

***THE EFFECT OF FEEDING BOKASHI ENRICHED WITH EGGSHELL FLOUR AND ZEOLITE ON THE AVAILABILITY OF CALCIUM AND PHOSPHORUS IN LATOSOL AND LETTUCE GROWTH***

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***ABSTRACT***

Latosol is a type of soil with a wide distribution in Indonesia but is hampered mainly by the chemical properties of the soil. This is due to the hilly topography of the region with a tropical climate throughout the year and high rainfall continuously over a long period of time, thereby accelerating the process of mineralization and leaching of base cations such as Ca, thereby dominating the Al and Fe elements in the soil which are able to fix P so that the availability of the element Ca and P are low. This affects plant growth, one of which is lettuce. This research aims to determine the effect of providing bokashi enriched egg shell flour, zeolite and a mixture of both on the availability of calcium and phosphorus as well as the growth of lettuce plants in latosol soil. The research was carried out using a factorial Completely Randomized Design (CRD) with 2 factors, namely: The first factor, Bokashi enriches eggshell flour (P0 = 0 tons/Ha + 0 tons/Ha, P1 = 30 tons/Ha + 3,84 tons/Ha, P2 = 30 tons/ Ha + 7,68 tons/ Ha) and the second factor, Zeolite (Z0 = 0 tons/ Ha, Z1 = 2,5 tons/ Ha, Z2 = 5 tons/ Ha). The research results showed that bokashi enriched eggshell flour had a significant effect in increasing available P and Ca, reducing Al-dd and increasing plant height, number of leaves, wet plant weight, dry plant weight and root volume of lettuce plants. Zeolite has a significant effect in reducing Al-dd, increasing the number of leaves, plant wet weight, plant dry weight and root volume of lettuce plants. The combination of treatment between bokashi enriching egg shell flour and zeolite had a significant effect in increasing available P and Ca, reducing Al-dd, as well as increasing plant height, wet weight and dry weight of plants. The interaction of bokashi to enrich eggshell flour at a dose of 30 tons/Ha + 7,68 tons/Ha and zeolite equivalent to 5 tons/Ha is the best dose in increasing the P and Ca available in latosol.

**Keywords:** Bokashi, Calcium, Eggshell, Latosol, Lettuce, Phosphorus, Zeolite