

## ABSTRAK

### **PENGARUH PUPUK TEKNOLOGI NANO BERBASIS EKSTRAK ORGANIK (RUMPUT LAUT, GULMA TITONIA, SABUT KELAPA, DAN PUKAN AYAM) DAN ECO ENZYME TERHADAP PERTUMBUHAN, PRODUKSI DAN KUALITAS TANAMAN JAGUNG MANIS (*Zea mays saccharata* Sturt.)**

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Jagung manis (*Zea mays saccharata* Sturt.) merupakan salah satu komoditas hortikultura yang memiliki nilai ekonomi tinggi serta banyak dikonsumsi karena rasa manis dan kandungan gizinya. Penelitian ini bertujuan untuk mengetahui pengaruh pupuk teknologi nano berbasis ekstrak organik (rumput laut, gulma titonia, sabut kelapa, dan pukan ayam) serta eco enzyme terhadap pertumbuhan, produksi, dan kualitas tanaman jagung manis, serta mengetahui adanya interaksi di antara keduanya. Penelitian dilaksanakan di Kebun Lapang Kota Sepang Jaya, Bandar Lampung, pada November 2025 hingga Januari 2026 menggunakan rancangan acak kelompok (RAK) faktorial dengan 3 ulangan. Faktor pertama adalah POC nano (0, 5, dan 10 ml/L) dan faktor kedua adalah eco enzyme (0, 1, dan 2 ml/L). Variabel yang diamati meliputi tinggi tanaman, kehijauan daun, waktu tasseling dan silking, tinggi tongkol, panjang tongkol, kadar sukrosa, susut bobot, serta produksi per petak. Hasil penelitian menunjukkan bahwa pemberian POC nano dan eco enzyme berpengaruh terhadap beberapa parameter pertumbuhan dan hasil tanaman. Kombinasi perlakuan tertentu pada POC nano 10 ml/L meningkatkan panjang tongkol, brix, produksi per petak, dan bobot 200 biji. Eco enzyme 2 ml/L meningkatkan tinggi tanaman, kehijauan daun, brix, dan bobot 200 biji. Interaksi perlakuan nyata pada bobot segar 200 biji dan menurunnya susut bobot. Secara umum, integrasi pupuk teknologi nano berbasis organik dan eco enzyme berpotensi sebagai alternatif pemupukan ramah lingkungan untuk meningkatkan produktivitas jagung manis.

**Kata kunci:** jagung manis, pupuk teknologi nano, pupuk organik cair, eco enzyme, pertumbuhan, produksi.

## **ABSTRACT**

### **THE EFFECT OF NANOTECHNOLOGY FERTILIZER BASED ON ORGANIC EXTRACT (SEAWEED, TITONIA WEED, COCONUT FIBER, AND CHICKEN MANURE) AND ECO ENZYME ON THE GROWTH, PRODUCTION, AND QUALITY OF SWEET CORN (*Zea mays saccharata* Sturt.)**

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*Sweet corn (*Zea mays saccharata* Sturt.) is a horticultural commodity that has high economic value and is widely consumed due to its sweet taste and nutritional content. This study aims to determine the effect of organic extract-based nanotechnology fertilizer (seaweed, titonia weed, coconut fiber, and chicken manure) and eco enzyme on the growth, production, and quality of sweet corn plants, and to determine the interaction between the two. The study was conducted at the Sepang Jaya City Field Garden, Bandar Lampung, from November 2025 to January 2026 using a factorial randomized block design (RAK) with 3 replications. The first factor was nano POC (0, 5, and 10 ml/L) and the second factor was eco enzyme (0, 1, and 2 ml/L). The variables observed included plant height, leaf greenness, tasseling and silking time, cob height, cob length, sucrose content, weight loss, and production per plot. The results showed that the administration of POC nano and eco enzyme affected several parameters of plant growth and yield. A specific treatment combination of POC nano 10 ml/L increased cob length, brix, production per plot, and 200-seed weight. Eco enzyme 2 ml/L increased plant height, leaf greenness, brix, and 200-seed weight. The treatment interaction was significant on the fresh weight of 200 seeds and decreased weight loss. In general, the integration of organic-based nanotechnology fertilizer and eco enzyme has the potential as an alternative environmentally friendly fertilization to increase sweet corn productivity.*

**Keywords:** *sweet corn, nano-fertilizer, liquid organic fertilizer, eco-enzyme, growth, production.*