

ABSTRACT

One of the obstacle of the chili plants productivity is bacterial wilt disease caused by *Ralstonia solanacearum*. Wilt disease causes early symptoms in the form of young leaves and old leaves turning yellow. One alternative to control this disease can be done using the application of bacteriophages. Bacteriophages are viruses that can infect bacteria and kill bacterial cells directly. This research used bacteriophage application to control bacterial wilt disease in chili. The isolates of *R. solanacearum* used were from the Laboratory of Plant Pathology, UGM. *R. solanacearum* isolate was tested for hypersensitivity, pathogenicity test, and phylotype test, while the bacteriophage was tested for plaque. The treatments used were 6 treatments with 3 replications, each replication 4 plants. Treatment P1 = Baskara + R.s , P2 = AVPP0205 + R.s. , P3= Baskara + R.s + Phage, P4= AVPP0205 + R.s. + Phage, P5= Sterile water control + Bascara, P6= Sterile water control + AVPP0205. Observations were made at intervals of three days by measuring the incidence of disease, intensity of bacterial wilt disease, and AUDPC (*Area under The Disease Progress curve*). Bacteriophage application on P3 and P4 gave a good control when compared to P1 and P2 without bacteriophage inoculation. The highest AUDPC values were in P1 and P2, while the lowest were in controls P5 and P6.

Keywords : Chilli, *Ralstonia solanacearum*, Bacteriophages.

INTISARI

Produktivitas tanaman cabai terdapat kendala adanya penyakit layu bakteri yang disebabkan oleh *Ralstonia solanacearum*. Penyakit layu menimbulkan gejala awal berupa daun muda dan daun-daun tua menguning. Salah satu alternatif pengendalian penyakit ini dapat dilakukan menggunakan aplikasi bakteriofag. Bakteriofag merupakan virus yang mampu menginfeksi bakteri dan membunuh sel bakteri secara langsung. Tujuan dari penelitian ini adalah untuk mengetahui kemampuan bakteriofag dalam mengendalikan penyakit layu bakteri pada cabai. Isolat *R. solanacearum* yang digunakan berasal dari Koleksi laboratorium Ilmu Penyakit Tumbuhan, UGM. Isolat *R. solanacearum* dilakukan uji hipersensitif, uji patogenisitas, dan uji filotipe, sedangkan pada bakteriofag di uji plak. Perlakuan yang digunakan yaitu 6 perlakuan dengan 3 ulangan, setiap ulangan 4 tanaman. Perlakuan P1 = Baskara + R.s , P2= AVPP0205 + R.s. , P3= Baskara + R.s + Phage, P4= AVPP0205 + R.s. + Phage, P5= Kontrol air steril + Baskara, P6= Kontrol air steril + AVPP0205. Pengamatan dilakukan dengan interval tiga hari dengan mengukur insidensi penyakit, intensitas penyakit layu bakteri, dan AUDPC (*Area under The Disease Progress curve*). Aplikasi bakteriofag pada P3 dan P4 mengendalikan penyakit lebih baik dibandingkan dengan P1 dan P2 yang tanpa di inokulasikan bakteriofag. Nilai AUDPC tertinggi pada P1 dan P2 sedangkan terendah pada kontrol P5 dan P6.

Kata kunci : Cabai, *Ralstonia solanacearum*, Bakteriofag