INTISARI

Pasokan kacang hijau dalam negeri belum dapat memenuhi kebutuhan masyarakat Indonesia karena produktivitas lahan yang menurun akibat mutu tanah Indonesia yang semakin miskin bahan organik. Salah satu upaya untuk meningkatkan produktivitas lahan yaitu menggunakan pupuk organik berupa hasil pengolahan limbah pabrik susu dan limbah bulu ayam. Keduanya diharapkan mampu meningkatkan ketersediaan unsur hara dan mampu memperbaiki mutu tanah. Penelitian ini bertujuan untuk mengetahui pengaruh pupuk organik hasil pengolahan limbah bulu ayam dan limbah pabrik susu terhadap pertumbuhan dan hasil kacang hijau serta untuk mengetahui hubungan antara genotipe dengan dosis pupuk organik hasil pengolahan limbah bulu ayam dan limbah pabrik susu terhadap komponen pertumbuhan dan hasil kacang hijau. Penelitian ini dilaksanakan pada bulan September 2021 hingga November 2021 di lahan Pusat Inovasi Agroteknologi Universitas Gadjah Mada (PIAT-UGM) Kalitirto, Berbah, Sleman, Yogyakarta. Penelitian dilaksanakan dengan menggunakan Rancangan Faktorial 2 faktor petak terbagi. Faktor pertama yaitu varietas kacang hijau dengan 2 taraf, yaitu V1 (Varietas Vima 1) dan V2 (Varietas Vima 5). Faktor kedua yaitu dosis pupuk dengan 5 taraf yaitu P1 (tanpa pemupukan), P2 (2,5 ton pupuk organik hasil pengolahan limbah pabrik susu), P3 (5,0 ton pupuk organik hasil pengolahan limbah pabrik susu), P4 (2,5 ton pupuk organik hasil pengolahan limbah pabrik susu + limbah bulu ayam), dan P5 (5,0 ton pupuk organik hasil pengolahan limbah pabrik susu + limbah bulu ayam). Pengamatan meliputi tinggi tanaman, jumlah daun, jumlah cabang, jumlah polong, bobot segar polong, bobot segar tanaman, bobot kering tanaman, berat 100 biji, hasil panen senyatanya, dan daya hasil. Apabila terdapat pengaruh nyata dilanjutkan dengan uji Tukey pada taraf 5%. Hasil penelitian menunjukkan bahwa pemberian pupuk organik berbahan baku limbah bulu ayam dan limbah pabrik susu berpengaruh nyata terhadap pertumbuhan tinggi kacang hijau, tetapi tidak berpengaruh nyata terhadap jumlah daun, jumlah cabang, jumlah polong per tanaman, bobot segar polong, bobot segar tanaman, bobot kering tanaman, berat 100 biji, hasil panen senyatanya, dan daya hasil. Pemberian pupuk organik dengan dosis yang semakin tinggi tidak selalu menghasilkan pertumbuhan kacang hijau yang semakin baik.

Kata kunci: bulu ayam, kacang hijau, lumpur hasil pengolahan limbah pabrik susu

ABSTRACT

The supply of domestic mung bean has not been able to fulfill the demand of the Indonesian people because of declining land productivity as a result the poorer Indonesian soil quality which causes the decreasing of crop yield. One of the efforts to increase land productivity is using organic fertilizers in the form of processing waste from dairy factory and chicken feather waste which both are expected to be able to increase nutrient absorption and improve soil quality. This study aims to determine the effect of organic fertilizer such as chicken feather and dairy factory waste on the growth and yield of mung bean and to determine the relationship between the genotype and dose of organic fertilizers on the growth and yield components of mung bean. This study was conducted from September 2021 to November 2021 at the Pusat Inovasi Agroteknologi Universitas Gadjah Mada (PIAT-UGM) Kalitirto, Berbah, Sleman, Yogyakarta. This study was carried out according to the Factorial Split Plot Design with 2 factors. The first factor is the mung bean variety with 2 levels, namely Vima 1 and Vima 5. The second factor is dose of fertilizer with 5 levels including P1 (without fertilization), P2 (2.5 tons of dairy factory waste sludge fertilizer), P3 (5.0 tons of dairy factory waste sludge fertilizer), P4 (2.5 tons of dairy factory waste sludge fertilizer + chicken feather), and P5 (5.0 tons of dairy factory waste sludge fertilizer + chicken feather). Observations included plant height, number of leaves, number of branches, number of pods, fresh weight of pods, plant fresh weight, plant dry weight, weight of 100 seeds, real harvest, and yield potential. If there is a significant effect, then continue with the Tukey test at the 5% level. The results of this study indicate that application of chicken slaughter house waste fertilizer and dairy factory waste had a significant effect on the growth of mung bean especially plant height, but did not significantly affect the number of leaves, number of branches, number of pods, fresh weight of pods, plant fresh weight, plant dry weight, weight of 100 seeds, real harvest, and yield potential. Giving organic fertilizer with higher doses doesn’t always result in better growth of mung bean.

Key words: chicken feather, dairy factory waste sludge fertilizer, mung bean