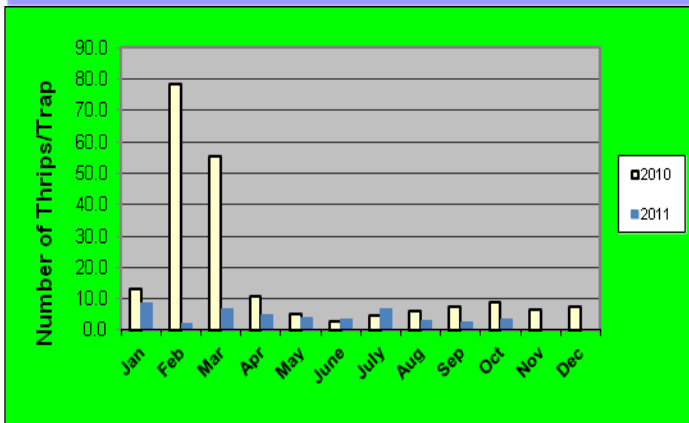


# Plant Health Brief

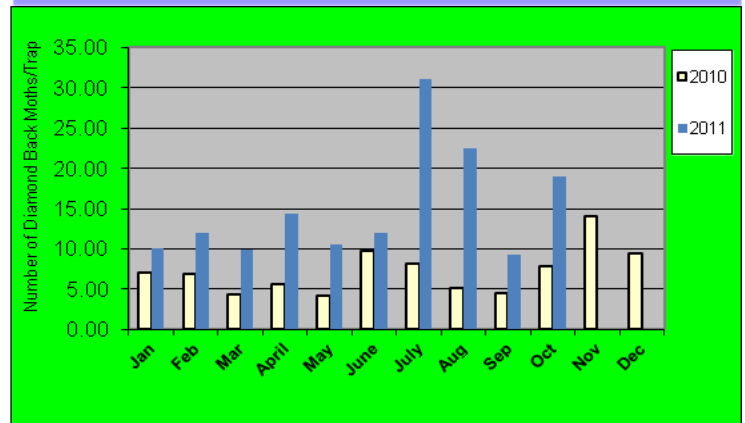
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## Thrips infestation on Orchids



**Comments:** The overall average thrips populations did not show much difference as compared with the last seven months. The population showed a slight increase as compared with last month, but a decrease from the same month last year. The farm with higher thrips count in September had a lower count in October, after taking adequate control measures.

## Diamond Back Moth infestation on Vegetables



**Comments:** The overall average DBM population has increased but remained at around <20 moths per trap. Compared with the same month last year, the population this year has more than doubled. The 2<sup>nd</sup> week of October showed a marked increase across all 8 farms

## PLANT REQUIREMENTS, DEFICIENCIES AND TOXICITIES- CALCIUM

Calcium is a constituent of plant cell walls and is involved in production of new growing points and root tips. It is immobile within plants and remains in the older tissue throughout the growing season.. Since it is immobile, deficiency symptoms would show up in new foliage, buds and roots. Younger leaves are affected first and are usually deformed. In extreme cases, the growing tips die. The leaves of some plants curl downwards and exhibit browning of leaf edges and leaf tips and this symptom is commonly referred to as tip burn. Roots on calcium-deficient plants are short and stubby. In orchids, paleness is shown along the leaf edges with some twisting and downward curling. Black necrotic spots may also occur. Plants display stunted growth in a calcium deficient environment



## DETECTION OF *Puccinia arachidis* IN *ARACHIS HYPOGAEA* IN SINGAPORE

*Puccinia arachidis*, also known as *Uredo arachidis* or *Uromyces arachidis*, was detected on *Arachis hypogaea* sample (Fig. 1), and was identified by its characteristic rust spores (urediniospores; Fig. 2). It is known to cause peanut or groundnut rust in *Arachis* spp., and may be found throughout the world. It affects only *Arachis* spp. .

Peanut rust is easily identified by the appearance of numerous tiny, reddish orange pustules on the undersides of the leaflets (Fig 1). The ruptured pustules contain masses of powdery, orange spores. Although the badly diseased leaflets quickly turn light brown and die, they often remain attached to the plant. When left unchecked, diseased peanut plants take on a scorched appearance, quickly die, and shed most mature pods.

Temperatures of around 20-28 °C, free water on the leaf surface and high relative humidity, as found in rainy periods, favour the infection and subsequent disease development of *Puccinia arachidis*. In addition, wind, rain-splash and insects can facilitate the spread of the disease causing urediniospores.



Fig. 1 *Puccinia arachidis* rust pustules on *Arachis hypogaea*

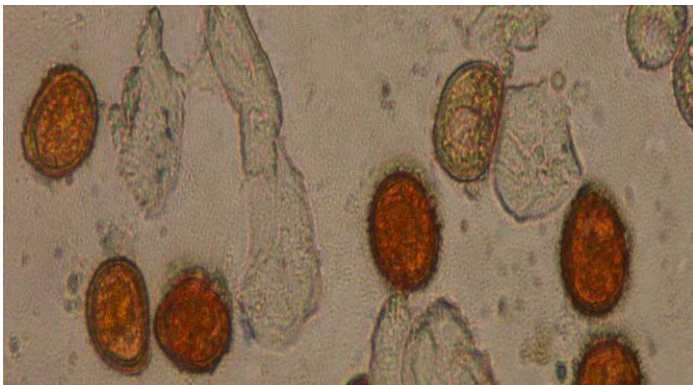


Fig. 2 The urediniospores of *Puccinia arachidis*

The control of the disease would be through the pruning and removal of infected leaves, the use of good sanitation practices, and the reduction of the moisture and humidity levels. Alternately, applications of fungicides like thiram or chlorothalonil may be needed if re-infection occurs.

## PEST INTERCEPTIONS (OCTOBER 2011)

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

Commodity	<i>Hygrophila angustifolia</i> <i>Hemigraphis colorata</i> <i>Nomaphila</i> sp. <i>Lysimachia nummularium</i> <i>Hygrophila polysperma</i> <i>Echinodorus</i> sp. <i>Bacopa monnieri</i>
Pest Detected	White flies ( <i>Bemisia tabaci</i> )
Importing Country	United Kingdom

## PESTICIDE INFORMATION

COMMON NAME	Azoxystrobin
TRADE NAME	Amistar 250SC
TYPE	Systemic Fungicide
CHEMICAL NATURE	Fungicide
FORMULATION	Suspension concentrate
PROPERTIES	Azoxystrobin was first marketed in 1998 and is a systemic, broad-spectrum fungicide with activity against the four major groups of plant pathogenic fungi including Ascomycetes (eg powdery mildews), Basidiomycetes (eg rusts), Deuteromycetes (eg. leaf spots ) and Oomycetes (eg downy mildew). It inhibits spore germination and mycelial growth. It has worldwide uses on cereals, vines, rice, citrus, potatoes and tomatoes.
USES	Effective against diseases caused by <i>Phytophthora infestans</i> , <i>Colletotrichum capsici</i> , <i>Pseudoperonospora cubensis</i> , <i>Colletotrichum gloeosporioides</i> , <i>Rhizoctonia solani</i> and <i>Albugo ipomoeae-panduratae</i>
TOXICOLGY	Highly toxic to fish and invertebrates. Practically non-toxic to birds and bees. Bees LC50: >200 ug/bee Invertebrates LC50: 0.259 ppm Fish (Trout) LC50: 0.47 ppm Birds ( Bobwhite Quail) LC50: > 5,200 ppm
DOSAGE	1 to 2 gms of the product in one litre.
WITH-HOLDING PERIOD	1 -2 weeks

## 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>