

THE ROLE OF MYCORRHIZAL FUNGI IN INCREASING GRASS TOLERANCE TO DROUGHT UNDER
DIFFERENT NUTRIENT REGIMES AND THE EFFECT OF COMMERCIAL MYCORRHIZAE ON
ENHANCING DROUGHT TOLERANCE

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Abstract

Mycorrhizae are a symbiotic relationship between the roots of many vascular plants and a soil fungus. Mycorrhizae assist plants in harnessing scarce soil nutrients and, although less well documented, may increase plant resistance to drought. Mycorrhizae are native to virtually all ecosystems, and have recently been distributed commercially as well. In the course of my thesis, I tested two hypotheses: 1) that the presence of native mycorrhizae enhances drought resistance in a Kenyan grass species under different nutrient regimes; 2) that commercially available mycorrhizal fungi enhance drought tolerance in a commonly used feed grass. To address these questions, I exposed plants to drought stress in a greenhouse environment and measured their ability to tolerate drought. I found that plants grown in native mycorrhizae under different nutrient regimes demonstrated a greater response to nutrient levels than mycorrhizae. Preliminary results from the second experiment demonstrate no difference in growth rates of mycorrhizal versus non-mycorrhizal plants at this point.