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Research Article

Occurrence of Novel Arepaviruses in Major Arecanut Plantations of Karnataka, India

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Abstract

Arecanut (*Areca catechu* L.) a palm that belongs to the family Arecaceae, is mainly cultivated in Malanad, Coastal and Plains region of Karnataka. Extensive roving survey was conducted in twenty six talukas of six districts of Karnataka during July 2023 to October 2024, in 180 arecanut plantations to know the novel *Arepaviruses* disease incidence. After observing the visual symptoms on arecanut leaves and coat protein amplifications, two Arepaviruses *viz*., areca palm necrotic ring spot virus (ANRSV) and areca palm necrotic spindle spot virus (ANSSV) as well as their mixed infection (ANRSV+ANSSV) were observed on arecanut leaflets. The survey study revealed that among six districts surveyed, Shivamogga district recorded maximum disease incidence followed by North Canara District. However, both the Arepaviruses present in all the surveyed arecanut plantations either individually or combined together on same leaf of arecanut plant. During the survey both viral diseases were noticed on the outermost leaf in the border arecanut palms compared to the interior part of the plantation. Based on molecular characterization and symptoms of ANSSV alone is the first report of arepavirus from India and synergistic effect of ANSSV combined with ANRSV is another first report arepaviruses in the world.

Keywords: Arepavirus, ANRSV, ANSSV, Arecanut and ANRSV+ ANSSV Mixed infection

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