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Effect of drought stress and different levels of shade on the growth and performance of wheatgrass and tall fescue

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ABSTRACT

A few information about the combined effects of different environmental stress on turfgrass physiology and growth is available. Also, a separate study of environmental factors on plant cannot be a suitable model for natural conditions. This study was conducted to investigate the interactive effects of different levels of shade (0, 50, and 70%) and water treatments (well-watered and non-irrigated) on visual quality and root characteristics of wheatgrass (*Agropyron deserturum* L.) and tall fescue (*Festuca arundinacea* Schreb. 'Forager') in a factorial arrangement based on a completely randomized design. Under different levels of shade (50 and 70%), the negative effects of drought stress on the rate of dehydration, visual quality, ion leakage and the mortality rate of surface and deep roots was reduced. According to the ornamental performance, tall fescue had better performance than the wheatgrass under drought stress conditions and full sunlight, but wheatgrass was more successful than tall fescue under drought stress and 70% shade level. Under moderate shade (50%) and drought stress, tall fescue spent more time to dehydrate than wheatgrass. It can be concluded that in water stress conditions, shading could be useful to cope with drought stress, which needs to be further investigated.

Keywords: electrolyte leakage of root, root mortality, tall fescue, wheatgrass.

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