RESPONSE OF EDAMAME (Glycine max (L). Merril) PLANT GROWTH AND YIELD TO THE APPLICATION OF BOKASHI AND PGPR BIOSTIMULANTS

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ABSTRACT

Edamame (Glycine max (L). Merril) is a high-value food commodity, but its production in Indonesia is still not optimal due to dependence on inorganic fertilizers. The use of organic fertilizers such as bokashi and PGPR can be an alternative to improve soil quality and enhance Edamame growth. The objective of this study was to determine the interaction between the application of bokashi and PGPR biostimulants on Edamame soybean plants. The study was conducted from July to October 2025 in Sumberlangon Krajan Village, Patrang District, Jember Regency. The method used was a factorial randomized block design (RAK) with two factors, namely bokashi dosage (0, 15, and 30 tons/ha) and PGPR concentration (0, 20, and 30 ml/L), each repeated three times. The parameters observed included plant height, stem diameter, pod weight per sample, pod weight per plot, number of pods per sample, percentage of pods containing 2–3 seeds, and dry biomass weight. The data were analyzed using analysis of variance (ANOVA) and followed by DMRT tests at 5% and 1% levels. The results showed a significant interaction between bokashi and PGPR on the parameters of plant height (25.8 cm), stem diameter (5.4 mm), and pod weight per plot. The treatment of 30 tons/ha of bokashi and 30 ml/L of PGPR gave the best results with the highest pod weight per plot (2092 g). Meanwhile, pod weight per sample, number of pods, and pods containing 2 and 3 seeds did not affect any of the treatments. In general, the application of bokashi and PGPR was able to increase the growth and yield of Edamame, making it a potential alternative for sustainable cultivation technology.

Keywords: *Bokashi, PGPR Biostimulant, Soybean*