INTISARI

Tanah pasiran tidak dapat mendukung pertumbuhan tanaman secara optimal karena memiliki retensi air dan tingkat kesuburan yang rendah. Tujuan dari penelitian ini yaitu untuk mengetahui pengaruh aplikasi biochar sekam padi terhadap sifat kimia tanah dan ketersediaan hara, serta mengetahui pengaruh pengaplikasian biochar terhadap pertumbuhan serta serapan hara N,P,K pada bibit pisang asal kultur jaringan. Penelitian dilaksanakan pada bulan Maret - Oktober 2021 di Rumah Kaca dan Laboratorium Departemen Tanah, Fakultas Pertanian, Universitas Gadjah Mada. Sampel tanah yang digunakan dalam penelitian ini berupa tanah pasiran yang diperoleh dari Srigading, Sanden, Bantul. Rancangan disusun dengan Rancangan Acak Lengkap (RAL) dengan sembilan dosis pengaplikasian biochar, Biochar 0 ton / ha (B0), Biochar 2 ton / ha (B1), Biochar 4 ton / ha (B2), Biochar 6 ton / ha (B3), Biochar 8 ton / ha (B4), Biochar 10 ton / ha (B5), Biochar 20 ton / ha (B6), Biochar 40 ton / ha (B7), dan 60 ton/ha (B8). Parameter agronomis berupa pertambahan tinggi tanaman dan jumlah daun diamati setiap satu minggu sekali hingga tanaman berumur 70 HST. Sampel tanah dan tanaman dianalisis di laboratorium. Hasil penelitian menunjukkan bahwa pengaplikasian biochar sekam padi dapat meningkatkan pH H_2O, DHL, C – organik, KTK, P dan K tersedia. Pengaplikasian biochar juga berpengaruh terhadap berat segar dan berat kering daun, berat kering akar, volume akar, dan berat segar batang semu bibit pisang asal kultur jaringan. Serapan hara N, P, dan K pada akar dan daun serta serapan N pada batang semu juga meningkat setelah aplikasi biochar.

Kata kunci : bibit pisang kultur jaringan, biochar sekam padi, tanah pasiran

ABSTRACT

Sandy soil can not optimally support plant growth, because of its low water retention and has low fertility. This research aims to study the effect of rice husk biochar (RHB) application on the soil's chemical properties and the availability of soil nutrients. This research also studies the effect of RHB application on the growth and nutrients absorption of tissue-cultured banana seedlings. This research was conducted from March until October 2021 in the greenhouse and General Soil Laboratory, Faculty of Agriculture, Universitas Gadjah Mada. The soil sample used in the research is sandy soil from Srigading, Sanden, Bantul. The experiment was performed using a completely randomized design (CRD) with nine levels of biochar application, B0 (control); B1 (2 tons / ha); B2 (4 tons / ha); B3 (6 tons / ha); B4 (8 tons / ha); B5 (10 tons / ha); B6 (20 tons / ha); B7 (40 tons / ha); and B8 (60 tons/ha). The increase of plant height and the increase of leaves number are observed once a week until 70 days after planting (DAP). The analyses of soil and plant samples done in the laboratory. The collected data were analyzed using analysis of variance (ANOVA). The result of the research indicated that the application of RHB could increase the soil pH, EC, SOC, CEC, and the availability of phosphorus and potassium. The application of RHB influenced the fresh and dry weight of leaves, the dry weight and volume of the root, the dry weight of the pseudostem. The absorption of N,P,K on the root and leaves, and the absorption of N in the pseudostem also increased after RHB application.

Keywords : tissue – cultured banana seedlings, rice husk biochar (RHB), sandy soil