

Aplikasi metabolit sekunder dari tiga isolat *Pseudomonas fluorescens* untuk mengendalikan penyakit antraknosa pada daun kakao

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Abstract	<p>Anthraxnose caused by <i>Colletotrichum gloeosporoides</i> is an important disease in cocoa. This research aimed to determine the effectiveness of secondary metabolites derived from three isolates of <i>Pseudomonas fluorescens</i> to control cocoa leaves anthracnose, and their influence on the growth of cocoa plants. The research was conducted at a smallholder cocoa plantation in Putat Village, Patuk District, Gunung Kidul Regency, Yogyakarta for four months. A randomized block design was used with four replicates and seven treatments consisted of control, application of secondary metabolites from <i>P. fluorescens</i> P60, <i>P. fluorescens</i> P20, <i>P. fluorescens</i> P8, combination <i>P. fluorescens</i> P60 + P20, <i>P. fluorescens</i> P60 + P8, and <i>P. fluorescens</i> P20 + P8. Variables observed were disease intensity, infection rate, number of healthy shoots and qualitative phenolic compound. Results of the research showed that the secondary metabolites of <i>P. fluorescens</i> P60, P20 and P8 alone or in combination suppressed the disease intensity by 42.01-54.50%. The infection rate caused by metabolite secondary of <i>P. fluorescens</i> P60, P20, P8, <i>P. fluorescens</i> P60+P20, <i>P. fluorescens</i> P60+P8, and <i>P. fluorescens</i> P20+P8 was 0.23; 0.25; 0.26; 0.26; 0.31; and 0.24 units/day, respectively. The secondary metabolites of <i>P. fluorescens</i> P60 increased the number of healthy shoots by 67.44%. The secondary metabolites of <i>P. fluorescens</i> P60 increased phenolic compounds (tannin, saponin, and glycosides) in cocoa leaves. [Keyword: leaves anthracnose, <i>Colletotrichum gloeosporoides</i>, cocoa, secondary metabolites, <i>Pseudomonas fluorescens</i>] Abstrak Antraknosa yang disebabkan oleh <i>Colletotrichum gloeosporioides</i> merupakan penyakit penting pada tanaman kakao. Penelitian bertujuan mengkaji keefektifan metabolit sekunder dari tiga isolat <i>Pseudomonas fluorescens</i> untuk mengendalikan penyakit antraknosa pada daun kakao, serta pengaruhnya terhadap pertumbuhan tanaman kakao. Penelitian dilaksanakan di perkebunan kakao rakyat, Desa Putat, Kecamatan Patuk, Kabupaten Gunung Kidul, Yogyakarta selama empat bulan. Penelitian menggunakan rancangan acak kelompok untuk menguji 7 perlakuan yang diulang 4 kali, perlakuan yang diuji adalah kontrol, aplikasi metabolit sekunder <i>P. fluorescens</i> P60, <i>P. fluorescens</i> P20, <i>P. fluorescens</i> P8, kombinasi <i>P. fluorescens</i> P60+P20, <i>P. fluorescens</i> P60+P8, dan <i>P. fluorescens</i> P20+P8. Variabel pengamatan meliputi intensitas penyakit, laju infeksi, jumlah tunas sehat, dan kandungan senyawa fenol secara kualitatif. Hasil penelitian menunjukkan bahwa perlakuan metabolit sekunder <i>P. fluorescens</i> P60, P20, dan P8 secara tunggal dan gabungan mampu menekan intensitas penyakit berkisar 42,01-54,50%. Laju infeksi perlakuan metabolit sekunder <i>P. fluorescens</i> P60, <i>P. fluorescens</i> P20, <i>P. fluorescens</i> P8, kombinasi <i>P. fluorescens</i> P60+P20, <i>P. fluorescens</i> P60+P8 dan <i>P. fluorescens</i> P20+P8 berturut-turut 0,23; 0,25; 0,26; 0,26; 0,31; dan 0,24 unit/hari. Metabolit sekunder <i>P. fluorescens</i> P60 meningkatkan jumlah tunas sehat sebesar 67,44%. Perlakuan <i>P. fluorescens</i> P60 meningkatkan senyawa fenol (saponin, tanin, dan glikosida) pada daun kakao. [Kata kunci: antraknosa daun, <i>Colletotrichum gloeosporoides</i>, kakao, metabolit sekunder, <i>Pseudomonas fluorescens</i>]</p>
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