ABSTRAK

PERILAKU PERTUKARAN KALIUM DI TANAH ULTISOL DAN KALIUM TERPANEN PADA TANAMAN JAGUNG *(Zea mays* L.*)* AKIBAT PERLAKUAN OLAH TANAH DAN PEMUPUKAN PADA MUSIM TANAM KE-9

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Tanah Ultisol umumnya memiliki kesuburan yang rendah yang mengakibatkan unsur hara salah satunya kalium rendah. Namun peningkatan kesuburan tanah Ultisol dapat dilakukan melalui pengolahan tanah dan pemupukan. Penelitian bertujuan untuk mengetahui pengaruh perlakuan olah tanah dan pemupukan dalam meningkatkan parameter Q/I kalium (PBC_K, CR_K^0, ΔK^0 dan K_G) dan kalium terpanen pada tanaman jagung, interaksi dan korelasi antara parameter Q/I dengan kalium terpanen akibat perlakuan olah tanah dan pemupukan. Penelitian ini dirancang dalam Rancangan Acak Kelompok (RAK) yang disusun secara faktorial (2×2) dengan 4 kelompok. Faktor pertama adalah perlakuan sistem olah tanah (T) yaitu T_1 = olah tanah minimum, dan T_2 = olah tanah intensif. Faktor kedua dalam penelitian ini adalah pemupukan (P) yaitu P_0 = pemupukan setengah (pupuk NPK 175 kg ha^{-1} + pupuk urea 75 kg ha^{-1} + pupuk kandang ayam 2,5 Mg ha^{-1}) dan P_1= pemupukan penuh (pupuk NPK 350 kg ha^{-1} + pupuk urea 150 kg ha^{-1} + pupuk kandang ayam 5 Mg ha^{-1}). Hasil penelitian ini menunjukkan bahwa olah tanah minimum dan pemupukan penuh berpengaruh nyata meningkatkan parameter Q/I kalium (CR_K^0, ΔK^0, dan K_G), dan kalium terpanen pada tanaman jagung. Terdapat interaksi pada perlakuan olah tanah minimum dan pemupukan penuh terhadap parameter Q/I kalium. Terdapat korelasi positif antara KTK dengan serapan K jagung dan K-dd dengan produksi jagung.

Kata kunci : Kalium, Jagung, Olah tanah minimum, Olah tanah intensif, Pupuk NPK, Q/I Kalium.

ABSTRACT

POTASSIUM EXCHANGE BEHAVIOR IN ULTISOL SOIL AND HARVESTED POTASSIUM IN CORN (*Zea mays* L.) DUE TO SOIL CULTIVATION AND FERTILIZER TREATMENT IN THE 9TH PLANTING SEASON

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Ultisol soil generally has low fertility which results in low nutrient content, one of which is low potassium. However, increasing the fertility of Ultisol soil can be done through soil processing and fertilization. The study aims to determine the effect of tillage and fertilization treatments in increasing the Q/I parameters of potassium (PBC_K, CR_K^0, ΔK^0 and K_G) and harvested potassium in corn plants, the interaction and correlation between Q/I parameters and harvested potassium due to tillage and fertilization treatments. The research was conducted in a Randomized Block Design (RBD) consisting of factorially arranged (2×2) with 4 groups. The first factor was soil tillage system that consist of minimum tillage (T_1) and intensive tillage (T_2). The second factor in this research was fertilization (P) consisting of half fertilization (NPK fertilizer 175 kg ha^{-1} + urea fertilizer 75 kg ha^{-1} + chicken manure 2.5 Mg ha^{-1}) and P1 = full fertilization (NPK fertilizer 350 kg ha^{-1} + urea fertilizer 150 kg ha^{-1} + chicken manure 5 Mg ha^{-1}). The results of this study indicate that minimum tillage and full fertilization have a significant effect on increasing harvest potassium in corn plants. The results of this study indicate that minimum tillage and full fertilization significantly increased the parameters of potassium Q/I (CR_K^0, ΔK^0, and K_G), and harvested potassium in corn plants. There is an interaction between minimum tillage and full fertilization on the parameters of potassium Q/I. There is a positive correlation between CEC and corn K absorption and K-dd with corn production.

Key words : Potassium, Corn, Intensive tillage, Minimum tillage, NPK fertilizer, Q/I Potassium.