

**Sustainability of Growth and Production Edamame Plants (*Glycine max* L. Merrill)
Through Planting Density and Application of NPK Fertilizer Doses
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ABSTRACT

Edamame (*Glycine max* L. Merrill) is a food crop commodity that has opportunities for export. The need for fresh edamame continues to increase while the availability edamame has not met this need. So it is necessary to develop edamame production to meet local and export market needs. This research was conducted with the aim of knowing the effect of setting spacing and application of NPK Phonska Fertilizer. This research was conducted in August-December 2022 at the Jember State Polytechnic. The design used was factorial randomized block design (RDB) with 2 factors, namely plant spacing and doses of NPK fertilizer, there were 9 treatment combinations and repeated 3 times. The spacing treatment consisted of 3 levels, namely 30 cm x 20 cm, 25 cm x 15 cm and 20 cm x 10 cm x 40 cm (jajar legowo). While there are 3 levels of NPK fertilizer including 300 Kg/ha, 350 Kg/ha and 400 Kg/ha. The research that has been done shows that the spacing of 30 cm x 20 cm is significantly different in the number of productive branches (5,58), the weight of dry stover roots (1,78 g), the number of pods per sample (25,75) and the weight of pods per sample (41,50 g). Plant Spacing of 25 cm x 15 cm significantly different effect on the number of root nodules of 76,72. While the spacing of 20 cm x 10 cm x 40 cm (jajar legowo) significantly different effect the pod weight per plot of 2,03 Kg/2,2 cm² (9,23 ton/ha). The application of NPK fertilizer doses had a significantly different effect on weight of dry stover shoots. And there is no interaction between spacing treatment and application of NPK fertilizer dose.

Keywords : Edamame, NPK Phonska, Planting Distance