Growth and Yield of Edamame* (*Glycine max (*L). Merril) *as Affected by NPK Fertilizer and Bokashi

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ABSTRACT

Edamame (Glycine max (L). Merril) is a high-value vegetable soybean with complete nutritional content, but national production has not yet been able to meet domestic and export market demand. One of the main challenges in edamame cultivation is a decline in productivity due to soil nutrient deficiencies, which is often exacerbated by excessive use of inorganic fertilizers. This study aims to examine the effects of NPK fertilizer and household waste bokashi application on the growth and yield of Ryoko 75 edamame plants, as well as to analyze the interaction between the two in efforts to sustainably increase harvest yields. The research was conducted from June to August 2025 in Patrang District, Jember Regency, East Java, using a two-factor Factorial Randomized Block Design (FRBD), namely three levels of bokashi doses, which are without bokashi treatment, (20 tons/ha), (30 tons/ha), and three doses of NPK fertilizer, which are (200 kg/ha), (150 kg/ha), (100 kg/ha). The observed parameters included plant height, number of pods per sample, pod weight per sample, pod weight per plot, biomass, content of the 2nd and 3rd pods, and root nodules. The application of bokashi and NPK fertilizer at a dose of (20 tons/ha + 200 kg/ha) showed a significant difference in plant height 28 days after planting (DAP), number of pods per 30.1 g sample, pod weight per sample of 93.3 g, pod weight per plot totaling 1293 g, percentage of 2nd and 3rd pod contents of 30 g, and root nodules of 12.4 g. For the parameters of plant height at 14 and 21 DAP and biomass, the results were not significant.

Keywords : *, Bokashi, Soybean, NPK*