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Water Conservation on Golf Course Fairways Using Recycled Water

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Document Name: Effects of Recycled Water on Turfgrass Quality Maintained under Golf Course Fairway Conditions

Objective:
The objectives of this study are to determine the stress on turfgrass in terms of chlorophyll and nutrient contents, amino acid response levels (Arg and Pro), changes in color and quality, and growth rate by comparing the effects of irrigation with potable and recycled water on bermudagrass.

Conclusion:
Overall there was no adverse effect on bermudagrass growth and development by long-term use of recycled water. The levels of all elements like potassium, magnesium, calcium, sulfur, manganese, and copper were higher in the soils irrigated with potable water than in the soils irrigated with recycled water, with the exception of sodium and zinc. As a result, the EC and the CEC were higher in the soils irrigated with potable water than in those irrigated with recycled water.

There was no significant difference between the recycled and potable water treatments in the levels of different elements in the plant tissues as observed in the tissue analysis except for the levels of sodium and magnesium. Overall, the chlorophyll content was higher in the plants irrigated with recycled water than in the plots irrigated with potable water except under extreme moisture stress conditions. Bermudagrass made similar osmotic adjustments to cope with the saline and moisture stress under recycled and potable irrigation conditions, which was evident by the proline content in the tissues.