

RINGKASAN

Kakao (*Theobroma cacao* L.) merupakan salah satu komoditas perkebunan unggulan Indonesia. Produktivitas kakao mengalami penurunan, salah satu penyebab adalah organisme pengganggu tanaman yang sering menimbulkan kerusakan kakao. Penyakit busuk buah disebabkan oleh *Phytophthora palmivora*. Penggunaan pestisida dalam pengendalian OPT membutuhkan biaya besar. Oleh karena itu, perlu alternatif pengendalian menggunakan metabolit sekunder agensia hayati. Penelitian ini bertujuan untuk mengkaji keefektifan metabolit sekunder *Pseudomonas fluorescens* isolat P60, P20 dan P8, untuk menekan penyakit busuk buah kakao dan pengaruhnya terhadap komponen produksi.

Penelitian dilaksanakan di Laboratorium Perlindungan Tanaman, Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto dan perkebunan kakao rakyat Dusun Plumbungan, Desa Putat, Kecamatan Patuk, Kabupaten Gunung Kidul, mulai November sampai Januari 2017. Penelitian menggunakan Rancangan Acak Kelompok dengan 6 ulangan dan 4 perlakuan yang terdiri atas kontrol, metabolit sekunder *P. fluorescens* P60, *P. fluorescens* P20, dan *P. fluorescens* P8. Variabel yang diamati adalah kejadian penyakit, intensitas penyakit, jumlah bunga, jumlah buah baru, jumlah bunga jadi buah, dan analisis senyawa fenol.

Hasil penelitian menunjukkan bahwa perlakuan metabolit sekunder *P. fluorescens* P20 dan P8 menekan kejadian penyakit masing-masing sebesar 28,86 dan 48,97%, serta intensitas penyakit sebesar 35,87, dan 40,21%. Seluruh perlakuan *P. fluorescens* belum mampu meningkatkan jumlah bunga, buah baru. Seluruh perlakuan *P. fluorescens* mampu meningkatkan kandungan senyawa fenol pada tanaman kakao.

SUMMARY

Cocoa (Theobromacacao L.) is one of the superior Indonesian commodities. Cocoa productivity have been decreased, caused by plant pests and disease organism resulting in damage the cocoa crop. Pod disease is caused by Phytophthora palmivora. The use of pesticides in controlling plant pests and disease organism need more cost. Therefore, it is necessary to use alternative control using secondary metabolites biological agents. This study aimed to study the secondary metabolites effectiveness of Pseudomonas fluorescens P60, P20, and P8 isolates to suppress the cocoa pod rot and their effect production component.

The research was conducted at the Laboratory of Plant Protection, Faculty of Agriculture, Jenderal Sudirman University, Purwokerto and in the cocoa plantation at Putat Village, Patuk Subdistrict, Gunung Kidul Regency, from November 2016 up to January 2017. Randomized block design was used with six replicants and four treatments consisted of control, secondary metabolites of P. fluorescens P60, P. fluorescens P20, and P. fluorescens P8. Variables observed were disease incidence, disease intensity, number of flowers, number of new pods, number of flower become pods, and phenolic compounds analysis.

Result of the reseach showed that the secondary metabolites of P. fluorescens P20, and P8 could suppress the disease incidence as 28.86 and 48.97%, respectively and disease intensity as 35.87 and 40.21%, respectively. All treatments did not affect significantly number of flowers and number of new pods. All treatments of P. fluorescens secondary metabolites were also able to increase the content of phenolic compounds in the cocoa plant.