

**DETEKSI MOLEKULER BEGOMOVIRUS PENYEBAB PENYAKIT
DAUN KERITING KUNING PADA TANAMAN CABAI RAWIT (*Capsicum
frutescens* L. 'Cempluk')**

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INTISARI

Tanaman cabai rawit dapat terinfeksi Begomovirus melalui serangga vektor kutu kebul (*Bemisia tabaci*). Infeksi Begomovirus menyebabkan adanya gejala tanaman menjadi kerdil serta daun keriting kuning. Penanda gen *coat protein* (CP) Begomovirus dapat digunakan sebagai deteksi awal virus tersebut pada tanaman. Penelitian ini bertujuan untuk mendeteksi Begomovirus pada tanaman cabai rawit (*Capsicum frutescens* L. 'Cempluk') dan mengamati gejala penyakitnya pada tanaman. Pengamatan tanaman cabai rawit dan sampling dilakukan di Desa Madurejo, Prambanan, Sleman sedangkan deteksi gen CP secara molekuler dilakukan di Laboratorium Genetika dan Pemuliaan, Fakultas Biologi UGM. Deteksi dilakukan dengan isolasi DNA dan amplifikasi gen *coat protein* menggunakan PCR menggunakan primer universal gen CP/AV1 Begomovirus yaitu *Krusty* dan *Homer*. Pada hasil elektroforesis, terdapat 7 sampel tanaman yang terdapat pita DNA berukuran ± 580 bp sehingga positif terinfeksi Begomovirus. Urutan nukleotida dari tahapan sekuensing DNA kemudian diidentifikasi dengan menggunakan BLAST dan dilanjutkan dengan analisis filogenetik. Beberapa jenis Begomovirus yang menginfeksi tanaman cabai rawit 'Cempluk' yaitu adalah *Pepper yellow leaf curl Indonesia virus* (PepYLCIV) dan PepYLCIV [Ageratum]. Kedua *strain* tersebut memiliki kekerabatan yang dekat dengan jenis PepYLC dari berbagai daerah di Indonesia.

Kata kunci : Begomovirus, Cabai, DNA, PCR.

**MOLECULAR DETECTION OF BEGOMOVIRUS CAUSING YELLOW
LEAF CURL DISEASE IN CHILI PEPPER (*Capsicum frutescens* L.
'Cempluk')**

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ABSTRACT

The chili pepper can be infected by Begomovirus through whitefly (*Bemisia tabaci*) as a vector. The symptoms of infected plants are dwarf plants and yellow curly leaves. Marker of coat protein (CP) gene Begomovirus can be done as a preliminary detection of Begomovirus. This study was aimed to detect Begomovirus in chili pepper (*Capsicum frutescens* L. 'Cempluk') molecularly and observe the symptoms of the disease in plants. Observation and sampling was conducted in Madurejo, Prambanan, Sleman while molecular detection of CP gene was done in Laboratory of Genetics and Breeding, Faculty of Biology UGM. Detection was done by coat protein gene amplification using PCR by the CP / AV1 Begomovirus universal primer, Krusty and Homer. Results of electrophoresis showed that 7 plant samples produced DNA bands of ± 550 bp which indicated Begomovirus infection. The nucleotide sequences as the results of DNA sequencing step was analyzed and identified using BLAST and followed by phylogenetic analysis. This analysis showed that the Begomoviruses infected 'Cempluk' pepper were *Pepper yellow leaf curl Indonesia virus* (PepYLCIV) and PepYLCIV [Ageratum]. Both strains have close relationship to the types of PepYLC from various regions in Indonesia.

Keywords : Begomovirus, Pepper, DNA, PCR.