EFFECT OF MYCORRHIZA ON PLANT GROWTH AND LEAF NITRATE REDUCTASE ACTIVITY OF SOYBEAN (Glycine max (L) Merrill) IN A MIXED MEDIUM OF SIDOARJO MUD AND SAND

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Abstract

Sidoarjo mud having texture of tough soil which content nitrat and nitrit 30 mg/L. The utilityzation of mud Sidoarjo has dried can be used for soybean medium to growth, because soybean is plant that can grow in every kind of the soil, but the soil must have a good drainiation. This research were aimed to determine capability adaptation soybean on Sidoarjo mud with sand combination and mycorrhiza. This research were done in Department of Biology Faculty of Mathematics and Natural Science Sepuluh Nopember Institute of Technology.

Randomized Complete Design Method is used for this research with factorial. The parameters are leaf area, dry weight, nitrate reductase activity, precentation of mycorrhiza infection, and total root nodule of soybean. The data was analyzed using Analysis Of Variance (ANOVA) test and real different influence with Tukey’s test α = 0,05.

Soybean has been planted on Sidoarjo mud medium, sand with or not adding by mycorrhiza could growth. Leaf area was higher (11949 mm²) are on medium Sidoarjo mud and sand (1:3) without adding by mycorrhiza and dry weight was higher (464,7 mg) are on medium of Sidoarjo mud and sand (1:3) with adding by mycorrhiza in. NR activity that higher (785x10⁶µmol/mg/jam) on treatment with medium of Sidoarjo mud and sand (3:1) with 10 gr mycorrhiza.

Keywords: Mychorriza, NR activity, sand, Sidoarjo mud, Soybean