

Response to Growth of Peanuts on TBM Palm Oil Fields with the Addition of Organic Materials and Microorganisms

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ABSTRACT

Oil palm cultivation with monoculture planting patterns can increase land openings in TBM, especially soil compaction. As a result, topsoil rich in nutrients and organic matter will be lost so that land productivity will also decrease. Improving soil properties with application of organic matter and microorganisms useful for helping to increase availability of nutrients and soil fertility. This study aims to examine growth peanut plants on oil palm land with application organic matter and microorganisms. The study was conducted on the land of Jember State Polytechnic from December 2023 to March 2024. This study was designed using a nested design with 2 factors and 3 replications. The first factor is dose of organic matter, namely 0 tons/ha, 5 tons/ha, and 10 tons/ha. The second factor is nest factor or microorganisms consisting of control, rhizobium, rhizobium + mycorrhiza. The variables observed were plant height, number of leaves, stem diameter, number of branches and amount of leaf chlorophyll. The results showed that the treatment of microorganisms on organic matter had no significant effect on all variables. Meanwhile, the organic material treatment showed a very significant difference in number of leaves 24 HST (9 strands), stem diameter 17 HST (3.60 mm) and 24 HST (3.86 mm) and on variable number of branches 24 HST (9 branches). It is suspected organic materials can improve physical properties of soil so that nutrients in soil can be absorbed well by plant roots. Organic material treatment with a dose of 5 tons/ha can increase peanut plant production.

Key words: Peanuts, TBM Palm Oil, Organic Materials, Mikoriza, Rhizobium