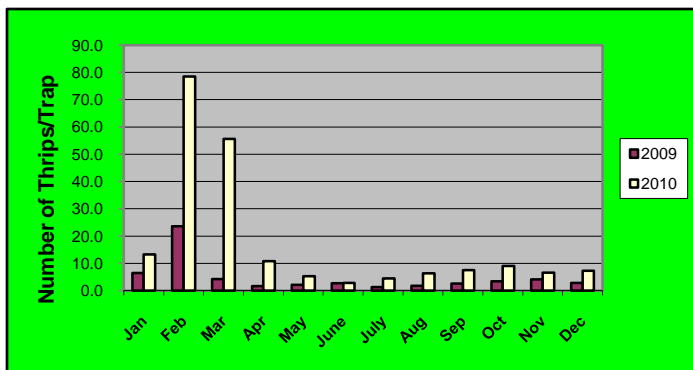
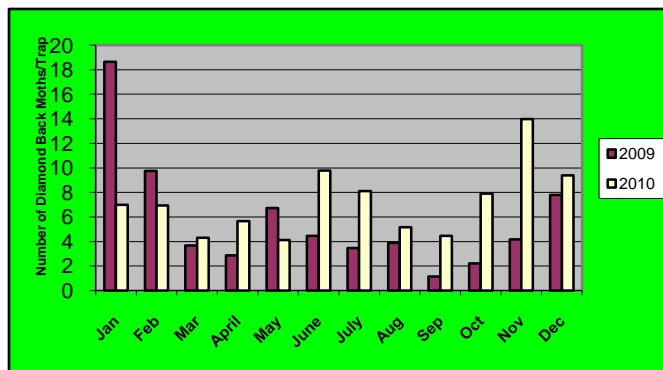


Thrips infestation on Orchids



Comments: The overall average thrips populations is more or less the same as compared with the last two month. The population showed a moderate increase as compared with the same month last year as one farm recorded higher thrips count in the last 10- weeks. The farm has been informed to take adequate control measures

Diamond Back Moth infestation on Vegetables



Comments: The overall average DBM population had not increased considerably as compared with the last 10 -months. The population is slightly on the higher side as compared with the same month last year as a few farms recorded higher moths count. The farms have been informed to take up adequate control measures

SERIOUS INFESTATION OF WHITEFLY- *BEMISIA TABACI* (GENNADIUS) ON SUNFLOWER-*HELIANTHUS ANNUUS*

Bemisia tabaci, also known as Sweet Potato Whitefly (SPW), or silver leaf whitefly, is a worldwide insect pest and virus vector in Family Aleyrodidae, Homoptera. Originally known as a insect pest of sub-tropical crops, the species is now widely distributed as a serious pest of cultivated crops in tropical and subtropical areas including Africa, Asia, Central America, South America, and the West Indies. It is also a quarantine pest in countries in Europe.

SPW is recognized as an important pest on many crops. It attacks more than 500 species of plants from 63 plant families. In our region, the whitefly may infest broccoli, cauliflower, Chinese cabbage, cucumber, *Dendrobium* (flowers), eggplant, chilli, guava, hibiscus, lettuce, plumeria, rose, sweet potato, tomato, and watermelon. Recently, sun flower (*Helianthus annuus*) was found infested by SPW in some nurseries in Singapore.

Direct damage is caused by the piercing and sucking sap from the foliage of plants, which leads to weakening and early wilting of the plant and reduces the plant growth rate and yield. It may also cause leaf chlorosis, leaf withering, premature dropping of leaves (Fig. 1) and plant death. Indirect damage results by the accumulation of honeydew produced by SPW. This honeydew serves as a substrate for the growth of black sooty mold on leaves, which reduces photosynthesis. In addition, SPW is considered as the most common and important insect vector of plant viruses worldwide.

The life cycle of SPW may range from 15-70 days dependent upon temperature and plant host. The optimal temperature is 27 deg C for development. In Singapore, the pest completes its development in 17 – 25 days. Overlapping whitefly generations occur throughout the year. Females of SPW lay 80-300 eggs into the inner tissue of the leaf depending on host and temperature.

The eggs are generally laid on the underside surface of the younger, upper leaves of the plant . The first stage of nymphs, the crawlers, move a short distance and settle to feed. Adults usually emerge from their pupal cases (Fig. 2) in the morning hours and may copulate a few hours later. Oviposition occurs from 1 to 8 days after mating. However, reproduction can occur with or without mating.

Barriers such as row covers, control of weeds adjacent to cultivated fields, the use of trap crops, and implementation of intercropping can be an alternative method for the reduction of pests in certain situations. Chemical control is advisable to suppress the population of SPW. Both petroleum based and plant derived oils have been found efficacious against all stages during the initial infestation. However, if SPW has built up its population on a crop, like sun flower, imidacloprid 200 SC at 0.5 ml/l, or abamectin 1.8 EC at 2 ml/l should be used.



Fig. 1. Leaf chlorosis and premature leaf dropping caused by whiteflies



Fig. 2. Puparia and adult whiteflies

Pest Interceptions from Importing Countries (Dec 2010)

AVA was notified of two pest interceptions from exported orchid cut flowers consignments for December 2010.

Commodity: Orchid flowers
Pest Intercepted: Live Comb Spider
Intercepting Country: Australia

Commodity: Orchid flowers
Pest Intercepted: Live immature larval thrips
Intercepting Country: Australia

Exporters are advised to implement pest control management on farm and apply appropriate insecticide and miticide applications (correct dosage of insecticide will help in reducing the insect resistance) to control thrips and spiders infestations.

E- books for sale

The E-Books viz., “The Singapore Plant Health Guide” and the Chinese version of the “ Guide to Vegetable Growing” are still available for sale at \$ 5 each. Purchases can be made from the Plant Health Laboratory (Animal & Plant Health Centre , Agri-Food and Veterinary Authority, 6, Perahu Road, Singapore 718827). You may wish to call or fax or email us as per below.

CONTACT US

Please report any unusual occurrence of pests and diseases (new or severe occurrence) to Plant Health Laboratory, AVA. It would help to protect our plant industry and the garden city from new invasive pests or diseases. Please provide the location, plant hosts attacked and suspected pests or diseases to our officers to follow-up and confirm the situation if required You can report your observations through: Email: AVA_Planthealth@ava.gov.sg or Telephone: [63165168](tel:63165168) or [188](tel:188) or Fax: [63161090](tel:63161090) or Visit us at:

<http://www.ava.gov.sg/AgricultureFisheriesSector/PlantHealthServices/PlantHealthLabServices/index.htm>