

**PENGARUH ASOSIASI *Rhizobium* sp. DAN BAKTERI PELARUT FOSFAT
TERHADAP PERTUMBUHAN DAN HASIL TANAMAN KEDELAI (*Glycine max* L)
DI TANAH PODSOLIK MERAH KUNING**

*Effect of Association *Rhizobium* sp. and Phosphate Solvent Bacteria on Growth and Yield
of Soybean in Red-Yellow Podsolik Soil*

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ABSTRACT

*The experiment purposed to examine the association of *Rhizobium* sp. and Phosphate Solvent Bacteria on growth and yield of soybean in Red-Yellow Podsolik soil and establishing suitable inoculum associations for soybean development in Red-Yellow Podsolik land. The research was conducted in Soil Laboratory, Agro-biotechnology Laboratory, Research Laboratory and Experimental area of Agriculture Faculty, Muhammadiyah University of Yogyakarta, at November 2017 until May 2018. The research was carried out by field experimental method, using a single factor experiment design with 4 treatments i.e.: without Inoculum, *Rhizobium* inoculum sp., Phosphate Solvent Bacteria inoculum and *Rhizobium* inoculum sp.with Phosphate Solvent Bacteria, compiled in Completely Randomized Design (CRD) planted in a Red-Yellow Podsolik soil. Observational variables were performed on nodulation activity, population dynamics of Phosphate solvent bacteria, root growth, vegetative growth and yield. The results showed that *Rhizobium* sp.-Bacterium of Phosphate Solvent simultaneously for soybean cultivation on Red-Yellow Podsolik soil significantly increased root growth, vegetative growth and seed yield reached 11.50 tons /ha.*

Keywords: Soybean, *Rhizobium* sp., Phosphate Solvent Bacteria, Red-Yellow Podsolik Soil.