

## First report of mealybug, *Formicococcus polysperes* Williams infestation in ginger from Kerala, India

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Ginger is a herbaceous perennial and its pungent rhizomes are widely used as spice and for medicinal purpose. India is a leading producer of ginger and is grown in most of the states. Kerala and Meghalaya are the major ginger growing states in India. Kerala contributes 70% of total ginger production of India (KAU Agri Infotech portal, n.d.). In Kerala ginger is cultivating as an intercrop in coconut and aracanut gardens or as mixed crop in homestead farming. Ginger rhizomes are attacked by many insect pests like borers and scales which affects its production. About 20 species of insect pests have been recorded on ginger crops during different stages of its growth in India. Some of these pests cause enormous economic losses (Awal *et al.*, 2003). Here we report the infestation of ginger rhizomes by the mealybug, *Formicococcus polysperes* Williams for the first time from South India.

During the survey conducted for the documentation of root mealybugs in black pepper from August 2013 to July 2014 in pepper gardens of Wayanad and Idukki districts of Kerala, ginger grown as mixed crop was found to be infested by mealybug, *Formicococcus polysperes* Williams. The colonies including both nymphs and adults were found to infest ginger rhizomes. Mealybug colonies suck

sap from rhizomes causing yellowing and eventually lead to drying up of plant. It was found only on rhizomes and not on the aerial parts of the plant.

The infested plants were easily identified by the presence of ant colonies in rhizosphere which was associated with the pest symbiotically. The ant species was identified as *Crematogaster rogenhoferi* (Hymenoptera: Formicidae) which helps in the dispersal of the pest from infested plants to the healthy plants.

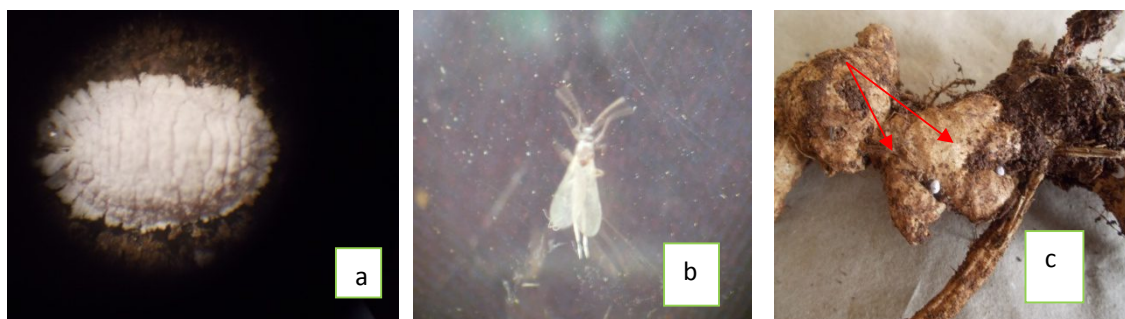
First report of *F. polysperes* infestation in ginger in India was from Meghalaya in 2015. At the time of harvest, 48.3% ginger rhizomes were found to be infested and observed severe crop loss in nearby storage facility (Firake *et al.*, 2015). Williams (2004) has described this species which was collected from roots of *Macaranga triloba* (Thunberg) Muller Agroviensis from Malaysia in 2004 and provided details of host plants and distribution of the species on roots of *Macaranga triloba*, *Macaranga conifera* and *Sapium buccatum* (Euphorbiaceae) from Malaysia, on roots of *Zingiber officinale* (Zingiberaceae), *Cocos nucifera* and *Rhapis excelsa* (Araceae) from Philippines, on roots of *Z. officinale* from Thailand, on roots of *Lansium domesticum*

from Vietnam. In India, it has reported on roots of *P. nigrum* (Kerala), *P. betle* (Madhya Pradesh, Uttar Pradesh, and West Bengal), on pods of *A. hypogaea* (Orissa) and on *A. catechu* (Uttar Pradesh).

Adult females of *F. Polysperes* are oval shaped and pink in colour with waxy coating. Waxy filaments surrounding the body margin are short and thick whereas it is pyramid shaped on dorsal body. Males are slender with a pair of opaque wings, a pair of waxy caudal filaments and long antennae.

The details on its biology, bio-ecology, natural enemies and control measures are least available in literature, so a detailed study has to be conducted on these aspects to develop a sustainable management practice against the pest.

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**Fig. 1: *Formicococcus polysperes* a) Adult female b) Male c) *Formicococcus polysperes* infestation on ginger rhizomes**

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