ANALISIS KANDUNGAN ASAM HUMAT, ASAM FULVAT DAN BAHAN ORGANIK PARTIKULAT DENGAN APLIKASI KOMPOS KOTORAN AYAM PADA RHIZOSFER TANAMAN JAGUNG MANIS (*Zea mays* saccharata) DI ULTISOL

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ABSTRAK

Rhizosfer merupakan tanah yang berada disekitar perakaran tanaman dan pusat aktivitas biologis yang tinggi dimana proses dekomposisi dan humifikasi bahan organik berlangsung secara intensif. Penelitian ini bertujuan untuk mengkaji kandungan asam humat, asam fulvat dan bahan organik partikulat serta pertumbuhan dan produksi tanaman dengan aplikasi kompos kotoran ayam pada rhizosfer tanaman jagung manis (*Zea mays saccharata*) di Ultisol. Penelitian dilakukan dengan menggunakan Rancangan Acak Kelompok (RAK) yang terdiri dari 4 perlakuan (0, 9, 18 dan 27 ton/ha kompos kotoran ayam) dan 3 kelompok. Parameter yang dianalisis adalah asam humat, asam fulvat, bahan organik partikulat, pH, al-dd, c-organik, p-tersedia dan n-total. Hasil terbaik ditunjukkan pada perlakuan 27 ton/ha kompos kotoran ayam. Hasil yang diperoleh dari penelitian ini yaitu kandungan asam humat (1,00%), asam fulvat (0,27%), bahan organik partikulat (0,96%). Nilai sifat kimia tanah di daerah rhizosfer yaitu pH tanah 5,66, kandungan Al-dd 1,23 me/100g, C-organik 1,12%, P-tersedia tanah 10,3 ppm, N-total tanah 0,36%. Nilai pertumbuhan jagung manis 170,96 cm, dan hasil jagung manis 26,17 ton/ha. Berdasarkan hasil penelitian tersebut disarankan untuk menerapkan pemberian kompos kotoran ayam yang ideal untuk mendapatkan pertumbuhan dan hasil jagung manis yang optimal pada Ultisol kelurahan kuranji yaitu dengan pemberian kompos kotoran ayam sebanyak 27 ton/ha.

Kata kunci: Asam Fulvat, Asam Humat, Bahan Organik Partikulat, Kompos Kotoran Ayam, Rhizosfer

ANALYSIS OF HUMIC ACID, FULVIC ACID, AND PARTICULATE ORGANIC MATTER CONTENT AFTER CHICKEN MANURE COMPOST APPLICATION AT THE RHIZOSPHERE OF SWEET CORN (*Zea mays saccharata*) IN ULTISOL

ABSTRACT

The rhizosphere is the soil surrounding plant roots and serves as a center of intense biological activity, where the decomposition and humification of organic matter occur intensively. This study was aimed to evaluate the content of humic acid, fulvic acid, and particulate organic matter, as well as the growth and yield of sweet corn after application of chicken manure compost in the rhizosphere of sweet corn (Zea mays saccharata) grown in Ultisol. The study was conducted using a Randomized Block Design (RBD) consisting of four treatments (0, 9, 18, and 27 T/H of chicken manure compost) and three replications. The parameters analyzed were humic acid, fulvic acid, particulate organic matter, pH, Al-exchangeable, organic-C, available phosphorus, and total nitrogen. The results showed that compost of the chicken manure improved the properties of sweet corn rhizosphere. The best treatment was observed at the application of 27 tons/ha of chicken manure compost. It was indicated by the higtest humic acid (1.00%), fulvic acid (0.27%), and particulate organic matter (0.96%) content. The chemical properties of the rhizosphere were also improved, such as the pH was 5.66, exchangeable-Al was 1.23 me/100g, organic-C was 1.12%, available phosphorus (P) was 10.3 ppm, and total nitrogen (N) was 0.36%. Sweet corn plant had 170.96 cm height, and 26.17 T/H yield. Based on these findings, it was recommended to apply chicken manure compost at a rate of 27 tons/ha to achieve optimal growth and yield of sweet corn at Ultisol in Kuranji subdistrict.

Keywords: Chicken Manure Compost, Fulvic Acid, Humic Acid, Particulate Organic Matter, Rhizosphere