

INTISARI

Xanthomonas oryzae pv. *oryzae* merupakan penyebab penyakit hawar daun bakteri (HDB) pada tanaman padi (*Oryza sativa* L.). Hawar daun bakteri merupakan penyakit penting yang menjadi pembatas produksi padi di berbagai negara penghasil padi di dunia. Bakteri yang digunakan dalam penelitian ini adalah isolat koleksi Laboratorium Ilmu Penyakit Tumbuhan, Fakultas Pertanian, Universitas Gadjah Mada. Isolat tersebut kemudian diuji dengan minyak atsiri jahe dan cengkeh. Penentuan zona hambat dilakukan pada kedua minyak atsiri, pada minyak atsiri jahe zona hambat terbesar terdapat pada perlakuan 5% sedangkan pada minyak atsiri cengkeh zona hambat terbesar terdapat pada perlakuan 10%. Uji motilitas dilakukan dengan dua cara yaitu *swimming* dan *twitching*. Pada *swimming motility* diameter koloni terkecil terdapat pada konsentrasi 2MIC dan 4MIC minyak jahe dan cengkeh. Pada *twitching motility* diameter terkecil terdapat pada MIC, 2 MIC dan 4MIC pada minyak jahe, sedangkan pada minyak cengkeh terdapat pada konsentrasi 4MIC. Pada pengujian biofilm, kandungan biofilm terendah terdapat pada perlakuan 4MIC jahe dengan OD 0.27 dan 4MIC minyak cengkeh dengan OD sebesar 0.08. Pada pengujian EPS berat terendah terdapat pada perlakuan $\frac{1}{2}$ MIC minyak cengkeh dan $\frac{1}{2}$ MIC minyak jahe. Aplikasi minyak atsiri dan cengkeh mampu menekan faktor virulensi Xoo. Penelitian dirumah kaca dilakukan dengan 3 faktor yaitu varietas tanaman, minyak atsiri yang digunakan, dan inokulasi Xoo. Hasil penelitian menunjukkan pada pengamatan insidensi penyakit, masa inkubasi, dan AUDPC varietas terbaik terdapat pada mekongga dan minyak atsiri terbaik pada jahe. Sedangkan pada intensitas penyakit dan laju infeksi, varietas terbaik pada ciherang dan minyak atsiri terbaik pada cengkeh. Hal ini menunjukkan bahwa pengendalian dengan kedua minyak atsiri dapat menghambat adanya perkembangan Hawar Daun Bakteri padi.

Kata kunci: Hawar daun bakteri, padi, *Xanthomonas oryzae* pv. *oryzae*, minyak atsiri

ABSTRACT

Xanthomonas oryzae pv. *oryzae* is the cause of bacterial leaf blight (HDB) in rice plants (*Oryza sativa* L.). Bacterial leaf blight is important disease that limits rice production in many rice-producing countries in the world. rice-producing countries in the world. The bacteria used in this study are isolates from the Plant Disease Laboratory, Faculty of Agriculture, Universitas Gadjah Mada. Agriculture, Gadjah Mada University. The isolates were then tested with ginger and clove essential oils. Determination of the inhibition zone was carried out on both essential oils, in ginger essential oil the largest inhibition zone was found in the 5% treatment while in clove essential oil the largest inhibition zone was found in the 10% treatment. in the 10% treatment. Motility test was conducted in two ways, namely swimming and twitching. twitching. In swimming motility, the smallest colony diameter was found at concentrations of 2MIC and 4MIC of ginger and clove oils. In twitching motility, the smallest diameter was found in MIC, 2 MIC and 4MIC in ginger oil, while in clove oil, the smallest diameter was found in the concentration of 2MIC and 4MIC. ginger oil, while in clove oil there is a concentration of 4MIC. At biofilm testing, the lowest biofilm content was found in the 4MIC ginger treatment with OD 0.27 and 4MIC clove oil with OD of 0.08. In the test EPS, the lowest weight was found in the treatment of $\frac{1}{2}$ MIC clove oil and $\frac{1}{2}$ MIC ginger oil. ginger. The application of essential oils and cloves is able to suppress Xoo virulence factors. Research in the greenhouse was conducted with 3 factors, namely plant varieties, essential oils used, and Xoo inoculation. The results showed that in the observation of disease incidence, incubation period, and virulence factor of Xoo. The results showed that in the observation of disease incidence, incubation period, and AUDPC, the best variety was mekongga and the best essential oil was ginger. Whereas in disease intensity and infection rate, the best variety was ciherang and the best essential oil was clove. This shows that control with both essential oils can inhibit the development of rice bacterial leaf blight.

Keywords: Bacterial leaf blight, rice, *Xanthomonas oryzae* pv. *oryzae*, essential oil