

**GROWTH AND YIELD RESPONSE OF SORGUM (*Sorghum bicolor* L.)
PLANT TO THE APPLICATION OF BIOFERTILIZER *Rhizobium* spp.
AND CHICKEN MANURE FERTILIZER ON SANDY SOIL**

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ABSTRACT

*Sandy land is one of the marginal lands (low organic matter, low nutrients, low microorganisms, high porosity) that has the potential to be utilized for crop cultivation through good and proper management. This study aims to examine the growth and yield of sorghum plants on sandy land through the application of *Rhizobium* sp biofertilizer and organic chicken manure fertilizer. The experiment was designed using a completely randomized design (CRD) factorial with 2 factors. The first factor is *Rhizobium* sp consisting of control (without *Rhizobium* sp), *Rhizobium* sp from the root zone of rice, corn, edamame, soybeans, and peanuts. The second factor is the dose of chicken manure fertilizer consisting of 8 tons/ha, 10 tons/ha, and 12 tons/ha. The results showed that the application of *Rhizobium* sp was able to increase the growth of plant height (188.4 cm) and stem diameter (25 mm) and accelerate flowering (57 hst) in sorghum plants compared to without *Rhizobium* sp application (control). *Rhizobium* sp is able to stimulate the growth of sorghum plants through both direct and indirect mechanisms. Free-living *Rhizobium* sp is able to produce the hormone IAA which can be utilized by plants to stimulate their growth. Furthermore, the application of *Rhizobium* sp from the rhizosphere of corn plants has a significant effect in increasing plant height (199.9 cm), stem diameter (28.2 mm), flowering age (56 days after planting), and grain weight per panicle (157.9 g) in sorghum plants compared to *Rhizobium* spp from the rhizosphere of rice plants.*

Kata kunci: *biofertilizer, rhizobacteria, rhizosphere*