

## ABSTRAK

### UJI FORMULASI *BIOFERTILIZER* PT. GREAT GIANT PINEAPPLE DAN KARAKTERISASI IAA DENGAN PENAMBAHAN *VERMICOMPOST TEA* TERHADAP PERTUMBUHAN TANAMAN JAGUNG (*Zea mays* L.)

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Jagung merupakan salah satu tanaman pangan strategis dengan nilai ekonomi tinggi, sehingga peningkatan produktivitasnya menjadi perhatian penting melalui pengelolaan kesuburan tanah secara berkelanjutan. Penelitian ini bertujuan mengevaluasi aktivitas *Indole Acetic Acid* (IAA) pada *biofertilizer* dari PT. Great Giant Pineapple dengan penambahan *vermicompost tea* selama empat minggu penyimpanan, serta pengaruhnya terhadap pertumbuhan vegetatif tanaman jagung (*Zea mays* L.). Penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan variasi perbandingan *vermicompost tea* dan air (1:3, 1:5, 1:10) yang diaerasi selama 96 jam. Aktivitas IAA dianalisis melalui spektrofotometri UV-VIS menggunakan kurva standar, sedangkan pertumbuhan tanaman dievaluasi berdasarkan tinggi tanaman, jumlah daun, diameter batang, berat basah, dan berat kering melalui analisis ANOVA dan uji lanjut Beda Nyata Jujur (BNJ) pada taraf 5%. Hasil penelitian menunjukkan bahwa aktivitas IAA meningkat selama 4 minggu, dengan formulasi P3 memberikan pengaruh paling signifikan terhadap jumlah daun, berat basah, dan berat kering tanaman dibandingkan perlakuan lainnya, menegaskan bahwa IAA berperan penting dalam merangsang pertumbuhan vegetatif jagung melalui peningkatan aktivitas fisiologis dan akumulasi biomassa.

**Kata kunci:** Jagung, *vermicompost tea*, *Indole Acetic Acid* (IAA), *biofertilizer*, fase vegetatif.

## ABSTRACT

### BIOFERTILIZER FORMULATION TESTING OF PT GREAT GIANT PINEAPPLE AND CHARACTERIZATION OF IAA WITH THE ADDITION OF VERMICOMPOST TEA ON THE GROWTH OF CORN (*Zea mays* L.)

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Maize is one of the strategic food crops with high economic value; therefore, efforts to increase its productivity are crucial, particularly through sustainable soil fertility management. This study aimed to evaluate the activity of Indole Acetic Acid (IAA) in a biofertilizer produced by PT Great Giant Pineapple with the addition of vermicompost tea over four weeks of storage, as well as its effect on the vegetative growth of maize (*Zea mays* L.). The experiment employed a Completely Randomized Design (CRD) with variations in the ratio of vermicompost tea to water (1:3, 1:5, and 1:10), aerated for 96 hours. IAA activity was analyzed using UV–Vis spectrophotometry based on a standard calibration curve, while plant growth was evaluated through parameters including plant height, number of leaves, stem diameter, fresh weight, and dry weight. Data were analyzed using Analysis of Variance (ANOVA), followed by the Honestly Significant Difference (HSD) test at a 5% significance level. The results showed that IAA activity increased over the four-week storage period, with the P3 formulation exhibiting the most significant effect on leaf number, fresh weight, and dry weight compared to other treatments. These findings indicate that IAA plays an important role in stimulating vegetative growth in maize by enhancing physiological activity and biomass accumulation.

**Keywords:** Maize, vermicompost tea, *Indole-3-Acetic Acid* (IAA), biofertilizer, vegetative phase.