

## Surviving the flood

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However, on July 16, the Army Corps of Engineers started to release large quantities of water from the bloated Milford and Tuttle Creek reservoirs, both of which drain watersheds that cover large portions of Kansas, southern Nebraska and eastern Colorado. This was the start of what became the worst flooding of the Kansas and Missouri river basins since 1951.

Most courses in Kansas City suffered minor damage from the general flooding, but one — Stagg Hill Golf Course in Manhattan, Kan. — suffered heavy damage from these water releases. Stagg Hill lies in the Kansas River flood plain and, early this May, the course was partially flooded from the constant rains. It recovered but once the water releases started, Stagg Hill was inundated. The entire track, except two holes, lay under 10 feet of water at various times.

The fairways and tees at Stagg Hill consist of a combination of Bermudagrass, zoysiagrass and bluegrass — all have been lost from the flood. All but four greens were lost. Portions of the golf course are still buried under six feet of mud and sand. On some holes, only the tops of ballwashers can be seen. Course superintendent Dave McComas has had to cope with five feet of water in the maintenance building, as well as no power or telephone service.

Estimates for just removing the mud and sand are running as high as \$600,000. With such a large fee just to remove the debris, course officials do not think they will be able to reopen without some type of federal or state aid. Insurance for the course covers only the structures and equipment. Until an answer comes on whether they will qualify for federal aid, the course remains in limbo.

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Problems in Kansas City and surrounding areas were compounded when the rains quit. Most turf had not hardened off from the spring-time conditions. With very little sunshine in the spring and early summer, and saturated soil conditions, the root system of most grasses was very accustomed to surviving in the top two inches of the soil profile. Once the sun did come out, the heat came with it. With temperatures in the low- to mid-90s, disease pressure was at a level unseen in Kansas City for quite some time.

Many courses that survived the flooding and saturated soil conditions then developed problems on their greens and other cool-season turfgrasses — because of the transition from spring in July to summer in July. Diseases such as anthracnose on bentgrass (a rarity in this area) surfaced, as well as summer patch and Phytophthora. Pythium and brown patch were

common. Brown patch has been our constant companion since May, with control and recovery extremely hard due the constant rainfall and humidity.

The only bright spot during the whole summer has been for those with zoysiagrass tees and fairways. Zoysia has done extremely well and has, no doubt, convinced a few superintendents to convert to zoysia.

Many courses have already started their fall aerification and seeding. The quantities of seed used this year will far outpace the amount used the two previous years.

## New Mexico water research under way

LAS CRUCES, N.M. — Scientists with New Mexico State University's Agricultural Experiment Station are discovering how much water Bermudagrass needs to grow in the state's soil by using a custom-built electronic irrigation system.

James McCrimmon, NMSU turfgrass management scientist, is testing 15 Bermudagrass cultivars on 45 plots at Fabian Garcia Science Center.

"We have sprinkler heads that pop up about four inches, so their low trajectory should prevent some of the spray drift caused by wind," McCrimmon said.

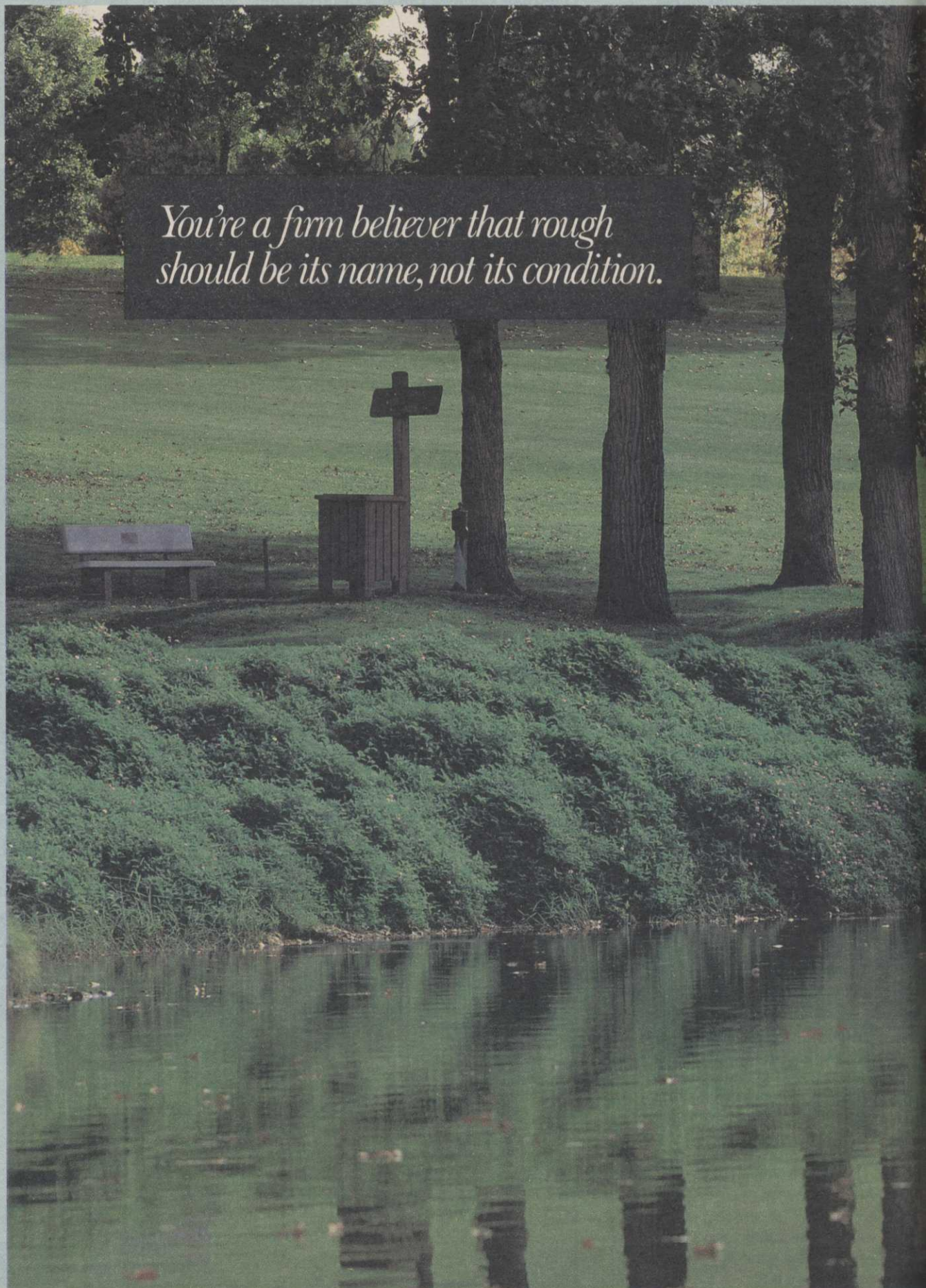
Each plot in the system measures four square

meters. More than 6,000 feet of electrical wiring run with underground water pipes to control each sprinkler head, and the entire system is run by an advanced irrigation control box.

"For example, we can water one plot at a different time and duration than another simply by programming the system," McCrimmon said.

That option allows researchers to test the cultivars under a variety of simulated rainfall conditions. The study also measures the cultivars' density, color, dormancy period and cold and drought tolerance.

"In the long run, you can save water with this type of system, and conservation is what we're striving for," McCrimmon said.



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