

**THE EFFECT OF FERTILIZER SP-36 AND CRAB SHELL FLOUR
PHOSPHORUS AVAILABILITY OF LATOSOL AND GROWTH
OF SWEET CORN (*Zea mays Saccharata Sturt.*)**

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ABSTRACT

The main problem of Latosol is the presence of high phosphate fixation because Latosol contains high levels of Al and Fe, which renders phosphorus unavailable for plant growth. The purpose of this research was to determine the effect of SP-36 fertilizer and crab shells and their interactions on the availability of P Latosol and the growth of sweet corn. The method used is a factorial Completely Randomized Design (CRD) method with two factors. The first factor is the dosage of SP-36 fertilizer at 0 kg/ha (P0), 50 kg/ha (P1), and 100 kg/ha (P2). The second factor is the dosage of crab shell flour at 0 ton/ha (K0), 1.6 ton/ha (K1), and 3.2 ton/ha (K2). The data are analyzed using analysis of variance (ANOVA) and when there is an interaction between treatment combinations continued with a DMRT test of a 5% level. The results indicated that the application of SP-36 increases significantly increases pH H₂O, Available P, plant height, leaf count, fresh shoot weight, dry shoot weight, fresh root weight, and dry root weight, while decreasing P Retention, Al-P, and Fe-P. The application of crab shell flour leads to an increase in pH H₂O, Available P, Ca-P, plant height, leaf count, fresh shoot weight, dry root weight, and a decrease in P Retention, Al-dd, and Al-P. The combination of SP-36 fertilizer and crab shell flour on Latosol resulted in an increase in pH H₂O by 22.70%, available P by 138.79%, and the height of sweet corn plants by 17.84%, while reducing P retention by 31.33%. The treatment combination P1K2, which consisted of 50 kg/ha of SP-36 (P1) and 3.2 tons/ha of crab shell flour (K2), was the optimal dose for increasing available P in Latosol and the growth of sweet corn plants.

Keywords: Latosol, SP-36 fertilizer, crab shells, and sweet corn