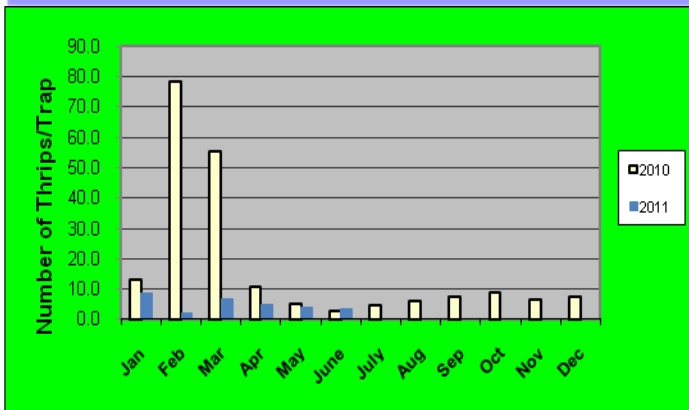


Plant Health Brief

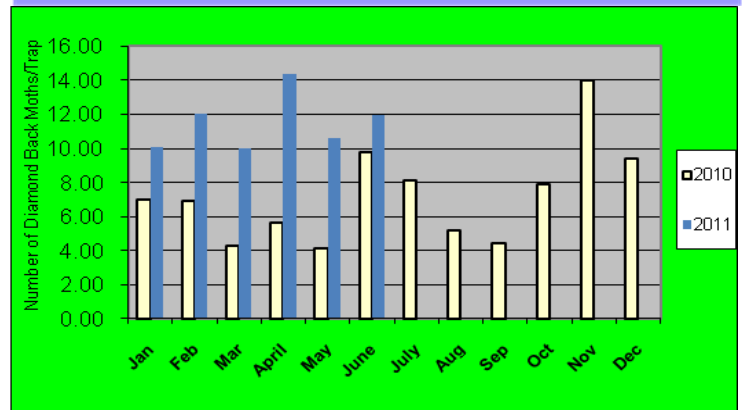
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Thrips infestation on Orchids



Comments: The overall average thrips populations did not show much difference as compared with the last four months. The population showed a slight decline as compared with last month but there is a slight increase as compared with same month last year. Two farms recorded higher thrips count in the last week of June. The farm has been informed to take adequate control measures.

Diamond Back Moth infestation on Vegetables



Comments: The overall average DBM population has come down slightly but the average number of moths /trap is always above 10 moths/trap in the last 6- months. Compared with the same month last year the population has just increased from 10 moths/trap to around 12 moths/trap. One farm has recorded higher moths count in the last 4-weeks. The farm had been informed to take up adequate control measures

PLANT REQUIREMENTS, DEFICIENCIES AND TOXICITIES- NITROGEN

Nitrogen is one of the major nutrients commonly applied to ornamental plants. It is often the main component (N) in most commercial fertilisers. Plants require nitrogen in large amounts as it promotes rapid growth, increases leaf size and quality, hastens plant maturity, and promotes fruit and seed development. Most plants absorb nitrogen in the form of ammonium or nitrate. These forms readily dissolve in water and are easily leached away from soil. It is an element that is mobile in plants so deficiency symptoms appear first, and are severe, on the older leaves. Plants become spindly with general chlorosis of entire plant to a light green and then a yellowing that progress from the older leaves toward the younger leaves. The plants also become stunted and secondary shoot development is generally poor if the initial symptoms are not corrected. Plant response to fertilization with nitrogen is generally very prompt, especially from nitrates or ammonium sources of nitrogen and during active stage of plant growth.



Nitrogen deficiency- Chlorotic leaves

However, excessive levels of nitrogen may also result in stunted growth, delay in flowering and undesirable dark green foliage in the coloured ornamental plants. High nitrate levels may cause leaf edge browning under dry soil conditions. Some plants with high nitrogen content are more susceptible to fungal and bacterial attacks under favourable disease conditions



