Optimalization of Phosphorus Absorption and Flavonoid Production on Portulaca oleraceae inoculated with mycorrhiza

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ABSTRACT

Portulaca oleracea or known as purslane plant is a weed that grows wild in rice fields or used as ornamental plants in the garden. Research on the health benefits of *P. oleracea* shows that this plant contains high phenol compounds. Among the phenolic compounds are flavonoids in the form of quercetin and kaemperol. The production of these secondary metabolites is influenced by the uptake of phosphorus (P) from the soil. However, the P element is an element whose availability in the soil is quite limited because it is easy to wash and continuous absorption by plants can result in the formation of a wash zone around the roots. The purpose of this study was to observe that there was an increase in P uptake from the environment where *P. oleracea* was grown so that there was an increase in flavonoid production in these plants. The type of mycorrhizae used is in the form of fertilizer with the trademark MycoGrow which contains various types of mycorrhizae. The treatment is given one week before giving liquid NPK fertilizer. Growth observations were carried out every 3 days while the qualitative measurements of the secondary metabolites were carried out every 2 weeks.
Preliminary results indicate that administration of mycorrhizae to *P. oleracea* is not considered a stressor for plants. The main stressors that have an effect on plant growth are seen in the increase in height, diameter and the number of leaves that have decreased was the drought. With the presence of mycorrhizae that are inoculated at the roots, plants can go through the acute phase and enter the adaptation phase until the research is completed.

Kata Kunci: *Phosphorus, mycorrhizae, Portulaca oleracea, flavonoids*