

**APPLICATION OF PAITAN FERTILIZER (*Tithonia Diversifolia*)
ON THE AVAILABILITY OF PHOSPHORUS AND PRODUCTIVITY OF
UPSTANDING BEAN PLANTS (*Phaseolus Vulgaris L.*) ON ANDISOL SOIL**

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ABSTRACT

Andosol soil contains allophane minerals which fixate phosphorus so that phosphorus becomes unavailable. This research aims to determine the effect of applying paitan fertilizer on the availability of P in Andisol soil in Kopeng Village, Getasan District, Semarang Regency. The research was conducted from September 2023 to January 2024 at the Amboja Farm Kaliurang Greenhouse. The research design method used for this research was a non-factorial Completely Randomized Design Method (CRD) 7 treatments with 3 replications so that a total of 21 treatments were obtained consisting of No Fertilizer (P0), Paitan Compost 10 tons/ha (P1), Paitan Compost 20 tons/ha (P2), Paitan Compost 30 tons/ha (P3), Paitan Leaves 10 tons/ha (P4), Paitan Leaves 20 tons/ha (P5), Paitan Leaves 30 tons/ha (P6). Data analysis uses Analysis of Variance (ANOVA) and DMRT Test at 5% level if there are significant differences. The results of the research show that the application of Paitan Compost Fertilizer and Fresh Paitan Leaves can increase the availability of phosphorus in Andisol Soil. The best treatment for P-Total and P-Available was treatment P5 with values of 156.67 mg/100g and 113 ppm. The best plant height growth was in treatment P5 with 58 cm, the highest number of leaves in treatment P3 with 39.33, the highest number of pods in treatment P3 with 6.67, and the heaviest wet weight of pods in treatment P5 with 20.33 grams.

Keywords : Andisol Soil, Bean Plants, Paitan Leaves, Paitan Compost, Phosphorus

