A SURVIVAL STUDY AND NITRATE REDUCTASE ACTIVITY OF THE MAIZE JAYA 2 ON A MIXED MEDIUM OF SIDOARJO MUD, SAND, ORGANIC FERTILIZER AND MYCORRHIZA

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Abstract

Sidoarjo mud has inundated farmland, causing aridity should be addressed, so that land can be returned to the ecological functions. Sidoarjo mud still contains nitrate (NO3⁻) of 30 mg/l. Maize is cultivated plants are able to grow on less fertile land that is expected to be able to grow maize in the media of modified Sidoarjo mud first.

Research conducted at the Department of Biology, using seed maize Jaya 2, seedling in Sidoarjo mud in the media who have combined with sand, organic fertilizer and mycorrhiza. Growth parameters was observed leaf area, dry weight and nitrate reductase activity. Research design using a completely randomized factorial design with analysis of variance and Tukey test real difference $\alpha = 5\%$.

Maize capable of living in Sidoarjo mud media modified sand, organic fertilizers and mycorrhiza. Leaf area, dry weight and activity of nitrate reductase (ANR) tend to increase as plants age. Maize was grown in Sidoarjo mud media with the addition of organic fertilizers 15 gr and mycorrhiza 10 gr has the highest growth parameters of leaf area = 56,736 mm², dry weight = 1903 mg and ANR = $492 \times 10^{-6} \mu\text{mol/mg/hour}$.

Keywords: ANR, dry weight, maize, Sidoarjo mud