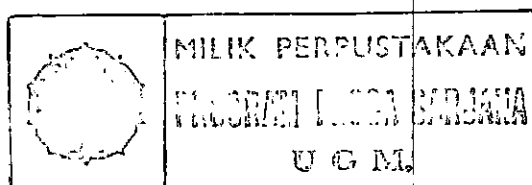


## INTISARI

### Tanggapan Beberapa Spesies Jeruk (*Citrus spp*) terhadap Patogenisitas *Xanthomonas axonopodis* pv. *citri*

Penelitian dilaksanakan mulai April 2002 sampai Mei 2003 untuk mengetahui tanggapan beberapa spesies jeruk terhadap patogenisitas *X. axonopodis* pv. *citri*. Penelitian dilaksanakan di Laboratorium Bakteriologi dan Bioteknologi Pertanian Universitas Gadjah Mada Yogyakarta, Lolit Jeruk Tlekung, dan Kebun Teknologi Pertanian Dau Jawa Timur. Pengamatan intensitas penyakit dan luas serangan dilakukan di beberapa agroklimat berbeda di Jawa Timur. Intensitas penyakit kanker jeruk pada jeruk nipis (*C. reticulata*) 2,91%-18,63%, purut (*C. hystrix*) 4,16%-9,6%, dan siem (*C. suhuiensis* Tan.) 0,83% dengan luas serangan nipis 26,6%-88,8, purut 45,8%-68%, dan siem 7,69%. Tujuh isolat bakteri dikoleksi dari daerah tersebut, berdasarkan uji patogenisitas dan hipersensitif diperoleh 2 isolat yaitu HY dan LJ yang memiliki tingkat virulensi tertinggi dan dipergunakan sebagai isolat untuk penelitian selanjutnya. Tujuh spesies jeruk dengan umur daun berbeda dipergunakan dalam perlakuan. Dua macam metode inokulasi yang dipergunakan yaitu luka dan tanpa luka dengan meneteskan 10 µl suspensi bakteri dengan kerapatan  $10^8$  cfu/ml pada setiap titik inokulasi. Kondisi umur daun paling rentan bagi beberapa spesies jeruk yaitu : manis dan siem pada daun berumur 13-15 hari; nipis dan grapefruit pada daun berumur 13-15 dan 20-22 hari; purut dan pamelos pada daun berumur 13-15, 20-22, dan 27-29 hari; keprok tahan pada semua umur. Daun berumur 13-15 hari adalah umur yang paling rentan dibanding umur daun 20-22 hari dan 27-29 hari. Daun yang luka pada saat berumur 13-15, 20-22, dan 27-29 hari, intensitas penyakitnya lebih tinggi dan terus meningkat pada pengamatan 7 sampai 56 hari setelah inokulasi (hsi), disisi lain daun yang tidak luka hanya meningkat pada daun berumur 13-15 hari pada pengamatan 7 sampai 35 hsi. Pengamatan histologi daun dilakukan untuk mengetahui kerapatan dan bentuk stomata dari tujuh spesies jeruk. Kerapatan stomata pada daun 7 spesies jeruk berkisar antara 371,80-1029,60 bh/mm<sup>2</sup>, menunjukkan interaksi antara kerapatan stomata dengan spesies, umur daun, dan kombinasi keduanya. Diketahui terdapat korelasi antara intensitas penyakit dengan kerapatan stomata khususnya pada daun berumur 13-15 hari. Makin tinggi kerapatan stomata makin tinggi intensitas penyakitnya.

Kata kunci : Tanggapan, spesies jeruk, inokulasi, *Xanthomonas axonopodis* pv. *citri*.



## ABSTRACT

### The Respond of Some Citrus Species (*Citrus* spp) to the Infection *Xanthomonas axonopodis* pv. Citri

The research was conducted from April 2002 to May 2003 to study the respond of some citrus species (*Citrus* spp) to the infection of *Xanthomonas axonopodis* pv. citri. Some of the research was done at Gadjah Mada University, Faculty of Agriculture, the laboratories of Bacteriology and Agricultural Biotechnology. The other part of the research was conducted at Citrus Research Station Tlekung and Technology Farm Dau East Java. A survey to observe disease incidence and severity was conducted at different agro climate of citrus production center in East Java. Citrus canker disease incidences on lime ranged from 2,91%-18,63%, on hystrix 4,16%-9,6%, and on siem was 0,83%. The disease severities on lime ranged from 26,6%-88,8, on hystrix 45,8%-68%, and on siem was 7,69%. Seven bacterial isolates were collected from those areas, based on the pathogenicity and hypersensitivity tests two isolates of them isolates HY and IJ had high virulence were then used further research. Seven citrus species were used in the experiments, with different range of leaf ages. Two different inoculation methods with and without wounding, and drop inoculation of 10 µl bacterial suspension at 10<sup>8</sup> cfu/ml were applied for each inoculation site. The most susceptible leaf age for each species was on sweet orange (*C. sinensis*) and siem (*C. Suhuiensis* Tan.) at the age of leaves ranged from 13-15 days; on lime (*C. aurantifolia*) and grapefruit (*C. paradisi*) the age of leaves ranged from 20-22 days and 27-29 days; on hystrix (*C. hystrix*) and pamelo (*C. grandis*) at the age of leaves ranged from 13-15 days, 20-22 days, and 27-29 days; and mandarin (*C. reticulata*) tolerance on all ages. The age of leaves ranged from 13-15 days was the most susceptible compared to the age of leaves ranged from 19-22 and 27-29 days. The wounded leaves on the age of leaves ranged from 13-15 days, 20-22 days, and 27-29 days showing the increase of disease severities at the observation from 7 to 56 days after inoculation. On the other hand the disease severity on unwounded leaves at the age of leaves ranged from 13-15 days increased from 7 to 35 days after inoculation. The histology studies was conducted to know the density and the morphology of stomata on the citrus species. The density of stomata ranged from 371,80-1029,60 /mm<sup>2</sup> on seven species observed. There was an interaction among species, leaf age, and their combination with stoma densities. There was correlation between disease severity and stomata densities especially at the age of leaves ranged from 13-15 days. The higher the stoma densities the higher the disease severity.

Keys word : Respond, citrus species, inoculation, *Xanthomonas axonopodis* pv. citri.