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RESEARCH NOTE

Incidence of wax scale, genus *Ceroplastes* sp. nr. *pseudoceriferus* (Hemiptera: Coccidae) on guava (*Psidium guajava* L.)

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ABSTRACT: Incidence of wax scale *Ceroplastes* sp. nr. *pseudoceriferus* on guava (*Psidium guajava* L.) was observed to be increasing in some parts of Karnataka and Tamil Nadu. This scale insect was found damaging the guava leaves and tender shoots. The honeydew exudation causes sooty mold affecting photosynthesis and fruits become unfit for marketing. The mean number (± SE) of scales per leaf and shoot recorded was 5.4±1.32 (Range: 1-16) and 41.2±14.54 (Range: 10-89) respectively. Even it is being reported on other crops like pomegranate. The thick covering of wax substance on the insect body protects them from pesticide-based management practices.

Keywords: Wax scale, *Ceroplastes*, Guava, emerging pest, horticultural crops

Guava (*Psidium guajava* L.) is an important fruit crop of India and is commercially grown across the country for its nutritional value. Several pests and diseases are constraints in guava cultivation. During our survey we observed severe incidence of wax scale, *Ceroplastes* sp. Gray on the leaves and shoots of guava plants in Tumkur and Doddaballapur regions near Bengaluru, Karnataka, India. The severity of the incidence was estimated to the tune of 25per cent. The mean number of scales recorded were 41.2±14.54 (Range 10.00-89.00) and 5.4±1.32 (Range: 1.00-16.00) per shoot/leaf respectively. So far, the *Ceroplastes* Gray was restricted mainly to the ornamental crops and fruit crops like citrus. This study reports *Ceroplastes* Gray as an emerging pest on guava. Further, authors also noticed its occurrence on other fruit crops like pomegranate.

Further, the wax scale incidence was also observed in the experimental fields of guava at ICAR-IIHR, Bengaluru. The number of scales were counted on 50 plants, in each plant 10 shoots (15 cm length) were randomly selected. The mean number of adult scales per shoot was 6.08 ± 0.69 whereas, the mean number of early instars was 7.6 ± 1.36 per leaf. A characteristic feeding site allocation was observed between the adult and immature stages. The immature stages feed on the midrib or secondary veins on the upper surface of the leaf. Whereas, the adults restrict their feeding on the midrib vein of the undersurface of the leaf. The immatures appear like small white spots on the leaf. The adults were found feeding mainly on the ventral leaf midrib veins, leaf petiole, fruit stalk, pencil thickness shoots (Fig.1). Sooty mold was observed on the plant parts due to honey dew secretion by these scales.

The genus *Ceroplastes* Gray (Subfamily: Ceroplastinae) comprises several species of wax scales *viz.*, *Ceroplastes floridensis* Comstock; *Ceroplastes rubens* Maskell; *Ceroplastes sinensis* Del Guercio; *Ceroplastes ceriferus* (Fabricius); Ceroplastes pseudoceriferus *Ceroplastes destructor* Newstead; *Ceroplatses rusci* (Linnaeus), *etc*., that are polyphagous on various horticultural crops and distributed in tropical and subtropical regions. Genus, *Ceroplastes* comprises a homogenous group of soft scale species characterized by thick wax that covers the body of the adult female, thus, they are called wax scales. The scales were dark yellowish brown to pale yellowish brown, about 3mm long, globular and smooth in shape. It has lobes on each side and a depression on the top (Fig.1). Typical of other scale insects, both adults and nymphs suck sap from the phloem, and the exudates excreted from their bodies cause sooty mold accumulation on plant foliage and fruits (Summerville 1934, 1935, Loch, 1997). Their direct feeding injury may not lead to economic damage but the honeydew exudation linked sooty mold development on the foliage/fruits reduces the photosynthetic efficiency in general and such stained fruits are usually unmarketable.

Management practices involving chemical and integrated methods have been explored against this pest with limited success (Mansor and Nayef, 2018). The thick wax covering their bodies make them tough to manage once establishes in the orchard. Biological control

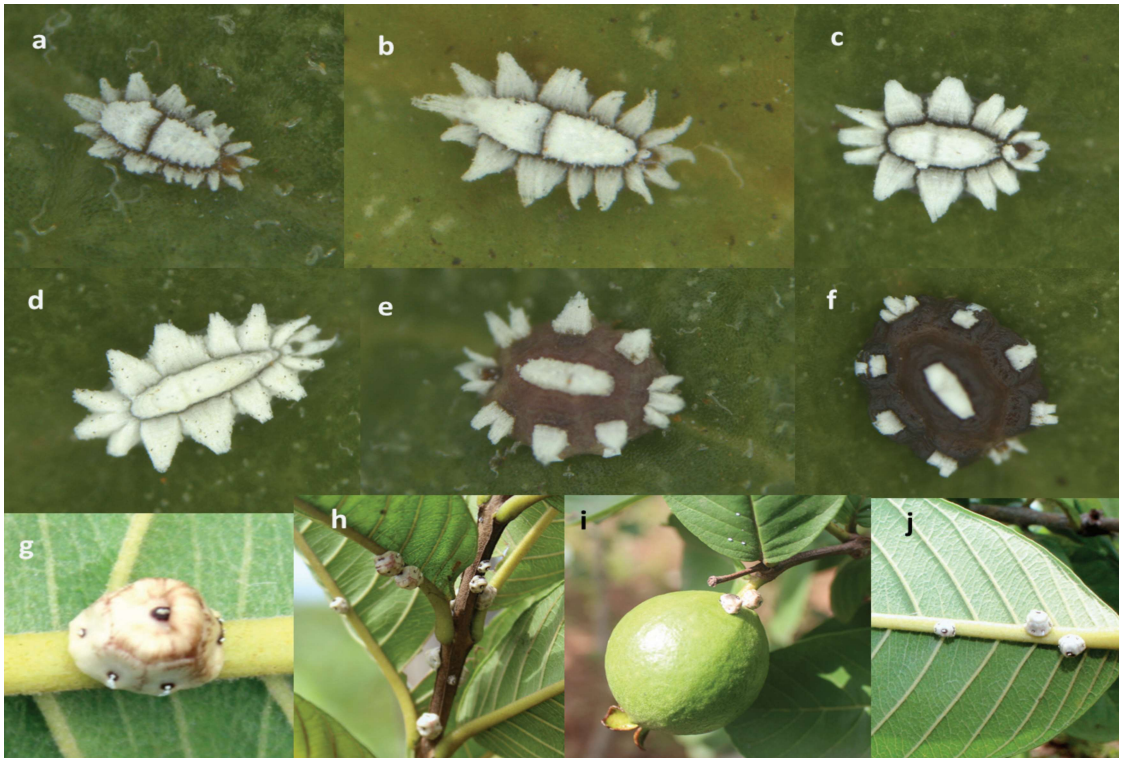

Fig 1. Wax scale, *Ceroplastes* Sp. nr. *pseudoceriferus* ; a-f: Immature scales, g: Adult, h-j: wax scales infesting different plant parts of guava

through natural enemies is an alternate option to be explored. *Echinoleucopis* spp. (Diptera: Chamaemyiidae) was reported as predator on eggs within the ovisac of *Ceroplastes* (Stephen and Vitali, 2001). Seven species of *Metaphycus* Mercet (Hymenoptera: Encyrtidae) were reported parasitizing *Ceroplastes* (Tavares *et al*., 2019). However, at present there are no specific predators or parasitoids available locally, emphasizing the need to explore natural enemies' specific to *Ceroplastes*. Detailed studies to understand its pestilence and management interventions are being envisaged.

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