Nitrogen sufficient- dark green leaves

DETECTION OF PHAEOTRICHOCOONIS LEAF SPOTS ON ARENGA HOOKERIANA IN A LOCAL ORNAMENTAL NURSERY

Phaeotrichoconis crotalariae (Salam & Rao) Subram. was recovered from necrotic spots and blotches of the *Arenga hookeriana* leaf samples. This fungus is similar and closely related to fungus, *Helminthosporium* (*Exserohilum*) *rostratum* (Drechs.) Leonard & Suggs. Originally *P. crotalariae* was reported from *Crotalaria verrucosa*. This is a pan-tropical fungus with a very wide host range including *Acacia crassicarpa*, *Acacia auriculiformis*, coconut, *Chrysalidocarpus lutescens* and other palms, cardamom, *Cyperus iria* and other ornamentals such as *Alternanthera sessilis* and vegetable crops. It has also been reported on Noogoora burr (*Xanthium pungens*), which is an important weed in northern Australia. Later it was reported from *Marsilea quadrifolia* from India and *Eichhornia crassipes* from Sri Lanka. This fungus is very widely distributed in the tropics with many records coming from India, and others from the Northern Territory of Australia and Florida. Lesions are oblong or elliptical in shape, reddish in colour with a darkly pigmented margin and paler necrotic tissue toward the centre (Fig. 1). Clusters of large, darkly pigmented conidia are visible through a hand lens. Conidia are very large, up to 40 x 10 µm with long beak-like appendages (Fig. 2). Control of the disease would be through the trimming and removal of diseased plant material, good sanitation practices, good nutritional practices and the reduction of the moisture and humidity levels. Alternately, applications of fungicides like chlorothalonil, iprodione and mancozeb may be needed if re-infection occurs.



Fig. 1: Necrotic blotches of on the *Arenga hookeriana* leaf.

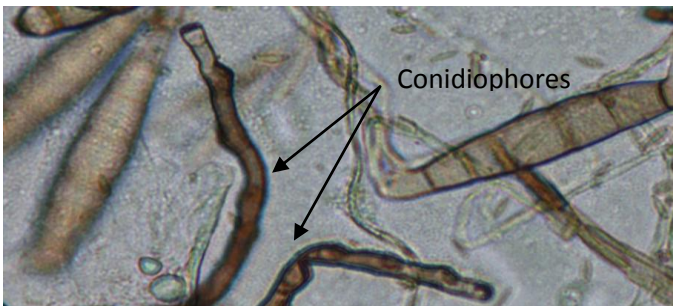


Fig. 2: The conidiophores of *P. crotalariae*

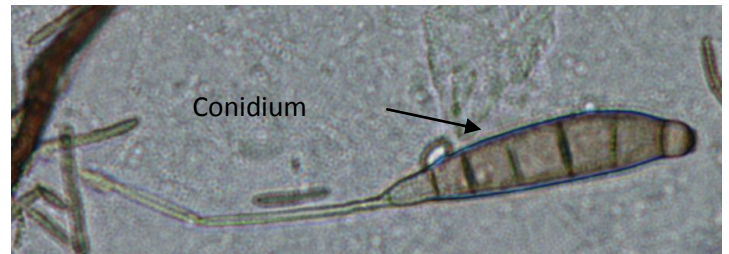


Fig. 3: The conidiophores and conidium of *P. crotalariae*.

PEST INTERCEPTIONS (JUNE 2011)

There were no pest interceptions from importing countries for the month of June 2011.

PESTICIDE INFORMATION

COMMON NAME	<i>Bacillus thuringiensis</i> subsp <i>kurstaki</i>
TRADE NAME	Dipel, Thuricide
TYPE	Insecticide- Stomach poison- Contains the crystal toxin of the bacteria
CHEMICAL NATURE	Bacterial insecticide
FORMULATION	Wettable Powder
PROPERTIES	<i>Bacillus thuringiensis</i> is an aerobic spore forming gram + rod shaped bacteria. At sporulation it produces a crystal toxin viz., delta endotoxin which is toxic only to lepidopterans such as moths. The endotoxin upon entry into the gut, the epithelial cells are damaged thus the insect stop feeding and eventually death. The endotoxin is damaged by UV light. Not hazardous to other group of insects such as beetles and weevils, flies etc.,
USES	Insecticide used as a stomach poison. No contact action and effective only upon ingestion. Used for the control of many lepidopterous larvae in agriculture and forestry.
TOXICOLGY	Oral: No infectivity or toxicity in rats at 4.7×10^{11} spores/kg. LD ₅₀ >5050 mg/kg Non toxic to bees Birds LD ₅₀ >1714 mg/kg Fish LC ₅₀ >400mg/lit
DOSAGE	1 to 2 gms of the product in one litre.
WITH-HOLDING PERIOD	Safe to human being as it is bacterial crystal toxin

CONTACT US

Please report any unusual occurrence of pests and diseases (new or severe occurrence) to Plant Health Laboratories, 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>