to Hoos.

This accounts for the kind of natural desert design schemes found at such places as Desert Highlands in Scottsdale and Ventana Canyon in Tucson.

Superintendents should cut their warm-season grasses at a lower height in the spring and mowing at a higher cut during this time should result in greater root development. When summer arrives, mowing height changes according to what part of the country you are in.

Hummel says that in the northern two-thirds of the United States, maintaining a high-cut turf during the summer causes larger water losses due to the greater leaf area and lower resistance in the canopy to soil evaporation. He suggests that where practical, gradually reduce the mowing height starting in late spring and keep it at that height until early fall.

In the southern one-third of the country, superintendents should cut their warm-season grasses at a lower height in the spring and raise the cut slightly during the summer, according to R.J. Johnson, professor of agronomy at the University of Georgia Agri-

culture Department’s experiment station in Griffin.

He says Bermuda and zoysia grasses especially need to be cut (to 1/2 to 3/4 inch) to remove thatch in the spring; but then the height should be raised as the temperature gets hotter.

Johnson says that in the South, people should cut cool-season grassesabout the same year-round (about 2 1/2 inc hes) and this will reduce stress in the summer heat.

Pests
“Do anything you can to control pests, especially insects, because insects can really cause a lot of problems with roots,” Snow says. “They eat the roots of the plant and you have to use water like mad to keep the turf alive.”

Checking for nematodes, or roundworms, and keeping them under control, is also critical, he says.

Traffic
Keeping traffic off the turf areas is important to the turf’s survival, according to Snow.

He suggested the course officials look at restricting golf cars to specific areas. An example would be to keep them on the paths, or if the course doesn’t have paths, have golfers drive in the tall rough areas. But still “you can’t keep running over dry turf with a golf car even in the rough so if the roughs are not irrigated, consider putting the cars off the course all together or put them on the fairways for awhile,” Snow says.

The issue of water for golf courses is an ongoing one. Perhaps Butler National Golf Club’s Miles has the best philosophy: “It’s everybody’s responsibility to be responsible.”

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