

Effects of mycorrhiza and phosphate fertilizers on the growth and yield of foxtail millet (*Setaria italica* L.) under drought stress conditions

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Abstract	<p>Millet is a cereal plant that has a potential for rice substitution. This plant is adaptive to be cultivated in dry land but has a tolerance limit to drought stress. Mycorrhiza and phosphate (P) fertilizer treatments help plants adapt to this condition. This study aimed to determine the effects of phosphate fertilizer and mycorrhiza as well as their interaction effects on the growth and yield of foxtail millet (<i>Setaria italica</i> L.) under drought stress. The experiment was carried out from January to June 2020 in the experimental farm, Faculty of Agriculture, University of Jember Soedirman. The research was arranged in a factorial randomized complete block design consisting of two factors. The first factor was the dose of SP-36 fertilizer per polybag, namely P0 = 0 g, P1 = 37,5 kg.ha⁻¹ (25%), P2 = 75 kg.ha⁻¹ = 0.88 g/polybag (50%), and P3 = 150 kg.ha⁻¹. The second factor was the dose of mycorrhiza biofertilizer, namely M0 = 0 g.polybag⁻¹, M1 = 33.3 g. polybag⁻¹ and M2 = 66.6 g.polybag⁻¹. The treatment was replicated three times. The data observed were analyzed using the F test, continued with DMRT test at p=0.05. The results showed that SP-36 fertilizer application at half of the recommended dose (0.88 g/polybag) could increase growth variables, such as leaf area, panicle length, and seed weight. Mycorrhizae application 33.3 g/polybag could improve variables such as plant height, leaf area, panicle length, and seed weight. It also accelerated the initiation of panicle emergence compared to control.</p>
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Author	Dr AHADIYAT YUGI RAHAYU, M.Si