

INTISARI

Pseudomonas putida merupakan salah satu bakteri antagonis yang dapat digunakan pada perlakuan benih tanaman untuk mengendalikan patogen terbawa tanah. Bakteri antagonis yang diselimutkan pada benih (*seedcoating*) akan cepat mengkoloni dan menyebar disepanjang perakaran ketika benih telah berkecambah dan membentuk akar di dalam tanah, sehingga patogen sukar melakukan penetrasi ke tanaman karena lingkungan sistim perakaran telah didominasi oleh bakteri antagonis. Perlakuan benih dapat dilakukan dengan formulasi kering berbasis bahan pembawa tanah kompos dan bahan perekat gom arab 1%. Penelitian ini bertujuan untuk menguji efektivitas formulasi kering tanah kompos yang telah diinfestasi bakteri *P.putida* (Pf-20) kemudian diselimutkan pada benih tomat dalam mengendalikan penyakit layu bakteri. Perlakuan benih yang diuji yaitu benih murni tanpa *coating* sebagai kontrol (A), *seedcoating* tanpa bakteri antagonis (B), *seedcoating* dengan Pf-20 Wildtype (C) dan *seedcoating* dengan mutan Pf-20 NalRif (D). Hasil penelitian menunjukkan bahwa bakteri Pf-20 Wildtype atau mutan Pf-20 NalRif yang diselimutkan pada benih tomat mampu menekan penyakit layu bakteri dibanding kontrol dan *seedcoating* tanpa bakteri antagonis.

Kata Kunci : *P. putida*, *seedcoating*, bahan pembawa dan perekat, formulasi kering

ABSTRACT

Pseudomonas putida is one of antagonist bacteria employed on plant seed treatment to control the pathogens from soil carrying. The antagonist bacteria coated around seeds (*seedcoating*) are rapidly to colonize and spread through root stem when the seeds have germinated and have grown roots into soil. Therefore, the pathogens will difficultly penetrate the plant since antagonist bacteria have dominated the root stem environment. The seed treatment might be undertaken with both soil carrier material based and 1% arabic gum adhesive material based dry formulations. This research aimed to verify the effectiveness of the compost soil dry formulation invested by *P. putida* (Pf-20) bacteria and subsequently coated around the tomato seeds to control bacterial drooping disease. The seed treatments verified were the non-coated pure seeds as the controlling ones (A), the non-antagonist bacteria *seedcoating* (B), the Pf-20 Wildtype *seedcoating* (C), and the *seedcoating* with Pf-20 NalRif mutant (D). The result showed that either the Pf-20 Wildtype bacteria or the Pf-20 NalRif mutant coated around the tomato were able to decrease the bacteria drooping disease rather than the controlling seeds or the non-antagonist bacterial *seedcoating*.

Key words : *P. putida*, adhesive and carrying materials, dry formulation