

**APPLICATION OF VERMICOMPOST AND GIBBERELLIN TO THE
GROWTH AND YIELD OF EDAMAME SOYBEAN (*Glycine max* L.
Merrill)**

By: Anindita Nur Fauziyya
Supervised by: Oktavia S. Padmini and Endah Budi Irawati

ABSTRACT

The use of inorganic fertilizers in the long term causes soil damage, therefore vermicompost fertilizer is used as a substitute for inorganic fertilizers and gibberellin to increase yield. The aim of the research was to obtain the best vermicompost dosage and gibberellin concentration for growth and yield of edamame soybean. The research was carried out at the Wedomartani Practical Garden, Ngemplak, Sleman, Yogyakarta Special Region in September-November 2022. The research used a factorial experiment method (3 x 3) + 1 which was arranged in a complete randomized block design with 3 replications. Factor I vermicompost doses consisted of 3 levels namely, 15 tons.ha⁻¹, 20 tons.ha⁻¹, and 25 tons.ha⁻¹. Factor II gibberellin concentration consists of 3 levels namely, 150 ppm, 200 ppm, and 250 ppm, as well as control plants according to the farmer. Data were analyzed using variance at 5% level then followed by DMRT test at 5% level. There was an interaction of vermicompost and gibberellin on the parameters of plant height and number of primary branches at 35 *DAP*, the best treatment combination was 20 ton/ha worm casting and 200 ppm gibberellin and 25 ton/ha worm casting and 200 ppm gibberellin. Vermicompost dose of 20 tons.ha⁻¹ gave the best yield on the parameters of pod weight per plant, number of pods per plant, seed weight per plant, 100 seeds weight, and pod weight per ha. Gibberellin concentration of 200 ppm gave the best yield on weight of 100 seeds.

Key words: edamame, vermicompost, gibberellin