

Physiological Response of Bermudagrass Grown in Soil Amendments during Drought Stress

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Abstract

The effects of several soil amendments, following a single filling of core aeration holes, on growth and transpiration of 'Tifdwarf' bermudagrass [*Cynodon dactylon* (L.) Pers. × *C. transvaalensis* Burt Davy] were examined during drought stress. Soil amendments had variable effects on turf quality. In general, turf grown in ZeoPro®- and Profile®-amended sand had the highest quality. Data indicated that the evaluated soil amendments have the potential to influence soil water content, ultimately influencing transpirational response to drought stress. Amended sand contained 1% to 16% more transpirable water compared with non-amended sand. Turfgrass grown in Axis®- and Isolite®-amended sand required 0.4 to 1.4 days longer to reach the endpoint (transpiration rate of drought stressed plants <12% of well-watered plants) during a period of rapid water depletion. Data from this study suggest that the total volume these amendments occupied in the root zone, following a single filling of core aeration holes in sand, may positively influence soil moisture status, resulting in an increase in drought avoidance.