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DISEASE NOTES



First Report of Natural Occurrence of Watermelon Bud Necrosis Virus in Round Melon (*Praecitrullus fistulosus*) in India

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Praecitrullus fistulosus (Stocks) Pangalo, commonly known as round melon, belongs to the family Cucurbitaceae. It is being cultivated and consumed widely in northern India for its nutritional value. During summer (April to May) 2018, nearly 80% of plants with symptoms resembling virus infection, such as chlorotic and necrotic spots on leaves and necrosis on buds, were observed in experimental plots of the research farm at ICAR-Indian Institute of Vegetable Research, Varanasi. Infected plants died before attaining the fruiting stage. Based on the symptoms observed on the infected plants and presence of thrips, infection of orthospovirus in symptomatic plants of round melon was suspected. Hence, dot immunobinding assay (DIBA) and reverse transcription polymerase chain reaction (RT-PCR) were performed to confirm identification. Initially, samples subjected to DIBA with antibody raised against groundnut bud necrosis virus (watermelon silver mottle virus [WSMoV]

serogroup) obtained from ICRISAT (Hyderabad, India) showed positive reaction in all five symptomatic samples but not in asymptomatic samples. Also, sap extracted in phosphate buffer pH 7.0 amended with 0.1% β -mercaptoethanol of symptomatic sample was mechanically inoculated on cowpea plants, cultivar Co(CP) 7, and produced chlorotic local lesions on the inoculated cotyledonary leaves 4 to 6 days post inoculation. For further investigation, total RNA was extracted using TRIzol reagent (Ambion, U.S.A.) from five symptomatic samples and apparently healthy samples and subjected to RT-PCR using universal orthospovirus primer pair corresponding to L RNA (Chu et al. 2001). An amplicon of approximately 800 bp yielded only from symptomatic samples was cloned in pTZ57R/T vector (Fermentas, Germany). Three clones were sequenced in both orientations, and the consensus sequence (MH717082) shared an identity of 92% with watermelon bud necrosis virus (WBNV) belonging to WSMoV serogroup isolate reported from India on watermelon (KJ874251). Further, the specific primer pair of WBNV (GK WBNV F/R) encompassing the complete coat protein gene on S RNA amplified 947 bp (Priyanka et al. 2018) from all five symptomatic samples, and the amplicon was sequenced directly. The consensus sequence (MH717083) had 95% identity with the coat protein gene of WBNV isolates reported earlier from India on various crops. These results indicated infection of WBNV in symptomatic round melon samples. WBNV has been reported on several cucurbitaceous and solanaceous crops from India (Kunkalika et al. 2011). This study suggests *P. fistulosus*, cultivated in select pockets of northern India, as an additional host for WBNV. To the best of our knowledge, this is the first confirmed report of natural occurrence of WBNV on *P. fistulosus* in India.



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