

## ABSTRAC

Tiyas, Eka Dianing. 2011. The use of Multi Isolate Bacterial Solvents SP 36 Phosphate and Fertilizer Plant to Increase Soybean Productivity (Glysin Max (L.) Merr) in the Land of Sour. Supervisor: Dr. Ulfah Utami. M. Si, Dr. Ahmad Barizi. MA and Dra. Suryantini.

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Acid soils is soil that has a low pH. Constraints on acid soils is the high nutrient Al, Mn and Fe which can be toxic to plants and can bind with the nutrients that are beneficial to plants as nutrients phosphate (P) either the result of soil mineralization and organic form of P-fertilizer P be an element of Al-P, Mn-P, and Fe-P. So with such commitments, the provision of fertilizer P alone generally can not be provided by plants. One way to break the bonds of P nutrients with nutrients Al, Mn and Fe is done by using the soil microorganism that has functions of not available Phosphate dissolving become available to plants the bacteria solvent Phosphate (P). This researce aims to determine the effect of multiple isolates of bacterial inoculation solvent P and SP36 to increase the productivity of soybean plants (Glysin Max (L.) Merr) in acid soils.

This researce is compiled using Randomized Design Group (RAK) factorial, by two factors and using the test 3 times. The first factor is the factor by inoculation of bacterial isolates multi solvent Phosphate (P) and the second factor is the provision of fertilizer P SP 36. The data has been obtained will be analyzed by various analysis (F test) at the level of 5% to determine the effect of the treatment of observation variables, and the Duncan test level of 5% if has difference.

The results have showed the height plan increased in the treatment of bacterial inoculation of multiple isolates of solvent P SP36 M1 combined with as much as 3 grams / polybag, equivalent to 36 200 kg SP / ha (in field) with increasing 23.33 cm / plant increased from 53.17 cm / plant (control ) to 76.5 cm / plant. The weight of plant increased with the use of SP36 as much as 6 grams/ polybag that has the increase of 1.34 g / plant, from 0.58 g / plant (control) to 1.92 g/plant. Grain yield can be improved by using of SP36 as much as 3 g/polybag but with a higher dose of 6 g /polybag the seed yield can be increased 232 % (152 g / plant), from 2.07 g / plant (control) to 2.96 g/plant. 100 seeds weight increased in the inoculation treatments combined by using of M1 SP36 dose of 6 g/polybag, equivalent to 200 kg / ha (in field) that is 29% (2.12 g/plant) of 7.19 g / plant (control) to 9.31 g / plant.