MOLECULAR IDENTIFICATION OF SUSPECTED VIRAL DISEASE ATTACK IN PEPPER (*PIPER NIGRUM* L.) PLANTS IN BANJARNEGARA

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ABSTRACT

The decline in black pepper (*Piper nigrum* L.) production in Banjarnegara is suspected to be associated with viral disease, based on field symptoms resembling mottel disease commonly linked to CMV(Cucumber Mosaic Virus) and PYMoV (Pepper Yellow Mottle Virus). This study aimed to detect the presence of CMV and PYMoV, characterize symptom in the field, and determine the intensity of plant damage caused by these viruses. Symptomatic pepper plant samples were collected from cultivation areas in Banjarnegara. Detection was performed using PCR for PYMoV and reverse-transcription for CMV, utilizing specific primers for each virus. The presence of the viruses was indicated by amplicons of expected DNA fragment sizes observed on electrophoresis gels. Plant damage intensity was assessed using a scoring method on samples selected based on a diagonal sampling pattern.The results showed that no amplicons of the target sizes were obtained in any of the samples. Electrophoresis using PYMoV primers revealed only smears, while no bands appeared using CMV primers. These findings suggest the absence of CMV and PYMoV in the tested samples, this indicating the possible involvement of other virus or abiotic disorders. T-Test analysis indicated a significant difference in damage intensity between plants suspected of viral infection and those affected by other causes. Further studies employing broader molecular diagnostic are recommended to identifying the actual pathogen that involved in the field.

Keyword: Banjarnegara, CMV, Detection, PCR*, Piper nigrum* L, PYMoV.