Research in progress

CUTTING EDGE

Clark Throssell, Ph.D.

Photo by Kurt Steinke

Soil moisture effects of turf, commercial prairie mixtures

Water pollution in urban environments has continued to increase despite efforts to decrease non-point-source pollution. One strategy recommended for combating this problem is the use of native prairie plants in lieu of turfgrasses under the premise that the deeper rooting systems of prairie plants will encourage water infiltration and reduce runoff. Our objective was to determine the effect of vegetation type on soil moisture and runoff from natural precipitation. Field studies were established using new and mature Kentucky bluegrass and mixed grass and forb prairie. Mature prairie and Kentucky bluegrass established from sod maintained similar soil moisture levels. Early-stage prairie maintained greater soil moisture than Kentucky bluegrass that was similar in age. As both types of vegetation matured, there was no practical difference in soil moisture between prairie plants and Kentucky bluegrass. Maintaining a healthy stand of the desired vegetation will encourage water infiltration and reduce runoff. **— Kurt Steinke, Ph.D. (ksteinke@ag.tamu.edu), Texas A&M University; and John Stier, Ph.D., University of Wisconsin**

Controlling cool-season grasses in dormant bermudagrass

Perennial ryegrass and annual bluegrass are unsightly and can be difficult to control in dormant bermudagrass. The object of this study was to determine the level of perennial ryegrass and annual bluegrass control provided by Roundup (glyphosate), flazasulfuron, Monument (trifloxysulfuron), Certainty (sulfosulfuron), Revolver (foramsulfuron) and TranXit (rimsulfuron) in dormant bermudagrass. Herbicides were applied in February and March 2005. Percent control of perennial ryegrass and annual bluegrass was visually rated at regular intervals throughout the spring. In general, herbicides applied in February were more effective than those applied in March. Flazasulfuron at 1.5 ounces/acre (0.01 gram/square meter), Monument at 0.56 ounce/acre (0.004 gram/square meter), TranXit at 2.0 ounces/acre (0.014 gram/square meter) and Revolver at 26.4 fluid ounces/acre (0.19 milliliter/square meter) provided greater than 85% control of perennial ryegrass 60 days after application. All herbicides, except Certainty applied at 1.33 and 2.66 ounces/acre (0.009 and 0.019 gram/square meter) and glyphosate at 16 fluid ounces/acre (0.116 milliliter/square meter), provided greater than 90% control of annual bluegrass 80 days after application. A number of herbicides are effective in controlling perennial ryegrass and annual bluegrass in dormant bermudagrass. **— John Boyd, Ph.D. (jboyd@uaex.edu), University of Arkansas**

Photo by John Boyd

Topdressing Kentucky bluegrass with composted manure

Golf course fairways and rough have been suggested as potential sites for manure applications to help alleviate the overapplication of manure on cropped lands. Our objective was to evaluate the effects of topdressing manure compost on Kentucky bluegrass growth, quality and drought tolerance. Composted manure was topdressed at rates of 0, 0.4, 0.8 and 1.2 cubic yards/1,000 square feet (0, 0.0033, 0.0066 and 0.0099 cubic meter/square meter) on established Kentucky bluegrass turf in May and September 2003 and May 2004. A synthetic nitrogen fertilizer was applied so all plots received equal amounts of total inorganic nitrogen. Plots topdressed with 0.8 and 1.2 cubic yards/1,000 square feet (0.0066 and 0.0099 cubic meter/square meter) compost had 10% higher turf quality and 50% more clippings in late summer, retained green color longer in fall and greened up earlier in spring than the plots without compost. During three separate 10-day dry-down periods, the compost-treated plots retained more water at the 6- to 12-inch (15- to 30-centimeter) soil depth than control plots, suggesting that compost could enhance turf performance during drought. Composted dairy manure may improve turf quality while providing a means to use a waste product. **— Grant Johnson, California Golf Club of San Francisco; Yaling Qian, Ph.D. (Yaling.Qian@colostate.edu), and Jessica Davis, Ph.D., Colorado State University**

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