

INDAH PUTRI RAMADHANI. NIM 21.03.111.00029. Uji Ketahanan Konstitutif Terhadap Penyakit Kuning Pada Dua Spesies Tanaman Cabai (*Capsicum frutescens* dan *Capsicum annuum*) Dibawah bimbingan: **Ir. Achmad Djunaedy, M.P. dan Dr. Ir Catur Hermanto, M.P.**

ABSTRAK

Produksi cabai di Indonesia mengalami penurunan akibat serangan penyakit daun keriting kuning yang disebabkan oleh *Pepper yellow leaf curl virus* (PepYLCV) dan ditularkan oleh serangga vektor *Bemisia tabaci*. Penggunaan varietas cabai tahan merupakan salah satu strategi pengendalian yang berkelanjutan. Penelitian ini bertujuan untuk mengetahui tingkat ketahanan penyakit daun keriting kuning pada beberapa varietas cabai dari dua spesies, *Capsicum annuum* dan *Capsicum frutescens*, serta mengkaji karakter agronomis, fisiologis, dan anatomi yang berkaitan dengan ketahanan terhadap penyakit. Penelitian dilaksanakan menggunakan Rancangan Acak Kelompok (RAK) non-faktorial dengan sembilan perlakuan varietas dan tiga ulangan sehingga diperoleh 27 unit percobaan. Parameter yang diamati meliputi insidensi dan intensitas penyakit, nilai AUDPC, serta karakter agronomis, fisiologis, dan anatomi tanaman. Data dianalisis menggunakan analisis ragam dan uji orthogonal kontras untuk membandingkan respons antar spesies. Hasil penelitian menunjukkan adanya perbedaan tingkat ketahanan penyakit daun keriting kuning antar varietas cabai. Varietas PM 999 dan Tangguh tergolong tahan dengan nilai insidensi dan AUDPC yang rendah, sedangkan varietas Dewata dan Bhaskara tergolong rentan. Varietas Tangguh menunjukkan keseimbangan antara pertumbuhan dan ketahanan yang didukung oleh kandungan klorofil tinggi, kepadatan trikoma, serta ukuran stomata relatif kecil sebagai komponen ketahanan konstitutif. Sebaliknya, varietas Dewata memiliki pertumbuhan vegetatif dan fruit set tinggi namun lebih rentan terhadap penyakit. Hasil uji orthogonal kontras menunjukkan bahwa perbedaan respons antar spesies tidak terjadi pada seluruh parameter, melainkan terbatas pada beberapa parameter tertentu pada minggu pengamatan tertentu

Kata kunci: cabai, *Capsicum frutescens*, *Capsicum annuum*, penyakit daun keriting kuning, ketahanan varietas, PepYLCV.

INDAH PUTRI RAMADHANI. NIM 21.03.111.00029. Constitutive Resistance Test to Yellowing Disease in Two Chili Plant Species (*Capsicum frutescens* and *Capsicum annuum*) Under the guidance of: **Ir. Achmad Djunaedy, M.P. dan Dr. Ir Catur Hermanto, M.P.**

ABSTRACT

Chili pepper production in Indonesia has declined due to yellow leaf curl disease caused by *Pepper yellow leaf curl virus* (PepYLCV), which is transmitted by the insect vector *Bemisia tabaci*. The use of resistant chili varieties is considered a sustainable disease management strategy. This study aimed to evaluate resistance levels to yellow leaf curl disease among several chili varieties from two species, *Capsicum annuum* and *Capsicum frutescens*, and to examine agronomic, physiological, and anatomical traits associated with disease resistance. The experiment was conducted using a non-factorial Randomized Complete Block Design (RCBD) with nine varietal treatments and three replications, resulting in 27 experimental units. Observed parameters included disease incidence and intensity, AUDPC values, as well as agronomic, physiological, and anatomical characteristics. Data were analyzed using analysis of variance followed by orthogonal contrast tests to compare responses between species. The results showed differences in resistance levels to yellow leaf curl disease among chili varieties. PM 999 and Tangguh were classified as resistant, exhibiting low disease incidence and area under disease progress curve (AUDPC) values, whereas Dewata and Bhaskara were classified as susceptible. Tangguh variety exhibited a balance between growth and resistance, supported by high chlorophyll content, higher trichome density, and relatively smaller stomatal size as components of constitutive resistance. In contrast, Dewata variety showed high vegetative growth and fruit set but was more susceptible to the disease. Overall, orthogonal contrast analysis revealed that differences in response between chili species were not observed across all parameters but were limited to certain disease, anatomical, physiological, and agronomic parameters at specific observation periods.

Keywords: chili pepper, *Capsicum frutescens*, *Capsicum annuum*, yellow leaf curl disease, variety resistance, PepYLCV, *Bemisia tabaci*