DOSING APPLICATION OF AGROBACTERIUM FABRUM ON P-AVAILABLE, GROWING AND PRODUCTION OF G₃ POTATOES

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Abstract: The supply of potato seeds in Indonesia is still constrained by limited seed production. The limiting factor for potato seed production is the low soil pH. Soils in Indonesia have a low pH so that the P-available in the soil is relatively low. The intensive use of chemical fertilizers, especially element P, can have an impact on the condition of the soil. Inoculation of phosphate solubilizing bacteria to the soil is known to increase the availability of P. This study was to evaluate the effect of Agrobacterium fabrum phosphate solubilizing bacteria on plant growth, P-available and yield of G₃ potatoes. The experiment used a Randomized Block Design consisting of four treatments A. fabrum in a carrier at doses i.e., control without A. fabrum, 50 kg ha⁻¹ (12.5 × 10¹³ CFU A. fabrum ha⁻¹), 100 kg ha⁻¹ (25 × 10¹³ CFU A. fabrum ha⁻¹) and 150 kg ha⁻¹ (37.5 × 10¹³ CFU A. fabrum ha⁻¹) and was repeated six times. The parameters responses were average plant height, average number of leaves, P-available, number of Bulbs per plant, weight of Bulbs per plant, and Bulbs Weight per plot. The results showed that the application doses of A. fabrum affected the number of bulbs per plant, bulbs weight per plant, and Bulbs Weight per plot. The application doses of A. fabrum at 50 kg ha⁻¹ gave higher yield of G₃ potato seeds than control, ranging from 87-131% tons ha⁻¹. The dose of A. fabrum at 150 kg ha⁻¹ increased P-available by 91.53% compared to the control.

Key words: Agrobacterium fabrum, P-available, Production, Potato.

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