

Isolasi Aktinomisetes Anti-*Fusarium oxysporum* FU3 dari Tanah Kebun Cabai Desa Bugel, Kulon Progo, Yogyakarta

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INTISARI

Cabai merupakan tanaman bernilai ekonomis. Penanganan penyakit layu fusarium pada cabai akibat *Fusarium oxysporum* perlu dikembangkan. Tujuan penelitian ini yaitu mengisolasi aktinomisetes anti-*Fusarium oxysporum* FU3 sebagai biokontrol dari tanah perkebunan cabai di desa Kulon Progo, Yogyakarta. Metode terdiri dari skinning aktinomisetes dalam SCA, skinning aktinomisetes anti-*Fusarium oxysporum* FU3 dalam PDA, produksi filtrat isolat potensial dan pengujian antagonisnya dalam PDA dan PDB. Kemudian dilakukan karakterisasi pada isolat potensial. Penelitian ini berhasil mengisolasi empat isolat aktinomistes anti-*Fusarium oxysporum* FU3 yaitu AK4, AK5, AK7, dan AK9. Pada uji antagonisme di media PDA, penghambatan yang ditunjukkan masing-masing isolat yaitu AK4 $0,64 \pm 5,1$ (%), AK5 $47,8 \pm 2,96$ (%), AK7 $24,79 \pm 15,9$ (%) dan AK9 $27,19 \pm 2,9$ (%). AK5 menunjukkan penghambatan terbaik. Penghambatan oleh isolat AK5 di PDA yaitu $47,81 \pm 2,96\%$., filtrat AK5 di PDA yaitu $41,71 \pm 3,5$ (%) dan di PDB yaitu $81,77 \pm 5,1$ (%) pada konsentrasi filtrat 5% vol. Konsentrasi filtrat dapat ditingkatkan untuk memperoleh efek fungisidal. AK5 pada uji antagonis menyebabkan hifa abnormal dan lisis. Adapun karakter AK5 yaitu memiliki warna miselium udara putih, warna miselium vegetatif krem, pigmentasi kecoklatan bentuk koloni *circular*, margin *undulate*, elevasi *low convex*, tipe spora *Rectiflexibiles*, gram positif dan katalase positif.

Kata kunci : Aktinomisetes, Antagonis, *Fusarium oxysporum* FU3

Isolation of Actinomycetes Antagonist to *Fusarium oxysporum* FU3 from Soil of Chilli Plantation in Bugel, Kulon Progo, Yogyakarta

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ABSTRACT

Chili is an economically valuable plant. The Handling of fusarium wilt in chili due to *Fusarium oxysporum* needs to be developed. The research aims to isolate actinomycetes antagonist *Fusarium oxysporum* FU3 as biocontrol from soil of chili plantation in Kulon Progo, Yogyakarta. The method consisted of screening actinomycetes in SCA, screening anti-*Fusarium oxysporum* FU3 actinomycetes in PDA, production of potential isolate filtrate and antagonistic test on PDA and PDB. Potential isolate was characterized. There were four isolates of actinomycetes antagonist *Fusarium oxysporum* FU3. They were AK4, AK5, AK7, and AK9. Based on the antagonism test on PDA, the inhibition AK4 was $0,64 \pm 5,1$ (%), AK5 was $47.81 \pm 2,96$ (%), AK7 was $24.79 \pm 15,9$ (%), and AK9 was $29.17 \pm 2,9$ (%). AK5 showed the highest inhibition. The filtrate of AK5 was tested for antagonism on PDA and PDB. Inhibition on PDA showed $41.71 \pm 3,5$ (%). and PDB was $81.77 \pm 5,1$ (%) at the filtrate concentration of 5% vol. The filtrate concentration can be increased to obtain a fungicidal effect. AK5 on the antagonist test caused abnormal hyphae and lysis. Characters of AK5 were color of air mycelium was white, the color of the vegetative mycelium was cream, the pigmentation was brownis, the shape was circular, margins was undulate, the elevation was low convex, the spores type was Rectiflexibiles, gram-positive and positive catalase.

Keyword: Actinomycetes, *Fusarium oxysporum* FU3, Antagonist.