

ANALYSIS OF SOME PHYSIOLOGICAL ASPECTS OF DROUGHT STRESS RESISTANCE ON TWO GROUND COVERS

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Abstract

Drought stress is one of the most important factors that reduce turf growth and quality. Restriction of water resources is the main problem of turfgrass in some regions of Iran. According to high water requirements of turfgrass, it is essential to find suitable turfgrasses for arid and semi-arid conditions. This study was carried out to evaluate physiological responses of *Agropyron desertorum* Fischer. and *Poa pratensis* L. cv. Barimpala (Kentucky bluegrass) subjected to withholding irrigation. Turfgrass seeds were cultured in cylindrical pots in outdoor conditions. Plants were irrigated daily until drainage occurred. After establishment of plants, irrigation was withheld for 20 days. Results showed that *P. pratensis* and *A. desertorum* wilted respectively. TQ and RWC were decreased due to drought stress, that this decrease in *A. desertorum* was less than Kentucky bluegrass. With prolonged stress treatment, EL and MDA strongly increased in Kentucky bluegrass. The least EL and MDA were observed in *A. desertorum*. SOD and CAT activities in stressed plants of *A. desertorum* and *P. pratensis* increased and then decreased with prolonged stress. The highest activities of these enzymes were observed in *A. desertorum*. APX and POD activities increased and then decreased with progressed stress in *P. pratensis*, while *A. desertorum* showed increasing in these enzyme activities. *P. pratensis* initially showed an increase in GPX activity, but activity of this enzyme was decreased with prolonged stress in this species. The GPX activity was shown to increase in *A. desertorum*.

Key words: Turfgrass, Drought, Electrolyte leakage, Antioxidant enzyme, lipid peroxidation



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