

ABSTRACT

STUDY OF GOLDEN RAIN SKIN EXTRACT (*Senna multijuga*) AS ANTIBACTERIAL FOR *DICKEYA ORYZAE*

By

TRI RISMA SARI

Potato (*Solanum tuberosum*) is an important horticultural commodity in Indonesia, but its production often decreases due to attacks of soft rot disease caused by *Dickeya oryzae* bacteria. This study aims to evaluate the antibacterial activity of golden rain skin extract (*Senna multijuga*) and the mechanism of the active compound in inhibiting the growth of *D.oryzae* bacteria which are the cause of rot disease and to determine the best fraction concentration in inhibiting the growth of *D.oryzae*. The study was conducted in two stages, namely the test of the fraction of the chromatography column elution results using the descriptive method and the antibacterial activity test with a Complete Randomized Block Design (RAKL) with 6 treatments and 3 replications. Five fractions were tested for inhibition and the best fraction was further tested at various concentrations. The treatment consisted of negative control, positive control, and various concentrations of fraction-1, namely P1 (0.1 ppm), P2 (1 ppm), P3 (10 ppm), P4 (100 ppm), P5 (1000 ppm), P6 (10,000 ppm). Furthermore, the data were analyzed using the barlett test, anova, tuckey test and the Honestly Significant Difference (HSD) test at the 5% level. Based on the test results, it was found that the column chromatography fraction of the golden rain skin extract affected the inhibition of D. Oryzae bacteria in fraction-1 by 18.7 mm. The best fraction concentration produced in fraction-1 with a concentration of 10,000 ppm obtained the highest inhibition of 20.13 mm with a strong category.

Keywords: antibacterial, *D. oryzae*, fraction, hujan emas, inhibition zone.

ABSTRAK

KAJIAN EKSTRAK KULIT HUJAN EMAS (*Senna multijuga*) SEBAGAI ANTIBAKTERI *Dickeya oryzae*

OLEH

TRI RISMA SARI

Kentang (*Solanum tuberosum*) merupakan komoditas hortikultura penting di Indonesia, namun produksinya kerap menurun akibat serangan penyakit busuk lunak yang disebabkan oleh bakteri *Dickeya oryzae*. Penelitian ini bertujuan untuk mengevaluasi aktivitas antibakteri ekstrak kulit hujan emas (*Senna multijuga*) dan mekanisme senyawa aktif tersebut dalam menghambat pertumbuhan bakteri *D. oryzae* yang merupakan penyebab penyakit busuk serta menentukan konsentrasi fraksi terbaik dalam menghambat pertumbuhan *D. oryzae*. Penelitian dilakukan melalui dua tahapan, yaitu uji fraksi hasil elusi kolom kromatografi menggunakan metode deskriptif dan pengujian aktivitas antibakteri dengan Rancangan Acak Kelompok Lengkap (RAKL) dengan taraf 6 perlakuan dan 3 kali ulangan. Lima fraksi diuji terhadap daya hambat dan fraksi terbaik dilakukan uji lanjut pada berbagai konsentrasi. Perlakuan terdiri atas kontrol negatif, kontrol positif, serta berbagai konsentrasi fraksi-1 yaitu P1 (0,1 ppm), P2 (1 ppm), P3 (10 ppm), P4 (100 ppm), P5 (1000 ppm), P6 (10.000 ppm). Selanjutnya data dianalisis menggunakan uji *barlett*, *anova*, uji *tuckey* dan uji Beda Nyata Jujur (BNJ) pada taraf 5%. Berdasarkan hasil uji didapati bahwa fraksi kolom kromatografi ekstrak kulit hujan emas berpengaruh terhadap daya hambat bakteri *D. Oryzae* pada fraksi-1 sebesar 18,7 mm. Konsentrasi fraksi terbaik yang dihasilkan pada fraksi-1 dengan konsentrasi 10.000 ppm memperoleh daya hambat tertinggi sebesar 20,13 mm dengan kategori kuat.

Kata kunci: antibakteri, *D. oryzae*, fraksi, hujan emas, zona hambat.