

INTISARI

Penyakit bercak cokelat merupakan salah satu penyakit penting yang menjadi kendala dalam budidaya tanaman tomat. Penggunaan PGPF merupakan salah satu alternatif sebagai upaya pengendalian hayati penyakit tersebut. Penelitian ini dilakukan untuk mengetahui kemampuan *Aspergillus oryzae* isolat PTH1 dan *Penicillium daleae* isolat A2SP secara antagonis dan ketahanan tanaman *in vivo* terhadap *Alternaria solani* patogen pada tanaman tomat. Isolat *Alternaria solani* didapatkan dari lahan di Jalan Turi, Sleman. Seluruh isolat PGPF mampu menekan pertumbuhan *Alternaria solani* pada perlakuan *Aspergillus oryzae* isolat PTH1 dan *Penicillium daleae* isolat A2SP secara berturut-turut sebesar 20.99% dan 15.57%. Reaksi antagonisme yang terjadi pada *Aspergillus oryzae* isolat PTH1 dan *Penicillium daleae* isolat A2SP berupa kompetisi dan antibiosis. Aplikasi *Aspergillus oryzae* isolat PTH1 dan *Penicillium daleae* isolat A2SP mampu menekan lama waktu inkubasi dan intensitas patogen *Alternaria solani* penyebab penyakit bercak cokelat pada tanaman tomat. Lama waktu inkubasi perlakuan kontrol, *Aspergillus oryzae* isolat PTH1, dan *Penicillium daleae* isolat A2SP terhadap *Alternaria solani* berturut-turut, yaitu 5 hari, 10 hari dan 7 hari, sedangkan nilai intensitas penyakit pada hari ke-15 sebesar 46.67%, 37.78%, dan 40%.

Kata kunci: *Alternaria solani*, *Aspergillus oryzae*, induksi ketahanan, *Penicillium daleae*, PGPF

ABSTRACT

Early blight disease is one of the important diseases that become obstacles in tomato cultivation. The use of PGPF is an alternative as a biological control effort against this plant disease. This research was conducted to determine the ability of *Aspergillus oryzae* isolate PTH1 and *Penicillium daleae* isolate A2SP to be antagonistic and in vivo plant resistance against *Alternaria solani*, the causal pathogen of tomato. *Alternaria solani* isolates were obtained from Turi street, Sleman. All PGPF isolates were able to suppress the growth of *Alternaria solani* in treatments with *Aspergillus oryzae* isolate PTH1 and *Penicillium daleae* isolate A2SP successively by 20.99% and 15.57%. The antagonistic reactions that occurred in all PGPF isolates were in the form of competition and antibiosis. Application of *Aspergillus oryzae* isolate PTH and *Penicillium daleae* isolate A2SP can reduce the incubation period and the intensity of *Alternaria solani* pathogen causing brown spot disease on tomato plants. The incubation period for control, *Aspergillus oryzae* isolate PTH1, and *Penicillium daleae* isolate A2SP against *Alternaria solani* were 5 days, 10 days, and 7 days respectively, while the disease intensity values on the 15th day were 46.67%, 37.78%, and 40%.

Keywords: *Alternaria solani*, *Aspergillus oryzae*, *Penicillium daleae*, PGPF, resistance induction



Uji Kemampuan Penghambatan Dua Isolat PGPF Terhadap Alternaria solani Dalam Mengendalikan Penyakit

Bercak Cokelat Pada Tomat

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