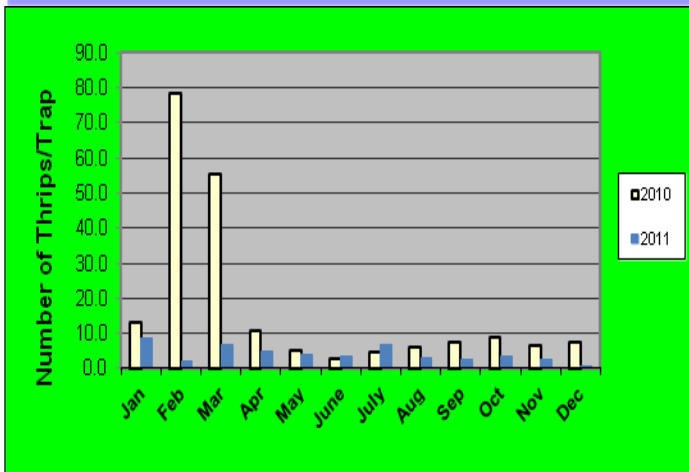


Plant Health Brief

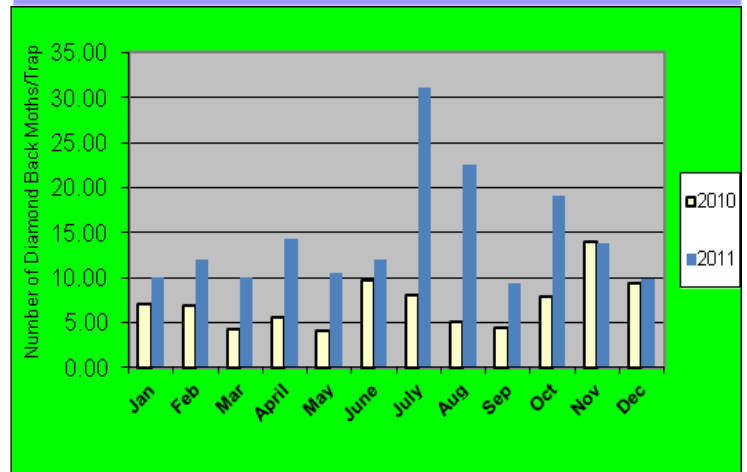
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Thrips infestation on Orchids



Comments: The overall average thrips population was found to be the lowest for the year which is less than 1 thrips/trap. The population also showed a marked decline as compared with the last year. The heavy rain fall could be the limiting factor in the reduction of the thrips population in December. In the year 2010, the thrips population was 17.2 /trap while in the year 2011 it was only 4.2/trap which is well below the outbreak threshold.

Diamond Back Moth infestation on Vegetables



Comments: The overall average of DBM population in Dec-2011 has dropped to <10 moths per trap. Compared with the same month last year, the population remains almost the same this year too. There was a surge in the population of DBM in 2- farms in weeks 2-4. The farms were notified to take adequate control measures. In the year 2010, the DBM population was 7.2 /trap while in the year 2011, it was 14.6/trap which is still well below the outbreak threshold .

PLANT REQUIREMENTS, DEFICIENCIES AND TOXICITIES- MAGNESIUM

Magnesium is a structural component of the chlorophyll molecule and is necessary for the functioning of plant enzymes to produce carbohydrates, sugars and fats. It also regulates the uptake of the other essential elements. Since Magnesium is needed for chlorophyll, deficient leaves are chlorotic.



Symptoms are most severe on the older leaves and appear as broad inter-veinal and or marginal chlorosis.

plants and a reduction in leaf size would also be observed. In palms, typical symptom is a broad light yellow band along the margin of the older leaves with the centre of the frond remaining distinctly green.

OCCURENCE OF PAPAYA RINGSPOT VIRUS (PRSV) IN SINGAPORE

Papaya, *Carica papaya* is a tropical fruit crop that is normally consumed fresh and is valued as a health food because it's rich in vitamins A and C. *Papaya ringspot virus* (PRSV), a potyvirus, causes the most serious virus disease of papaya has been reported from Papaya in one of the nurseries in Singapore. The disease is distributed in most tropical and subtropical areas of the world where papayas are grown. It is particularly severe in areas of Thailand, Taiwan, the Philippines, and the southern region of The People's Republic of China. Additionally, the disease is widespread in the Caribbean islands and South America, and is found in the papaya growing areas of the U.S., including Florida, Hawaii, and Texas. It has a narrow host range and it is only known

to cause diseases on cucurbits and papaya plants naturally. PRSV is a ribonucleic acid (RNA) virus. It is transmitted between plants by mechanical activities like pruning and by vector aphids which can spread the virus very quickly through the feeding from infected plants to healthy plants. The most obvious symptom of PRSV infection is the formation of sunken ring spots on the fruit. These spots are very diagnostic of the disease. Other symptoms include mosaic or mottling of the leaves, and oily streaks on the stems and petioles. In some cases, the lobes of the leaves may be severely reduced in size and narrowed, which gives them a "shoestring" like appearance. Overall it stunts the plants and reduces fruit production. Although it is safe to eat fruits from an infected plant, such fruits are of no commercial value due to its lesser quality. There is no cure for virus infected papayas, other than strict insect vector control and destroying infected plants to avoid further spread. Transgenic papaya lines resistant to PRSV are being explored overseas. In addition, cross protection using a mild strain of the PRSV has been applied to the control of this disease in different regions of the world with varying degrees of success. Inoculating seedlings with a mild strain of PRSV is to induce the plant defence mechanism to respond to a severe strain if infected to reduce the damage by the severe strain.

PEST INTERCEPTIONS (DECEMBER 2011)

There were three pest interceptions from United Kingdom for the month of December 2011.

Commodity = Aquatic Plants (*Echinodorus* sp)
Intercepting Country = United Kingdom
Pest Intercepted = *Bemisia tabaci*

Commodity = Aquatic Plants (*Alternanthera sessilis*, *Echinodorus* sp and *Rotala* sp)
Intercepting Country = United Kingdom
Pest intercepted = *Bemisia tabaci*

Commodity = Aquatic Plants (*Cryptocoryne wendtii*)
Intercepting Country = United Kingdom
Pest intercepted = *Bemisia tabaci*

PESTICIDE INFORMATION

COMMON NAME	Cartap Hydrochloride
TRADE NAME	Padan
TYPE	Systemic Insecticide with stomach and contact action
CHEMICAL NATURE	Nereistoxin analogue- Insecticide
FORMULATION	Wettable Powder
PROPERTIES	Cartap HCL is an analogue or pro-pesticide of the natural toxin nereistoxin. It is a acetyl choline blocker (choline esterase inhibitor) causing paralysis of central nervous system of the insects. It is effective on all stages of insects belonging to Lepidoptera (moths) and Coleoptera (beetles).
USES	Effective against insects on rice, soybean, sunflowers, citrus and other crops such a sugarcane, ginger and cotton.
TOXICOLGY	Mammals Oral LD50: 345mg/kg Bees : Moderately toxic Fish LC50: 1.6 mg/lit
DOSAGE	1 to 2 gms of the product in one litre.
WITH-HOLDING PERIOD	1 -2 weeks



Fig. 1 Mottling of leaf caused by PRSV



Fig.2 Ring spots on fruit caused by PRSV

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 or 188 or Fax: 63161090 or Visit us at: <http://www.ava.gov.sg/AgricultureFisheriesSector/PlantHealthServices/PlantHealthLabServices/index.htm>