

INTISARI

Chrysanthemum stunt viroid (CSVd) merupakan patogen yang mampu menyebabkan penyakit pada tanaman bunga krisan di Jepang. Insidensi penyakit yang disebabkan infeksi CSVd pada tanaman bunga krisan di Jepang mampu mencapai 70-90%. CSVd diketahui memiliki kisaran inang yang cukup luas, salah satunya tanaman dari famili Solanaceae. Penelitian ini bertujuan untuk mengetahui kemampuan infeksi dan distribusi CSVd pada jaringan tanaman tomat dengan melakukan deteksi secara molekuler. Penelitian ini dilakukan dengan inokulasi CSVd secara mekanik pada tanaman tomat kultivar MicroTom dan Reiyoh di *greenhouse* milik Fakultas Pertanian, Yamagata University. Selain itu, dilakukan pengamatan terhadap variasi gejala akibat infeksi CSVd dibandingkan dengan perlakuan kontrol pada dua kultivar tanaman tomat tersebut. Identifikasi dan kemampuan infeksi CSVd dilakukan dengan metode *Reverse Transcriptase Polymerase Chain Reaction* (RT-PCR) menggunakan primer spesifik CSVd-1F dan CSVd-1R. Hasil identifikasi menunjukkan bahwa seluruh tanaman tomat yang diinokulasi CSVd positif terinfeksi CSVd ditandai dengan munculnya band berukuran 354 bp. Hasil analisis sekuens RNA isolat CSVd yang diperoleh memiliki kemiripan tertinggi sebesar 100% dengan CSVd Kyoto Japan dan USA dengan nomor aksesori LC093170.1 dan JQ809261.1. Distribusi CSVd melalui analisis PCR ditemukan berada pada bagian pucuk daun, daun tua, dan tunas air jaringan tanaman tomat yang terinfeksi CSVd. Kemampuan infeksi CSVd pada tanaman tomat kultivar MicroTom dan Reiyoh sebesar 100%. Variasi gejala pada tanaman tomat kultivar MicroTom, seperti daun pucuk terdapat bercak kekuningan hingga putih dan buah tomat mengalami malformasi. Sedangkan, pada tanaman tomat kultivar Reiyoh gejala hanya tampak pada fase vegetative ditandai adanya bercak kekuningan pada berbagai spot daun.

Kata Kunci : CSVd, Tanaman Tomat, RT-PCR, Uji Virulensi

ABSTRACT

Chrysanthemum stunt viroid (CSVd) is a pathogen that causes disease in chrysanthemum plants in Japan. The incidence of the disease caused by CSVd infection in chrysanthemum flowers in Japan can reach 70-90%. CSVd is known that have a wide host range, including plants from the Solanaceae Family. This study aims to investigate the infection capability and distribution of CSVd in tomato plant tissues through molecular detection. The research was conducted by mechanically inoculating CSVd on the MicroTom and Reiyoh tomato cultivars in the greenhouse of the Faculty of Agriculture, Yamagata University. Additionally, observations were made on the symptom variations resulting from CSVd infection compared to control treatments in the two tomato cultivars. Identification and infection capability of CSVd were carried out using the Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) method with specific primers CSVd-1F and CSVd-1R. The identification results indicated that all tomato plants inoculated with CSVd tested positive for CSVd infection, as evidenced by the appearance of a 354 bp band. The RNA sequence analysis of the obtained CSVd isolate showed the highest similarity of 100% with CSVd from Kyoto, Japan, and the USA with accession numbers LC093170.1 and JQ809261.1. The distribution of CSVd, as determined by PCR analysis, was found in the leaf tips, old leaves, and side shoot of the infected tomato plants. The infection capability of CSVd in the MicroTom and Reiyoh tomato cultivars was found to be 100%. Symptom variations in the MicroTom cultivar included yellowing to white spots on the young leaves and malformations in the tomatoes fruit. In contrast, symptoms in the Reiyoh cultivar were only observed during the vegetative phase, characterized by yellowing spots on various leaf areas.

Keywords : CSVd, Tomato Plants, PCR, Virulence Test