

**POTENSI KONSORSIUM RIZOBAKTERI UNTUK
PENGENDALIAN PENYAKIT BERCAK DAUN BERSUDUT
(*Pseudomonas syringae* pv. *lachrymans*) SERTA PENINGKATAN
PERTUMBUHAN DAN HASIL TANAMAN MENTIMUN
(*Cucumis sativus* L.)**

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Abstrak

Penyakit bercak daun bersudut disebabkan oleh bakteri *Pseudomonas syringae* pv. *lachrymans* yang dapat menyebabkan penurunan produksi tanaman mentimun. Salah satu upaya mengendalikan penyakit tanaman ini dengan penggunaan konsorsium rizobakteri. Penelitian ini bertujuan untuk mendapatkan konsorsium rizobakteri terbaik dalam mengendalikan penyakit bercak daun bersudut serta meningkatkan pertumbuhan dan hasil tanaman mentimun. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan 7 perlakuan, yaitu 6 perlakuan konsorsium rizobakteri dan kontrol (negatif dan positif), 3 ulangan, dan 3 unit. Perlakuannya adalah konsorsium (RKKL 1.2 + RKKL 1.3), (RKKL 1.2 + RKPAL 1.2), (RKKL 1.2 + RPKKL 1.1), (RKKL 1.3 + RPKKL 1.1), (RKPAL 1.2 + RPKKL 1.1), (RKKL 1.2 + RKPAL 1.2 + RPKKL 1.1), kontrol negatif (tanpa perlakuan dan inokulasi Psl) dan kontrol positif (tanpa perlakuan dan tidak diinokulasi Psl). Introduksi konsorsium rizobakteri dilakukan pada benih mentimun dengan kerapatan populasi 10^8 sel/ml. Inokulasi Psl dengan kerapatan populasi bakteri 10^8 sel/ml pada tanaman mentimun umur 15 hari setelah tanam (hst). Parameter pengamatan terdiri atas perkembangan penyakit (masa inkubasi, kejadian, dan keparahan penyakit), pertumbuhan (tinggi tanaman, jumlah daun, dan muncul bunga pertama), dan hasil tanaman (bobot buah). Hasil penelitian menunjukkan bahwa semua perlakuan konsorsium rizobakteri mampu menekan perkembangan penyakit bercak daun bersudut serta meningkatkan pertumbuhan dan hasil tanaman mentimun. Konsorsium RKKL 1.2 + RKPAL 1.2 + RPKKL 1.1 merupakan perlakuan terbaik dengan keparahan penyakit 3,15% dan efektivitas penekanan keparahan penyakit bercak daun bersudut 71,95%, tinggi tanaman 157,22 cm dan efektivitas peningkatan tinggi tanaman 15,69%, bobot buah 411,55 g dan efektivitas peningkatan bobot buah 164,95%.

Kata kunci: bercak daun bersudut, induksi ketahanan, konsorsium, mentimun, rizobakteri

**POTENTIAL OF RHIZOBACTERIAL CONSORTIUM FOR
CONTROLLING ANGULAR LEAF SPOT DISEASE
(*Pseudomonas syringae* pv. *lachrymans*) AND INCREASING
GROWTH AND YIELD OF CUCUMBER
(*Cucumis sativus* L.)**

Abstract

Angular leaf spot disease is caused by the bacterium *Pseudomonas syringae* pv. *lachrymans*, which can reduce cucumber crop production. One method of controlling this plant disease is through the use of rhizobacterial consortia. This study aims to identify the best rhizobacterial consortium for controlling angular leaf spot disease and improving cucumber plant growth and yield. The study used a completely randomised design (CRD) with seven treatments, namely six rhizobacterial consortium treatments and controls (negative and positive), three replicates, and three units. The treatments were consortium (RKKL 1.2 + RKKL 1.3), (RKKL 1.2 + RKPAL 1.2), (RKKL 1.2 + RPKKL 1.1), (RKKL 1.3 + RPKKL 1.1), (RKPAL 1.2 + RPKKL 1.1), (RKKL 1.2 + RKPAL 1.2 + RPKKL 1.1), negative control (without treatment and Psl inoculation) and positive control (without treatment and not inoculated with Psl). The introduction of the rhizobacteria consortium was carried out on cucumber seeds with a population density of 10^8 cells/ml. Psl inoculation with a bacterial population density of 10^8 cells/ml was performed on cucumber plants 15 days after planting (DAP). The observation parameters consisted of disease development (incubation period, incidence, and severity of disease), growth (plant height, number of leaves, and first flower appearance), and crop yield (fruit weight). The results showed that all rhizobacterial consortium treatments were able to suppress the development of angular leaf spot disease and increase the growth and yield of cucumber plants. The RKKL 1.2 + RKPAL 1.2 + RPKKL 1.1 consortium was the best treatment with a disease severity of 3.15% and an effectiveness of suppressing angular leaf spot disease severity of 71.95%, plant height of 157.22 cm and plant height increase efficacy of 15.69%, fruit weight of 411.55 g and fruit weight increase efficacy of 164.95%.

Keywords: angular leaf spot, resistance induction, consortium, cucumber, rhizobacteria