ABSTRAK

PENGARUH BAKTERI PELARUT FOSFAT DAN BAKTERI PENAMBAT NITROGEN SEBAGAI PUPUK HAYATI TERHADAP PERTUMBUHAN DAN HASIL KACANG HIJAU (*Vigna radiata* L.) VARIETAS VIMA 4

Oleh

Lulu Nurliyantini
NPM 185001054

Dosen Pembimbing:
Dedi Natawijaya
Adam Saepudin

Kacang hijau merupakan salah satu tanaman palawija yang mempunyai peluang keberhasilan tumbuh lebih baik dibandingkan dengan komoditas lainnya, namun produktivitas kacang hijau dalam negeri masih rendah. Salah satu upaya untuk meningkatkan produktivitas kacang hijau diantaranya adalah menggunakan bakteri *indigenous* sebagai pupuk hayati. Penelitian ini bertujuan untuk mengetahui pengaruh aplikasi bakteri pelarut fosfat dan bakteri penambat nitrogen terhadap pertumbuhan dan hasil kacang hijau varietas Vima 4. Penelitian ini dilaksanakan di Laboratorium Mikrobiologi dan di *greenhous*e Fakultas Pertanian Universitas Siliwangi Tasikmalaya kampus Mugarsari pada bulan Oktober 2021 sampai Maret 2022. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) dengan 4 perlakuan dan diulang sebanyak 6 kali. Perlakuan yang diuji merupakan suspensi bakteri pelarut fosfat dan bakteri penambat nitrogen yaitu: A_0 (tanpa suspensi bakteri), A_1 (suspensi bakteri pelarut fosfat 10 ml/tanaman), A_2 (suspensi bakteri penambat nitrogen 10 ml/tanaman), dan A_3 (suspensi bakteri pelarut fosfat 10 ml/tanaman dan bakteri penambat nitrogen 10 ml/tanaman. Data dianalisis menggunakan sidik ragam dengan uji F dan dilanjutkan dengan Uji Jarak Berganda Duncan pada taraf nyata 5%. Hasil penelitian menunjukkan bahwa aplikasi suspensi bakteri pelarut fosfat dan bakteri penambat nitrogen tidak berpengaruh nyata terhadap tinggi tanaman, luas daun, bobot basah brangkasan, bobot kering brangkasan, nisbah pupus akar, dan bobot biji per tanaman, namun terdapat pengaruh terhadap panjang akar dan bobot 100 biji kacang hijau.

Kata kunci: Bakteri indigenous, suspensi bakteri, kacang hijau

ABSTRACT

THE EFFECT OF PHOSPHATE SOLUBILIZING BACTERIA AND NITROGEN FIXING BACTERIA AS BIO-FERTILIZER ON THE GROWTH AND PRODUCTION OF MUNG BEANS (*Vigna radiata* L.) VIMA 4 VARIETY

By

Lulu Nurliyantini
Student number, 185001054

Guided by:
Dedi Natawijaya
Adam Saepudin

Mung beans is one of the secondary crops that have a better chance of success than other commodities, but domestic mung beans productivity is still low. One of the efforts to increase the productivity of mung beans is to use indigenous bacteria as biological fertilizers. This study aims to determine the effect of the application of phosphate solubilizing bacteria and nitrogen fixing bacteria on the growth and yield of mung beans of Vima 4 variety. This research was carried out at the Microbiology Laboratory and at the greenhouse, Faculty of Agriculture, Siliwangi University, Tasikmalaya, Mugarsari campus from October 2021 to March 2022. This study used a Randomized Block Design (RAK) with 4 treatments and was repeated 6 times. The treatments tested were suspensions of phosphate solubilizing bacteria and nitrogen fixing bacteria, namely: A_0 (without bacterial suspension), A_1 (phosphate solubilizing bacteria suspension 10 ml/plant), A_2 (suspension of nitrogen fixing bacteria 10 ml/plant), and A_3 (suspension bacteria solubilizing phosphate 10 ml/plant and nitrogen-fixing bacteria 10 ml/plant. The data were analyzed using variance with the F test and continued with Duncan's Multiple Range Test at a significant level of 5%. The results showed that the application of phosphate solubilizing bacteria suspension and nitrogen fixing bacteria had no significant effect on plant height, leaf area, wet weight of stover, dry weight of stover, root loss ratio, and seed weight per plant, but there was an effect on root length and weight of 100 mung bean seeds.

Keywords: Indigenous bacteria, bacterial suspension, mung beans