

# Effect of vesicular arbuscular mycorrhiza (VAM) fungi inoculation on coppicing ability and drought resistance of *Senna spectabilis*

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## Abstract:

The influence of Vesicular arbuscular mycorrhiza fungi inoculation on coppicing ability and drought resistance of *Senna spectabilis* was studied in a screen house experiment. The result obtained indicates the dependence of *Senna spectabilis* on mycorrhizal symbiosis. Under well watered conditions, arbuscular mycorrhiza inoculation increased coppicing biomass production of *Senna spectabilis* by 269% while under water stressed conditions, coppice biomass production increased by 317%. Analysis of variance revealed that interaction between the mycorrhizal fungi and water stress was highly significant. Inoculating *Senna spectabilis* with VAM improved its drought resistance. Under drought conditions, inoculating *Senna spectabilis* increased total shoot length by 100% root collar diameter by 74% shoot dry weight by 435% root dry weight by 397% and plant leaves number by 105%.

Inoculated plants had more leaf water content than non inoculated plants. Inoculated *Senna spectabilis* plants took more days to show signs of drought stress (total leaf folding, loss of shoot and leaf turgor and, wilting of lower leaves). The better growth responses of mycorrhizal plants were attributed to higher nutrients uptake and higher moisture absorption. Arbuscular mycorrhiza inoculation has a high potential in water stressed environment in maintaining water relationship.