

Intisari

Kegiatan peternakan ayam telah memberikan produk samping yang melimpah berupa kotoran kandang ayam yang belum dimanfaatkan secara optimal. Penggunaan arang sebagai pembenah tanah dengan memanfaatkan kotoran kandang ayam merupakan salah satu alternatif dalam upaya memperbaiki sifat tanah sehingga pertumbuhan tanaman dapat ditingkatkan. Penelitian ini bertujuan: mengetahui pengaruh pemberian arang berbasis kotoran kandang ayam terhadap sifat kimia tanah dan pertumbuhan jagung manis pada Inceptisol. Penelitian ini dilakukan di PIAT UGM menggunakan rancangan penelitian adalah Rancangan Acak Lengkap (RAL) dengan 6 perlakuan dan 4 ulangan. Perlakuan terdiri dari P1 (tanpa pemupukan), P2 (pemupukan kompos daun), P3 (pemupukan NPK), P4 (pemupukan NPK+1% arang berbasis kotoran kandang ayam), P5 (pemupukan NPK+2% arang berbasis kotoran kandang ayam), dan P6 (pemupukan NPK+3% arang berbasis kotoran kandang ayam). Variabel sifat kimia tanah yang diamati adalah pH tanah, C-organik, bahan organik, nitrogen total, fosfor total, kalium tersedia, dan KPK tanah. Variabel pertumbuhan tanaman yang diamati adalah tinggi tanaman, jumlah daun, panjang akar, bobot tajuk, bobot akar, bobot tongkol, dan diameter tongkol. Data hasil analisis tanah dan pengamatan parameter tanaman dianalisis sidik ragam (*analysis of variance*) dan perlakuan yang menunjukkan beda nyata dianalisis dengan menggunakan *Duncan Multiple Range Test* (DMRT) dengan tingkat signifikansi 5%. Hasil penelitian menunjukkan pemberian arang berbasis kotoran kandang ayam antar perlakuan menunjukkan beda nyata terhadap pertumbuhan tanaman jagung manis seperti tinggi tanaman, bobot segar tajuk, bobot segar akar, bobot kering akar, dan diameter tongkol. Pemberian arang berbasis kotoran kandang ayam berpengaruh nyata terhadap parameter sifat kimia tanah seperti pH tanah, C-organik, bahan organik, nitrogen total, fosfor total, dan kalium tersedia tanah. Perlakuan yang paling mempengaruhi pertumbuhan tanaman jagung manis adalah P6 (pemupukan NPK+ 3% arang berbasis kotoran kandang ayam).

Kata kunci : arang berbasis kotoran kandang ayam, pemupukan, jagung manis, inceptisol

Abstract

Poultry farming activities result in abundant by product poultry litter that is not used optimally yet. Use of charcoal and soil conditioner by utilize feces of chicken is an alternative for improving soil characteristic that in turn can improve plant growth. This research was intended to know the influence poultry litter based charcoal to chemical properties of the soil and sweet corn growth in Inceptisol. This research was conducted in PIAT UGM use completely randomized design, with 6 treatment and 4 replications. The treatment consist of P1 (without fertilizing), P2 (leaf compos fertilization), P3 (NPK fertilization), P4 (NPK fertilizing+1% poultry litter based charcoal), P5 (NPK fertilizing+2% poultry litter based charcoal), dan P6 (NPK fertilizing+3% poultry litter based charcoal). The variable of chemical properties of soil observed were soil pH, C-organic, organic matter, total nitrogen, total phosphor, available potassium, and cation exchange capacity of soil. The variable of plant growth observed were plant height, number of leaves, root length, crown weight, root weight, corncob weight, and corncob diameter. The data analysis of soil and plant growth parameters was analyzed by multiformity investigation (analysis of variance) and the result showed significant differences using Duncan Multiple Range Test (DMRT) at significant levels of 5%. The result showed poultry litter based charcoal between treatmens showed significantly different on the growth of sweet corn plants such as plant height, fresh weight crown, fresh root weight, root dry weight and corncob diameter. Providing poultry litter based charcoal has significant impact on soil chemical characteristic such as soil pH, C-organic, organic matter, total nitrogen, total phosphor, and available potassium of soil. The treatment that most favorably affect on the sweet corn growth was P6 (NPK fertilizing+3% poultry litter based charcoal).

Keywords : poultry litter based charcoal, fertilization, sweet corn, inceptisol