ABSTRAK

KARAKTERISASI BAKTERI PATOGEN YANG BERASOSIASI DENGAN ARTHROPODA PADA PERTANAMAN KENTANG DI KERTASARI BANDUNG

OLEH

LUTFI APRIYADI

Penyakit bakteri pada tanaman kentang menjadi salah satu kendala utama dalam budidaya karena dapat menurunkan hasil dan kualitas umbi secara signifikan. Selain dipengaruhi faktor lingkungan dan bahan tanam, penyebaran bakteri patogen diduga melibatkan arthropoda sebagai pembawa (*carrier*) atau vektor. Informasi mengenai arthropoda pembawa bakteri patogen pada pertanaman kentang masih terbatas. Penelitian ini bertujuan mengetahui jenis arthropoda pada pertanaman kentang serta mengarakterisasi bakteri patogen yang berasosiasi dengannya di Kecamatan Kertasari, Kabupaten Bandung. Sampel arthropoda dikumpulkan di Desa Tarumajaya, Cibeureum, dan Cikembang menggunakan metode *sweep net* dan pengambilan langsung. Arthropoda yang diperoleh digunakan sebagai sumber isolasi bakteri dari permukaan dan bagian dalam tubuh. Isolat dimurnikan dan dikarakterisasi melalui uji Gram, oksidatif/fermentatif (O/F), *soft rot* pada umbi kentang, hipersensitif pada daun tembakau, patogenesitas pada tanaman kentang, lecithinase, serta kemampuan memanfaatkan berbagai bahan organik. Delapan isolat yang diduga patogen selanjutnya diidentifikasi secara molekuler menggunakan analisis gen 16S rDNA. Hasil penelitian menunjukkan bahwa pertanaman kentang di Kertasari memiliki keragaman arthropoda yang tinggi. Sebanyak 51 isolat bakteri berhasil diisolasi dengan karakter fisiologis dan biokimia yang beragam. Beberapa isolat menyebabkan gejala busuk pada jaringan tanaman dan reaksi hipersensitif yang mengindikasikan sifat patogen. Identifikasi molekuler menunjukkan bahwa isolat tersebut termasuk genus *Alcaligenes*, *Stenotrophomonas*, *Paenibacillus*, dan *Bacillus*. Penelitian ini memberikan informasi awal mengenai potensi peran arthropoda dalam penyebaran bakteri patogen pada pertanaman kentang.

Kata kunci: Arthropoda, bakteri patogen, karakterisasi bakteri, kentang, vektor penyakit tanaman.

ABSTRACT

CHARACTERIZATION OF PATHOGENIC BACTERIA ASSOCIATED WITH ARTHROPODS IN POTATO FIELDS IN KERTASARI BANDUNG

By

Lutfi Apriyadi

Bacterial diseases in potato plants are among the major constraints in potato cultivation, as they can significantly reduce both yield and tuber quality. In addition to environmental factors and planting materials, the dissemination of pathogenic bacteria is suspected to involve arthropods as carriers or vectors. Information regarding arthropods that carry pathogenic bacteria in potato fields is still limited. This study aimed to identify arthropod species present in potato fields and to characterize the pathogenic bacteria associated with them in Kertasari District, Bandung Regency. Arthropod samples were collected from Tarumajaya, Cibeureum, and Cikembang Villages using sweep net and direct collection methods. The collected arthropods were used as sources for bacterial isolation from both external body surfaces and internal body parts. The isolates were purified and characterized through Gram staining, oxidative/fermentative (O/F) tests, soft rot assays on potato tubers, hypersensitivity tests on tobacco leaves, pathogenicity tests on potato plants, lecithinase activity tests, and assessments of the ability to utilize various organic compounds. Eight isolates suspected to be pathogenic were further identified molecularly using 16S rDNA gene analysis. The results showed that potato fields in Kertasari possessed a high diversity of arthropods. A total of 51 bacterial isolates were successfully obtained, exhibiting diverse physiological and biochemical characteristics. Several isolates caused rotting symptoms in plant tissues and hypersensitive reactions, indicating pathogenic properties. Molecular identification revealed that these isolates belonged to the genera Alcaligenes, Stenotrophomonas, Paenibacillus, and Bacillus. This study provides preliminary information on the potential role of arthropods in the dissemination of pathogenic bacteria in potato cultivation systems.

Keywords: *Arthropods, pathogenic bacteria, bacterial characterization, potato, plant disease vectors.*