ABSTRAK

PENGARUH JENIS BAKTERI *INDIGENOUS* LAHAN MUGARSARI TERHADAP PERTUMBUHAN DAN HASIL KEDELAI (*Glycine max* L.) VARIETAS DEVON 2

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Mikroba *indigenous* merupakan mikroba yang hidup di suatu daerah secara alamiah hidup bebas dan memiliki manfaat untuk dijadikan sebagai alternatif penggunaan pupuk hayati bagi tanaman. Penelitian ini bertujuan untuk mengisolasi dan mengetahui kelimpahan bakteri dari rizosfer tanaman kalopo (*Calopogonium mucunoides*), alang-alang (*Imperata cylindrical*) dan kirinyuh (*Eupatorium odoratum*) dari lahan Mugarsari serta untuk mengetahui pengaruh aplikasi isolat bakteri penambat nitrogen, bakteri pelarut fosfat dan bakteri perombak bahan organik terhadap pertumbuhan dan hasil kedelai (*Glycine max* L.) varietas Devon 2. Penelitian ini dilaksanankan di Laboratorium Mikrobiologi dan *Green House* Fakultas Pertanian Universitas Siliwangi Tasikmalaya pada bulan Oktober 2021 sampai Februari 2022. Penelitian ini menggunakan Rancangan Acak Kelompok yang terdiri dari 5 perlakuan dan 5 ulangan. Perlakuan yang digunakan adalah B0 (tanpa inokulasi bakteri), B1 (inokulasi bakteri penambat nitrogen), B2 (inokulasi bakteri pelarut fosfat), B3 (inokulasi bakteri perombak organik) dan B4 (inokulasi campuran B1, B2 dan B3). Aplikasi isolat bakteri dilakukan sebanyak 3 kali pemberian pada pertumbuhan vegetatif yaitu pada saat tanam, 14 dan 35 hari setelah tanam. Hasil penelitian menunjukkan bahwa isolasi bakteri dari rizosfer tanaman kalopo (*Calopogonium mucunoides*), alang-alang (*Imperata cylindrical*) dan kirinyuh (*Eupatorium odoratum*) lahan Mugarsari memiliki kelimpahan yang beragam. Pemberian inokulan bakteri pada tanaman dilakukan sebanyak 10 ml/polybag dengan kerapatan bakteri 10^6 CFU/ml berpengaruh terhadap jumlah daun, jumlah klorofil, jumlah bintil akar efektif serta nisbah pupus akar, tetapi tidak berpengaruh terhadap parameter tinggi tanaman, luas daun, panjang akar, jumlah bintil akar non efektif, bobot basah brangkasan, bobot kering brangkasan, jumlah polong per tanaman, jumlah biji per tanaman, bobot biji per tanaman dan bobot 100 biji kering tanaman kedelai.

Kata kunci : Kedelai, bakteri *indigenous*, inokulan bakteri

ABSTRACT

THE EFFECT OF INDIGENOUS BACTERIAL TYPES OF MUGARSARI LAND ON GROWTH AND YIELD OF SOYBEANS (*Glycine max* L.) VARIETIES DEVON 2

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Indigenous microbial are microbes that live in an area that naturally lives freely and has various benefits to be used as an alternative as *a biofertilizer* for plants. This study aims to isolate and find out the abundance of bacteria from the rhizosphere of the calopo plant (*Calopogonium mucunoides*), reeds (*Imperata cylindrical*) and kirinyuh (*Eupatorium odoratum*) from the Mugarsari land as well as to find out the effect of the isolated application of nitrogen fixing bacteria, phosphate solubilizing bacteria and organic decomposting bacteria on the growth and yield of soybeans (*Glycine max).* L.) Devon 2. This research was conducted at the Microbiology Laboratory and Green House of the Faculty of Agriculture, Siliwangi University Tasikmalaya from October 2021 until February 2022. This research used a Randomized Block Design consisting of 5 treatments and 5 replications. The treatments used were B0 (without bacterial inoculation), B1 (nitrogen-fixing bacterial inoculation), B2 (phosphate solubilizing bacterial inoculation), B3 (organic decomposting bacterial inoculation) and B4 (mixed inoculation of B1, B2 and B3). The application of bacterial isolates is carried out as much as 3 times on phase of vegetative growth at the time of planting, 14 and 35 days after planting. The results showed that the isolation of bacteria from the rhizosphere of the calopo plant (*Calopogonium mucunoides*), reeds (*Imperata cylindrical*) and kirinyuh (*Eupatorium odoratum*) Mugarsari land had a variety of abundance. The inoculation of bacterial inoculants in plants is carried out as much as 10 ml/polybag with a bacterial density of 10^6 CFU/ml had an effects on number of leaves, total of chlorophyll, total of root nodules effective and shoot/root ratio, but not effect on the parameters of plant height, leaf area, root length, total of non-effective root nodules, wet weight of of plant biomass, dry weight of plant biomass, total of pods per plant, total of seeds per plant, seed weight per plant and weight of 100 dried seeds.

Keywords : Soybean, indigenous bacterial, bacterial inoculants