

Abstract

Turf is one of the most important ground covers and it is one of the main elements of landscape designing. It covers soil surface and provide a pleasant enviroment. Iran is one of the driest countries in the world and dry condition has rsulted in soil salinity. Farthermore, a lot of water resources are salty. Therefore, it is important to select salt tolerant turfgrass for planting in landscap. The purpose of this expriment was to determine the relative salt tolerance of ten Kentucky bluegrass cultivars (Ampellia, Park, Harmony, Merion, Crusade, Nutop, Balin, Challenger, Geome and Banf). A factorial expriment based on completely randomized design with 6 salinity level (0, 3, 1, 5, 3, 4, 5, 6 and 7. 5 ds/m) and ten cultivars of Kentucky bluegrass, with three replicatios was conducted in the Isfahan University of Technology. The analysis of variance showed that the effect of cultivar, salinity and their interaction were significant at 1%. The results also showed that shoot and root dry weight, leaf water contet(LWC) and turfgrass quality reduced as salinity leval increased, whareas leaf firing of turfgrass increased. Ampellia, Park and Harmony produced the highest of shoot and root dry wheight whareas the Banf and Nutop produced the lowest. Ampellia and Park had maximum while Banf and Crusade the minimum leaf water content(LWC). The highest turfgrass quality was recorded in Ampellia and Harmony while the lowest quality was found in Banf and crusade. Ampellia showed the least leaf firing followed by Harmony whareas Banf and Crusade showed the highest leaf firing, respectively. Banf produced the highest but Park produced the lowest proline contents. Though chlorophyll content reduced as salinity level increasd, the reduction was lowest in Ampellia and highest in Banf. As salinity level increased, Na^+ nad Cl^- contents increased while K^+ reduced. However Ampellia showed the lowest Na^+ nad Cl^- contents whareas Banf showed the highest. The correlation study between traits showed that with increasing proline content of leaves, turfgrass quality, shoot dry weight, root dry weight and water content percentag significantly reduced. also turfgrass leaf firing increased. proline production rate was higher in the sensitive cultivars of this species that probably could be as an index of stress level and plant health. It was state also found that along with increasing salt, sodium and chloride of shoot was increased that caused leaf firing and reduced turf quality. It seems Sodium and chloride accumulated under salinity is one of the major reasons for the reduction in growth indices. the observved difference between cultivars could be due to the ability of some cultivars in ion excertion such as sodium and chloride from shoot. More potassium uptake in shoot could also reduce salinity damage. It was concluded the more potassium was accumulated in shoots, the lower the salinity damage was and decrease leaf firing. ratio of potassium to sodium in the leaves were more important that their individual concentration. Based on overall measured parameters in this study, Ampellia was the most salt tolerant cultivar followed by Harmony, Park and Nutop, respectively. Moreover, Na^+ , Cl^- and the ratio of shoot K^+/Na^+ could be used as selective criterion for salt tolerance evaluation among turfgrasses Also, the results showed that there was a wide variation among cultivars for their salt tolerance, therby, selection for more salt tolerant among the cultivars is possible.

Keywords: Turfgrass, Cultivar, Salinity, K^+/Na^+ ratio, Chlorophyll.