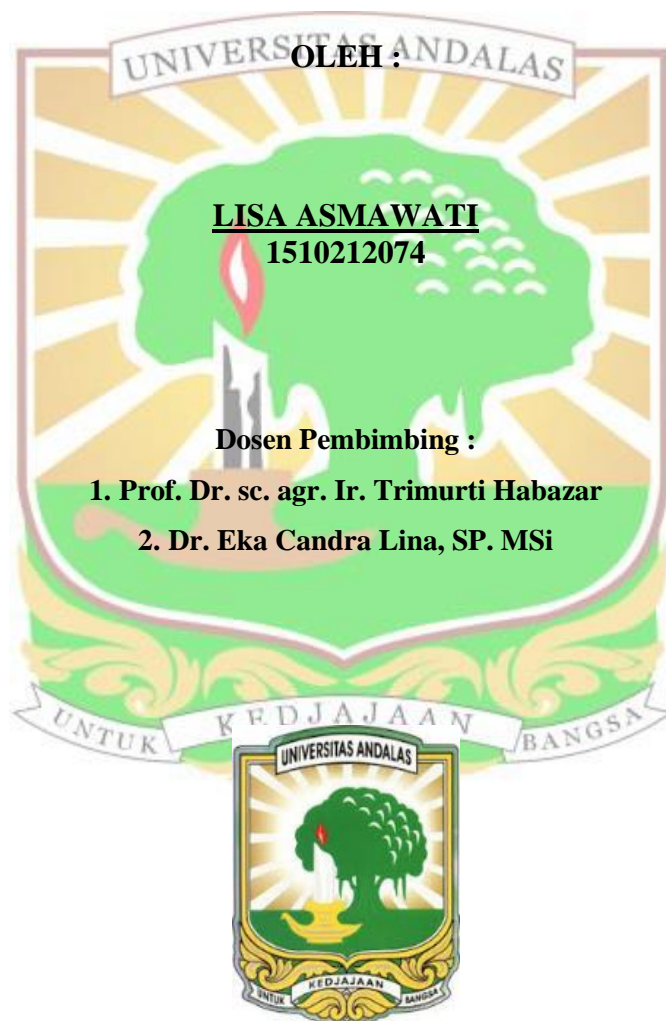


**STABILITAS FORMULA PADAT BAKTERI ENDOFIT
TERSELEKSI ISOLAT AGBE3.1TL UNTUK PENGENDALIAN
JAMUR *Colletotrichum capsici* (Syd) Bult.et Bisby DAN
PENINGKATAN PERTUMBUHAN SERTA HASIL CABAI**

SKRIPSI



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STABILITAS FORMULA PADAT BAKTERI ENDOFIT TERSELEKSI ISOLAT AGBE3.1TL UNTUK PENGENDALIAN JAMUR *Colletotrichum capsici* (Syd) Bult.et Bisby DAN PENINGKATAN PERTUMBUHAN SERTA HASIL CABAI

Abstrak

Colletotrichum capsici merupakan penyebab penyakit antraknosa pada tanaman cabai dengan keparahan mencapai 75%. Dari penelitian sebelumnya diperoleh bakteri endofit isolat AGBE3.1TL yang terbaik untuk pengendalian penyakit antraknosa dan meningkatkan pertumbuhan serta hasil cabai. Untuk mempertahankan kestabilannya selama di penyimpanan, maka bakteri endofit isolat AGBE3.1TL perlu diformulasi. Penelitian bertujuan untuk mendapatkan formula bakteri endofit yang stabil dalam pengendalian penyakit antraknosa dan peningkatan pertumbuhan serta hasil cabai. Penelitian merupakan rancangan acak lengkap dengan 24 perlakuan yang terdiri dari 2 tahap: 1) Optimasi komposisi bahan formula bakteri endofit dan 2) Uji kestabilan formula bakteri endofit untuk pengendalian penyakit antraknosa pada cabai. Formula bakteri endofit isolat AGBE3.1TL diintroduksi dengan cara pelumuran benih dan akar bibit cabai selama 15 menit. *C. capsici* diinokulasi pada saat tanaman berumur 15 minggu setelah tanam dengan menyebarkan buah cabai yang terinfeksi *C. capsici* sebanyak 3 buah per *polybag*. Parameter yang diamati adalah: viabilitas bakteri endofit dalam formula, perkembangan penyakit antraknosa, pertumbuhan bibit, pertumbuhan tanaman dan hasil cabai. Hasil penelitian menunjukkan bahwa viabilitas formula bakteri endofit isolat AGBE3.1TL tergolong stabil hingga penyimpanan minggu ke-6. Semua formula bakteri endofit mampu memperlambat masa inkubasi, mengurangi insidensi dan keparahan penyakit antraknosa pada daun cabai dibanding kontrol. Formula terbaik dalam meningkatkan pertumbuhan dan hasil cabai adalah dedak + ampas tebu yang disimpan 2 minggu dan ampas tebu yang disimpan 4 minggu. Formula ampas tebu yang disimpan 4 minggu merupakan yang paling stabil dalam menekan perkembangan penyakit antraknosa dan meningkatkan pertumbuhan serta hasil cabai.

Kata kunci: bakteri endofit, cabai, *Colletotrichum capsici*, formulasi

STABILITY OF SOLID FORMULA OF SELECTED ENDOPHYTIC BACTERIAL ISOLATE AGBE3.1TL FOR CONTROL *Colletotrichum capsici* (Syd) Bult.et Bisby AND TO INCREASE THE GROWTH AND YIELD OF CHILI

Abstract

Colletotrichum capsici cause anthracnose disease on chili plants, the disease severity up to 75%. From previous research had been found that endophytic bacterial isolate AGBE3.1TL is the best to control anthracnose disease and to increase growth and yield of chili. To maintain the stability of the endophytic bacterial isolate AGBE3.1TL, it very important to develop of effective formula. The research aimed to obtain a stable formula of endophytic bacterial isolate AGBE3.1TL to control anthracnose disease and to increase the growth and yield of chili. The study have designed in a completely randomized design with 24 treatments consists of 2 stages: 1) Optimization of the ingredients composition of formula of endophytic bacteria, and 2) The stability of endophytic bacterial formula to control anthracnose disease on chili. The formula of endophytic bacterial isolate AGBE3.1TL was introduced by the seed treatment and root of seedling's treatment for 15 minutes. *C. capsici* were inoculated at 15 weeks old chili. Three pieces of infected chili had been layed at the soil surface. The parameters were observed: viability of endophytic bacterial isolate AGBE3.1TL in the formula, development of anthracnose disease, seedling growth, plant growth and yield of chili. The results showed that viability of endophytic bacterial isolate AGBE3.1TL in different formulas were stable until 6 weeks of storage. All of formulas of endophytic bacterial were able to prolong the incubation periode, reduce the incidence, and reduce the severity of anthracnose disease on chili leaves compared than control. The best formula to control anthracnose disease and to increase the growth and yield is the rice bran + bagasse stored for 2 weeks and bagasse stored for 4 weeks. The 4 weeks of bagasse formula was the most stable to control anthracnose disease and to increase the growth and yield of chilies.

Key word: chili, *Colletotrichum capsici*, endophytic bacteria, formulation