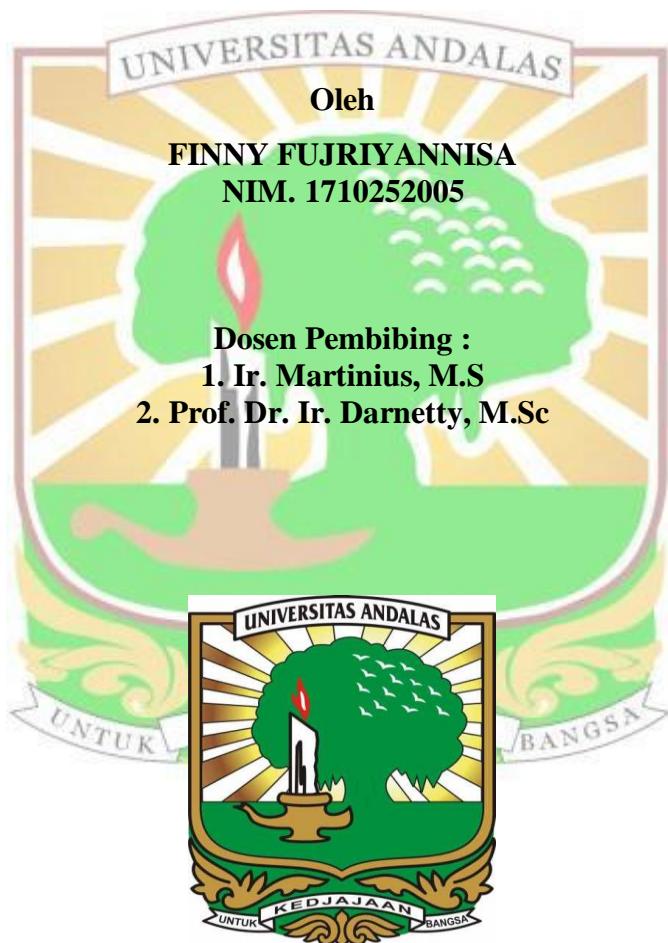


**POTENSI FILTRAT *Trichoderma harzianum* DALAM
MENGENDALIKAN PENYAKIT LAYU OLEH *Fusarium
oxysporum* f.sp *capsici* DAN MENINGKATKAN
PERTUMBUHAN BIBIT CABAI (*Capsicum annum* L.)**

SKRIPSI



**FAKULTAS PERTANIAN
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Abstrak

Fusarium oxysporum f.sp. *capsici* (*Foc*) merupakan salah satu patogen penyebab penyakit layu pada tanaman cabai. Filtrat *Trichoderma harzianum* mampu menekan berbagai jamur patogen tanaman seperti *Foc*. Tujuan dari penelitian ini adalah untuk mendapatkan konsentrasi filtrat *T. harzianum* yang efektif dalam menekan pertumbuhan *Fusarium oxysporum* f. sp. *capsici* dan meningkatkan pertumbuhan bibit cabai (*Capsicum annum* L.). Penelitian telah dilaksanakan di laboratorium Fitopatologi Departemen Proteksi Tanaman dan di rumah kaca Fakultas Pertanian Universitas Andalas dari bulan Juni sampai September 2022. Penelitian bersifat eksperimen menggunakan Rancangan Acak Kelompok (RAK) dengan 5 perlakuan dan 4 ulangan. Perlakuan menggunakan metode *seed treatment*, terdiri dari : (A) kontrol (0%) (tanpa filtrat), (B) konsentrasi 25%, (C) 50%, (D) 75%, dan (E) 100%. Parameter pengamatan adalah : persentase benih yang terinfeksi *Foc*, jumlah benih berkecambah, persentase bibit muncul lapang, persentase bibit yang terinfeksi *Foc*, persentase bibit mati, tinggi bibit, jumlah daun bibit, berat basah dan berat kering bibit. Hasil penelitian menunjukkan bahwa filtrat *T. harzianum* konsentrasi 50% efektif dalam mengendalikan penyakit layu pada bibit cabai yang disebabkan oleh *Fusarium oxysporum* f.sp. *capsici* dan meningkatkan pertumbuhan bibit cabai dengan efektivitas penekannya terhadap benih terinfeksi *Foc* (88,60%), peningkatan benih berkecambah (275%), peningkatan bibit muncul lapang (25%), penekanan bibit terinfeksi *Foc* (100%), penekanan bibit mati (100%), peningkatan tinggi bibit (66,67%) dan peningkatan jumlah daun bibit (66,67%).

Kata kunci: Filtrat, *Trichoderma harzianum*, *Fusarium oxysporum* f. sp. *capsici*

POTENTIAL OF *Trichoderma harzianum* FILTRATE IN CONTROLLING WILT DISEASE BY *Fusarium oxysporum* f.sp *capsici* AND INCREASING THE GROWTH OF CHILI SEEDLINGS (*Capsicum annuum* L.)

Abstract

Fusarium oxysporum f.sp. *capsici* (*Foc*) is one of the pathogens that causes wilt disease in chili plants. *Trichoderma harzianum* filtrate is able to suppress various plant pathogenic fungi such as *Foc*. The purpose of this study was to obtain the effective concentration of *T. harzianum* filtrate in suppressing the growth of *Fusarium oxysporum* f. sp. *capsici* and increase the growth of chili seedlings (*Capsicum annuum* L.). The research was carried out in the Phytopathology Laboratory of the Department of Plant Protection and in the greenhouse of the Faculty of Agriculture, Andalas University from June to September 2022. This experimental research used a randomized block design (RBD) with 5 treatments and 4 replications. *T. harzianum* filtrate was applied as seed treatment with 5 concentrations level : (A) control (0%) (without filtrate), (B) 25% , (C) 50%, (D) 75%, and (E) 100%. The observations were : percentage of seeds infected by *Foc*, number of germinating seeds, percentage of field emerging seedlings, percentage of seeds infected with *Foc*, percentage of dead seedlings, seedling height, number of seedling leaves, wet weight and dry weight of seedlings. The results showed that 50% concentration of *T. harzianum* filtrate was effective in controlling wilt disease in chili seedlings caused by *Fusarium oxysporum* f.sp. *capsici* and increasing the growth of chili seedlings by suppressing the effectiveness of *Foc* infected seeds (88.60%), increasing seed germination (275%), increasing field emerging seedlings (25%), suppressing *Foc* infected seedlings (100%), suppressing dead seedlings (100%), increasing seedling height (66,67%) and increasing number of seedling leaves (66,67%).

Keywords: Filtrate, *Trichoderma harzianum*, *Fusarium oxysporum* f. sp. *capsici*

