

## **ABSTRACT**

### **POT TEST APPLICATION OF FERTILIZER COMPOST PELET IN SWEET CORN (ZEA MAYS SACCHARATA L.)**

By

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*Corn (Zea mays saccharata L.) is a grass plant and has a single seed (monocot). Corn is a vigorous, slightly clumped grass with rough stems and ranges from 0.6 - 3 m in height. Corn plants are a seasonal plant species with an age of  $\pm$  3 months. Fulfillment of nutrients in plants can take advantage of empty fruit bunches of mushrooms used as one of the raw materials for organic fertilizer, where empty fruit bunches of palm oil used for straw mushrooms have the potential to improve the quality of organic fertilizer. However, the organic fertilizer of oil palm empty fruit bunches has a large enough volume, so that making pellets from oil palm empty fruit bunches is one way to make it easier to use, store, transport, and apply compost. This study aims to analyze the effect of the concentration of compost pellets with the addition of inorganic fertilizer NPK on the growth and yield of sweet corn plants. This study used a completely randomized design (CRD) with 6 treatments, namely the application of NPK compost pellets (P1), crumb compost and NPK fertilizer (P2), NPK fertilizer (P3), crumb compost fertilizer (P4), compost pellets without NPK (P5), and without fertilizer application as a control (P6) and repeated 3 times for each treatment so that there were 18 experimental units. Parameters for observation consisted of plant height (cm), number of leaves (strands), water consumption (ml), fresh stover weight (g), fresh root weight (g), dry crown weight (g), dry root weight (g), root length (cm), first day of flowering, first day of fruiting, data on maize yield, number of corn husks, wet weight of corn husks (g), water productivity (kg/m<sup>3</sup>), and plant moisture content (%). The results*

*of this study are showing a real influence on all observation parameters. Based on the growth and yield of sweet corn per treatment, the best results were found in the addition of crumb compost + conventional NPK fertilizer (P2), namely plant height (194.7 cm), number of leaves (12 strands), water consumption (390.96 ml), fresh chestnut weight (202 g), fresh root weight (61.7 g), dry coconut weight (72.7 g), dry root weight (18.36 g), root length (44.38 cm), development flower (48 DAP), and fruit (56 DAP) and fruit yield including fruit weight (107.5 g), cob diameter (3.9 cm), cob length (24 cm), number of fruit shells (81 shells) and weight shelled (12.58 g).*

*Keywords: Sweet corn, compost, NPK, pelet*

## **ABSTRAK**

### **UJI POT APLIKASI PUPUK KOMPOS PELET PADA BUDIDAYA TANAMAN JAGUNG MANIS (*Zea Mays Saccharata L.*)**

Oleh  
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Tanaman jagung (*Zea mays saccharata L.*) merupakan tanaman rumput-rumputa dan berbiji tunggal (monokotil). Jagung merupakan tanaman rumput kuat, sedikit berumpun dengan batang kasar dan tingginya berkisar 0,6 -3 m. Tanaman jagung termasuk jenis tumbuhan musiman dengan umur  $\pm$  3 bulan. Pemenuhan unsur hara pada tanaman dapat memanfaatkan tandan kosong kelapa sawit bekas jamur merang sebagai salah satu bahan baku pupuk organik, dimana TKKS bekas jamur merang memiliki potensi untuk memperbaiki kualitas pupuk organik. Akan tetapi, pupuk organik TKKS memiliki volume yang cukup besar, sehingga pembuatan pelet dari TKKS merupakan salah satu cara untuk memudahkan dalam penggunaan, penyimpanan, transportasi, dan aplikasi pupuk kompos. Penelitian ini bertujuan untuk menganalisis pengaruh konsentrasi pupuk kompos pelet dengan penambahan pupuk anorganik NPK terhadap pertumbuhan dan hasil tanaman jagung manis. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan 6 perlakuan yaitu pemberian pupuk kompos pelet NPK (P1), pupuk kompos remah dan NPK (P2), pupuk NPK (P3), pupuk kompos remah (P4), pupuk kompos pelet tanpa NPK (P5), dan tanpa pemberian pupuk sebagai kontrol (P6) dan diulang sebanyak 3 kali setiap perlakuan sehingga terdapat 18 unit percobaan. Parameter pengamatan terdiri dari tinggi tanaman (cm), jumlah daun (helai), konsumsi air (ml), bobot brangkas segar(g), bobot akar segar (g), bobot tajuk kering (g), bobot akar kering (g), panjang akar (cm), hari pertama berbunga, hari pertama berbuah, data hasil jagung, Jumlah pipian jagung, berat basah pipilan

jagung (g), produktivitas air ( $\text{kg/m}^3$ ), dan kadar air tanaman (%). Hasil penelitian ini yaitu menunjukkan pengaruh nyata terhadap seluruh parameter pengamatan. Berdasarkan pertumbuhan dan hasil panen tanaman jagung manis per perlakuan diperoleh hasil terbaik terletak pada perlakuan penambahan pupuk kompos remah + NPK konvensional (P2) yaitu tinggi tanaman (194,7 cm), jumlah daun (12 helai), konsumsi air (390,96 ml), bobot berangkasan segar (202 g), bobot akar segar (61,7 g), bobot berangkasan kering (72,7 g), bobot akar kering (18,36 g), panjang akar (44,38 cm), perkembangan bunga (48 HST), dan buah (56 HST) serta hasil buah meliputi berat buah (107,5 g), diameter tongkol (3,9 cm), panjang tongkol (24 cm), jumlah pipilan buah (81 pipilan) dan berat pipilan (12,58 g).

Kata kunci : Jagung manis, pupuk kompos, NPK, pelet