

## **INTISARI**

Penelitian ini berjudul Pengaruh Pupuk TSP, Batuan Fosfat, dan Mikoriza terhadap Serapan P Sorgum pada Inceptisol di Rebug, Kemiri, Purworejo. Tujuan dari penelitian ini yaitu untuk mengetahui pengaruh varietas tanaman sorgum, pupuk fosfat, dan mikoriza terhadap sifat kimia tanah, pertumbuhan vegetatif, dan serapan P pada tanaman sorgum. Rancangan penelitian yang digunakan yaitu rancangan acak lengkap (RAL) faktorial dengan 3 faktor dan 3 ulangan. Pengambilan sampel tanah untuk media tanam di Desa Rebug, Kemiri, Purworejo. Pengamatan tanaman dilakukan setiap minggu sampai fase vegetatif maksimum. Perlakuan tanaman sorgum varietas lokal Demak dan varietas unggul Bioguma-2, pupuk fosfat, dan mikoriza menunjukkan hasil yang berpengaruh nyata yaitu meningkat bahan organik, KPK, P-tersedia, KPK akar, infeksi akar, jumlah daun, berat segar jaringan, dan berat kering jaringan, tetapi tidak berpengaruh nyata namun meningkatkan pH H<sub>2</sub>O, pH KCl, DHL, P-total, tinggi tanaman, panjang akar, volume akar, dan serapan P oleh jaringan. Hasil serapan P oleh akar tertinggi pada perlakuan varietas lokal Demak, pupuk TSP, dan dengan mikoriza yakni sebesar 46 mg/tanaman, sedangkan serapan P oleh tajuk tertinggi pada perlakuan varietas unggul Bioguma-2, pupuk TSP, dan dengan mikoriza yakni sebesar 1826 mg/tanaman.

Kata Kunci : Sorgum, Pupuk TSP, Batuan Fosfat, Mikoriza, Serapan P

### ***ABSTRACT***

This study entitled The Effect of TSP Fertilizer, Rock Phosphate, and Mycorrhizae on Phosphorus Uptake of Sorghum on Inceptisol in Rebug, Kemiri, Purworejo. The purpose of this study was to determine the effect of sorghum varieties, phosphate fertilizers, and mycorrhizae on soil chemical properties, vegetative growth, and phosphorus uptake in sorghum plants. The research design used was a factorial completely randomized design (CRD) with 3 factors and 3 replications. Soil sampling for planting media was taken from Rebug Village, Kemiri, Purworejo. Plant observations were carried out every week until the maximum vegetative phase. The treatments of sorghum Demak and Bioguma-2, phosphate fertilizer, and mycorrhiza showed significant results that can increase on soil organic matter, cation exchange capacity, P-available, root CEC, root infection, number of leaves, tissue fresh weight, and tissue dry weight, but had no significant effect that can increase on pH of H<sub>2</sub>O, pH of KCl, electrical conductivity, total-P, plant height, root length, root volume, and P uptake by plant tissue. The highest P uptake by roots was in the treatment of Demak varieties, TSP fertilizer, and with mycorrhizae, which was 46 mg/plant, while the highest P uptake by shoots was in the treatment of Bioguma-2, TSP fertilizer, and with mycorrhizae, which was 1826 mg/plant.

Key Words : Sorghum, TSP Fertilizer, Rock Phosphate, Mycorrhizae, P Uptake