

**UJI ANTAGONIS *Trichoderma* sp. INDIGENUS TANAMAN PISANG
TERHADAP JAMUR *Fusarium oxysporum* f. sp. *cubense* KELOMPOK
RAS 1 DAN RAS 4 PENYEBAB PENYAKIT LAYU TANAMAN PISANG
(*Musa* sp.)**

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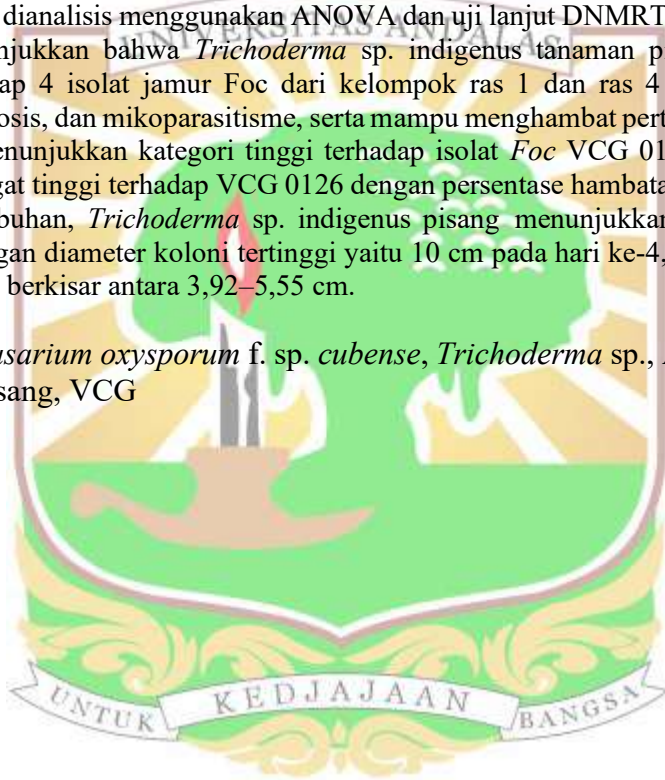


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ABSTRAK

Penyakit layu Fusarium yang disebabkan oleh jamur *Fusarium oxysporum* f. sp. *cubense* (*Foc*) merupakan salah satu penyakit utama pada tanaman pisang yang sulit dikendalikan. Penelitian ini bertujuan untuk mengetahui potensi *Trichoderma* sp. indigenus tanaman pisang dalam menghambat pertumbuhan empat isolat *Foc* dari ras 1 dan ras 4 secara in vitro. Penelitian dilaksanakan di Laboratorium Riset Mikrobiologi, Departemen Biologi, Universitas Andalas dan Laboratorium Bersama Pusat Riset Hortikultura BRIN di Solok. Metode yang digunakan meliputi uji antagonis dan uji pertumbuhan pada media PDA dengan rancangan acak lengkap. Uji antagonis terdiri dari 4 perlakuan dan 5 ulangan, sedangkan uji pertumbuhan terdiri dari 5 perlakuan dan 5 ulangan, masing-masing dengan 3 cawan Petri. Perlakuan melibatkan isolat *Trichoderma* sp. dan empat isolat *Foc*, yaitu VCG 0124/5, VCG 01213/16, VCG 01219, dan VCG 0126. Data dianalisis menggunakan ANOVA dan uji lanjut DNMR pada taraf 5%. Hasil penelitian menunjukkan bahwa *Trichoderma* sp. indigenus tanaman pisang memiliki sifat antagonis terhadap 4 isolat jamur *Foc* dari kelompok ras 1 dan ras 4 melalui mekanisme kompetisi, antibiosis, dan mikoparasitisme, serta mampu menghambat pertumbuhan jamur *Foc*. Zona hambat menunjukkan kategori tinggi terhadap isolat *Foc* VCG 0124/5, 01213/16, dan 01219, serta sangat tinggi terhadap VCG 0126 dengan persentase hambatan mencapai 82,82%. Pada uji pertumbuhan, *Trichoderma* sp. indigenus pisang menunjukkan pertumbuhan yang paling cepat dengan diameter koloni tertinggi yaitu 10 cm pada hari ke-4, sedangkan diameter koloni isolat *Foc* berkisar antara 3,92–5,55 cm.

Kata kunci: *Fusarium oxysporum* f. sp. *cubense*, *Trichoderma* sp., Antagonis, Pisang, VCG



ABSTRACT

Fusarium wilt disease caused by the fungus *Fusarium oxysporum* f. sp. *cubense* (Foc) is one of the major diseases affecting banana plants that is difficult to control. This study aims to determine the potential of indigenous *Trichoderma* sp. in banana plants to inhibit the growth of four Foc isolates from race 1 and race 4 in vitro. The research was conducted at the Microbiology Research Laboratory, Department of Biology, University of Andalas, and the Join Laboratory of the Horticulture Research Center, BRIN, in Solok. The methods used included antagonistic tests and growth tests on PDA medium with a completely randomized design. The antagonistic test consisted of 4 treatments and 5 replicates, while the growth test consisted of 5 treatments and 5 replicates, each with 3 Petri dishes. The treatments involved *Trichoderma* sp. isolates and four Foc isolates, namely VCG 0124/5, VCG 01213/16, VCG 01219, and VCG 0126. Data were analyzed using ANOVA and DNMRT post-hoc tests at the 5% level. The results showed that the indigenous *Trichoderma* sp. of banana plants exhibited antagonistic properties against the 4 Foc fungal isolates from race groups 1 and 4 through mechanisms of competition, antibiosis, and mycoparasitism, and were able to inhibit Foc fungal growth. The inhibition zone showed a high category against Foc isolates VCG 0124/5, 01213/16, and 01219, and a very high category against VCG 0126 with an inhibition percentage of 82.82%. In the growth test, *Trichoderma* sp. indigenous pisang showed the fastest growth with the highest colony diameter of 10 cm on day 4, while the colony diameter of Foc isolates ranged from 3.92–5.55 cm.

Keywords : *Fusarium oxysporum* f. sp. *cubense*, *Trichoderma* sp., antagonist, banana, VCG

