GROWTH AND YIELD OF EDAMAME (*Glycine max* (L.) merril) TO THE APPLICATION OF BIOCHAR COATED UREA

Supervised by Christa Dyah Utami, S.P., M.P.

Agi Mulyo Jatmiko
Study Program of Food Crop Production Technology
Department of Agricultural Production

ABSTRACT

Excessive use of urea fertilization is one of the causes of decreased edamame productivity. To address this problem, the use of biochar made from corn cobs, need to be implemented. The purpose of this study is to examine the effect of applying urea coated with biochar on the growth and yield of edamame plants. This study was conducted over three months from August to October 2025 in Antirogo District, Jember Regency, East Java, Indonesia. The study used RCBD (Randomized Complete Block Design) with the factor of urea coated with biochar. The treatment levels are as follows: Urea (200 kg/ha); Urea coated with biochar 1:1 (100 kg/ha : 100 kg/ha); Urea coated with biochar 1:2 (75 kg/ha : 125 kg/ha); Urea coated with biochar 1:3 (50 kg/ha : 150 kg/ha); and Urea coated with biochar 1:4 (25 kg/ha : 175 kg/ha). The observed parameters included plant height at 7 DAS, plant height at 14 DAS, plant height at 21 DAS, number of productive branches, number of pods per sample, pod weight per sample, pod weight per plot, fresh biomass weight, and 100-seed weight. The results showed that corn cob biochar urea at 100 kg/ha urea + 100 kg/ha biochar provided the best results for the parameters of plant height at 21 DAS and productive branches. At a dose of 25 kg/ha urea + 175 kg/ha biochar, it affected the best number of pods per sample, pod weight per sample, pod weight per plot, and 100-seed weight. For the parameters of plant height at 7 DAS, plant height at 14 DAS, and fresh biomass weight, the results were not significant. It can be concluded that the treatment of urea coated with biochar can improve the growth and yield of edamame plants.

Keywords: Biochar, Edamame, Urea