

## Invasion and Establishment of Invasive Rugose Spiralling Whitefly *Aleurodicus rugioperculatus* in West Bengal

**Survey:** Two days (7-8<sup>th</sup> May, 2019) extensive survey was carried out in the invasive rugose spiralling whitefly *Aleurodicus rugioperculatus* Martin (Hemiptera: Aleydidae) infested areas in Purba Midnapur and Howrah districts of West Bengal along with Mr. Pradip Mazumdar, Advisor on Agriculture and allied sector to Chief Minister of West Bengal and officials from department of agriculture. The infestation of RSW was noticed on coconut (*Cocos nucifera*), banana (*Musa* spp.), guava (*Psidium guajava*), citrus (*Citrus* spp.), water apple (*Syzygium samarangense*), jamun (*Syzygium cumini*), ficus (*Ficus bengalensis*), custard apple (*Annona* spp.), jack fruit (*Artocarpus heterophyllus*), areca nut (*Areca catechu*), betel vine (*Piper betle*), spanish cherry (*Mimusops elengi*), akashmoni (*Acacia auriculiformis*) and areca palm (*Dypsis lutescens*) (Fig.1). This is the first report of this pest from West Bengal. Pest was probably introduced to Purba Midnapur and Howrah district through transport of plant materials from infested areas either from Orissa or South India. Pest could be introduced before three to four months before as its severity reached alarming situation especially on coconut, banana and betel vine and the infestation was up to 60-100%. Due to infestation of this, withering and drying of leaves in coconut and banana, consumer preference and marketing of betel vine was reduced drastically because sooty mold on upper surface of leaves. About 200 ha have been severely suffered due to this whitefly in West Bengal and prevailing hot and humid weather conditions, availability of wide range of suitable plants and absence of natural enemies might have favoured pest multiplication and spread.



**Fig.1: *Aleurodicus rugioperculatus* on different host plants in West Bengal**

Survey also revealed the absence of proven potential nymphal parasitoid, *Encarsia guadeloupe* (Hymenoptera: Aphelinidae) which indicates the pest introduced without its natural enemies complex. However, chrysopid, *Dichochrysa astour* (Neuroptera: Chrysopidae) only natural enemies was noticed during survey.

### **Awareness programme**

To create awareness, sensitization cum awareness programme was organized by ICAR-NBAIR in collaboration with department of Agriculture, Government of West Bengal. About 80 department officials and progressive farmers participated in the programme. The technical lecture on “Biosuppression of the invasive rugose spiralling whitefly in coconut and banana” was delivered by Dr. K. Selvaraj and he highlighted above invasion of pest, identification, host plant ranges, distribution and natural enemy’s complex. Beside this, special emphasis on biological control by *E. guadeloupe* and its augmentation and conservation strategies for effective management of pest. Other suitable management strategies like foliar application of neem oil @ 1% and entomopathogenic fungus, *Isaria fumosorosea* Wize (Deuteromycotina: Hyphomycetes) (formerly *Paecilomyces fumosoroseus*) at  $1 \times 10^8$  spores/ml. Farmers also highlighted successful management of pest in South India in different location by various stakeholders through various programme. Extension folder on biological control of invasive RSW was distributed among farmers and department officials. The awareness programme was widely covered in Bengali daily newspaper and TV channel for wider publicity about the incidence of the pest.



### **Distribution of nucleus culture of *Encarsia guadeloupe* and *Isaria fumosorosea***

Nucleus culture of potential parasitoid, *E. guadeloupe* and rice grain based formulation of *I. fumosorosea* were distributed among farmers for the augmentation in severely infested places. Beside, farmers and department officials were demonstrated the identification of *E. guadeloupe* adult population and parasitized nymphs at field level and release technique and conservation strategies including impact of pesticides on this natural enemy. Also briefed about, foliar application method for *I. fumosorosea*, its mode action and virulence of this pathogen against the RSW. The survey and awareness programme is widely published in Bengali daily newspaper and media.



### **Further details:**

The Director, ICAR-NBAIR, Bengaluru, E-mail: [directornbai@gmail.com](mailto:directornbai@gmail.com)