Nut fall of coconut -Invasive Rugose Spiraling Whitefly (RSW) infestation in Godavari

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Introduction

Coconut (*Cocos nucifera L.*) is a valuable plantation crop in India cultivated for oil and other raw materials. Every component of a coconut tree has a specific usage or application. It is commonly called "Tree of Heaven", "Tree of Abundance", "Tree of Life" and "Kalpavriksha".Andhra Pradesh is one of the most important coconut growing states in India.In the present scenario of climatic change this valuable palm is devastated by incidence of several pests and diseases that not only deteriorate the quality of nuts but also reduced the vigour and yield of palms (Chowdappa *et al.*,2018 and Neeraja *et al.*, 2020). In the recent era, coconut palms are damaged with invasion of many new pests, predominantly whiteflies. Invasion of rugose spiraling whitefly (RSW), *Aleurodicus rugioperculetus Martin* has been reported from India in Tamil Nadu (Sundararaj and Selvaraj, 2017) and Andhra Pradesh (Chalapathi Rao *et al.*,2018). The exotic and invasive RSW feeds and reproduces prolifically on the surface of coconut palm leaves (Sundararaj and Selvaraj, 2017 and Srinivasan *et al.*, 2017) which

General view of experimental plot of coconut at Kalavalapalli village

immature nut fall in coconut was due to incidence of mealy bugs (*Dysmicocus spp.*), scale insects (*Aspidiotus destructor*), mites (*Dolichotetranychus spp.*), *Cyclodes omma* larvae and weevil (*Meridolus spp.*). However, literature on the dropped nuts in coconut palms due to RSW is very meagre. Nut yield reduction must be quantified so as to plan realistically for research and development plans in coconut palms. As a result, the present investigation was carried out to estimate the dropped nuts (%) of coconut in relation to *A. rugioperculatus* infestation at different intensities

Studies on immature nut fall in rugose spiraling whitefly (RSW) infested coconut palms with low (<10 spirals per leaflet), medium (10 – 20 spirals per leaflet) and high (> 20 spirals per leaflet) incidence in Dr. YSRHU - Godavari Ganga hybrid and local East Coast Tall (ECT) variety were undertaken at Horticultural Research Station (HRS), Ambajipeta and Kalavalapalli plantations.

Nut fall in Godavari Ganga hybrid at HRS, Ambajipeta and Kalavalapalli

The overall dropped nuts (%) was 4.84, 27.48 and 35.32 per cent at Dr. YSRHU - HRS, Ambajipeta, whereas it was recorded to be 5.50, 28.11 and 36.01 per cent in Dr. YSRHU - Godavari Ganga hybrid palms with low, medium and high RSW incidence during the year 2020-21 at Kalavalapalli.

Nut fall in local East Coast Tall (ECT) at HRS, Ambajipeta and Kalavalapalli

The average per cent of dropped nuts in ECT variety with low infestation was representing the general dropping with 4.06 and 4.68 per cent at Dr. YSRHU - HRS, Ambajipeta and Kalavalapalli during the year 2020-21. In case of ECT palms with medium and high RSW infestation, the nut dropping (%) was 22.33 and 28.51 per cent (Dr. YSRHU - HRS, Ambajipeta), 23.49 and 30.58 per cent (Kalavalapalli).

The dropped nuts (%) per palm per year was recorded based on the initial button setting and number of dropped nuts in RSW infested palms of Dr. YSR HU - Godavari Ganga hybrid and East Coast Tall variety with low, medium and high RSW incidence at both experimental locations. The nut dropping was recorded to be more in case of palms with high followed by medium RSW incidence, whereas comparatively minimal nut dropping was observed in palms under low incidence of RSW.

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