KETERSEDIAAN UNSUR HARA N PADA BUDIDAYA TANAMAN PADI SAWAH *(Oryza sativa* L.*)* YANG DIAPLIKASI ABU TANDAN KOSONG KELAPA SAWIT PLUS

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Ketersediaan Unsur Hara N Pada Budidaya Tanaman Padi Sawah (*Oryza Sativa* L.) yang Diaplikasi Abu Tandan Kosong Kelapa Sawit Plus

Abstrak

Nitrogen pada kondisi tanah yang tergenang mudah tercuci dan hilang ke udara, salah satu cara menjaga dan meningkatkan ketersediaan nitrogen pada tanah sawah yaitu pemberian pupuk organik abu tandan kosong kelapa sawit (ATKKS) plus. Tujuan penelitian adalah untuk mengkaji aplikasi pupuk organik abu tandan kosong kelapa sawit plus pada tanah sawah terhadap ketersediaan unsur hara pada tanah sawah. Metode yang digunakan dalam penelitian adalah Rancangan Acak kelompok (RAK), terdiri dari 5 perlakuan (yaitu kontrol, ¾ pupuk sintetis, 2, 4, dan 6 ton/ha pupuk abu tandan kosong kelapa sawit plus dan pupuk sintetis) dengan 3 kali ulangan. Parameter yang dianalisis adalah nilai pH, C-organik, N-total, N-tersedia dan KTK, serta pertumbuhan dan hasil padi sawah. Hasil tertinggi ditunjukkan oleh perlakuan 6 ton/ha pupuk abu tandan kosong kelapa sawit plus dan pupuk sintetis. Meningkatkan pH tanah (7,15), kadar C-organik (3,37%), kadar N-total (0,26%), kadar N tersedia NH_4^+ (33,76 ppm), NO_3^- (16,83 ppm) dan KTK (25,77 cmol/kg), akan tetapi perlakuan paling efektif dan efisien terdapat pada perlakuan 4 ton/ha pupuk abu tandan kosong kelapa sawit plus dan pupuk sintetis. Berdasarkan hasil penelitian, disarankan memberikan dosis 4 ton/ha pupuk abu tandan kosong kelapa sawit plus dan pupuk sintetis untuk hasil padi sawah pada Ultisol di Limau Manis, Kecamatan Pauh, Kota Padang.

Kata Kunci : *Nitrogen, Pupuk Abu Tandan Kosong Kelapa Sawit Plus, Pupuk Sintetis, Tanah Sawah*

The Availability of Nutrient N in Wetland Rice Cultivation (*Oryza Sativa* L.) Applied with Empty Oil Palm Bunch Ash Plus

Abstract

Under flooded soil conditions is easily leached and lost to the air. One effective method to maintain and boost nitrogen availability in paddy fields is through the application of organic fertilizer like empty oil palm bunch ash (ATKKS) plus. The research objective is to evaluate the application of organic fertilizer from empty oil palm bunch ash plus in paddy fields regarding nutrient availability in the soil. The method employed in the study is a Randomized Complete Block Design (RCBD), comprising 5 treatments (control, ¾ synthetic fertilizer, 2, 4, and 6 tons/ha of empty oil palm bunch ash plus organic fertilizer and synthetic fertilizer) with 3 replications. Parameters analyzed included pH value, organic C, total N, available N, and Cation Exchange Capacity (CEC), alongside the growth and yield of paddy rice. The highest results were demonstrated by the treatment of 6 tons/ha of empty oil palm bunch ash plus organic fertilizer and synthetic fertilizer. This treatment led to an increase in soil pH (7.15), organic C content (3.37%), total N content (0.26%), available NH_4^+ N content (33.76 ppm), NO_3^- content (16.83 ppm), and CEC (25.77 cmol/kg). However, the most effective and efficient treatment was observed with 4 tons/ha of empty oil palm bunch ash plus organic fertilizer and synthetic fertilizer. Based on the research findings, it is recommended to apply a dose of 4 tons/ha of empty oil palm bunch ash plus organic fertilizer and synthetic fertilizer for paddy rice yield at Ultisol in Limau Manis, Pauh District, Padang City.

Keywords: *Empty Oil Palm Bunch Ash Plus Fertilizer, Nitrogen, Paddy Soil Synthetic Fertilizer*