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## BIOMASS ALLOCATION PATTERN OF SEVENTEEN SPECIES OF TURF GRASS UNDER SIMULATED TERMINAL DROUGHT

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Water is a limiting resource when maintaining lawns. Hence drought tolerance is an important aspect when selecting turf grass for low maintenance lawns and even for water limited areas. Therefore, the present study was aimed to evaluate the relative tolerance of seventeen turf grass species to simulated drought conditions.

The experiment was conducted in a growth chamber using seventeen turf grass species grown in plastic pots. Twenty days after seed germination, each species was given a 20-day terminal drought. Controls were kept well watered. Then all the plants were well watered for another 20 days. Growth measurements were taken at 20, 40 and 60 days after seed germination. Relative water content (RWC) and Relative cell membrane permeability (RCMP) were computed to see the effect of drought on plants. All the parameters of water stressed plants were compared with the well-watered controlled plants.

The species having the highest the Relative growth rate (RGR) during well watered conditions had the highest RGR in water stressed conditions too, except *Agrostis tenuis*. But during regrowth, the species having lower RGR in well watered condition showed higher RGR in water stressed conditions. However *Cynodon dactylon* showed higher RGR in both water regimes irrespective of the time and the treatment. Most weight-related parameters were significantly correlated to each other since biomass produced by photosynthesis causes increases in plant dry weight. The aesthetic value of the grasses was enhanced when the relative water content of the grass species was high and the relative cell membrane permeability was low. Therefore as expected when the plant cells are turgid they appear nice and active. When considering different plant attributes, *Paspalum notatum*, *Festuca longifolia*, *Poa pratensis*, *Festuca elatior* and *Dactylis glomerata* showed highest comparative drought tolerance while *Lolium multiflorum*, *Agrostis tenuis* and *Eremochloa ophiuroides* showed a lower tolerance. During regrowth after the simulated drought, high performances were shown by *Agrostis alba*, *Cynodon dactylon*, *Eremochloa ophiuroides*, *Festuca rubra* and *Festuca arundinacea*, while *Poa trivialis*, *Festuca rubra* and *Agrostis tenuis* showed the poorest regrowth.

According to the findings, *Cynodon dactylon* performed well both during simulated drought and regrowth period. Thus it can be recommended to dry areas. Most of the other grass species did not perform well in all the considered conditions. Those species could be selected according to the purpose of the turf.