

## FREQUENTLY ASKED QUESTIONS

1	<p>What are the differences between insect pests and plant diseases?</p> <p>Insect pests are insects that affect crop growth stages by damaging (chewing, biting, sucking or boring) various plant parts such as leaves, flowers, fruits, stems and roots. This can affect the quantity and quality of harvest or even can cause the crops to die prematurely before harvest.</p> <p>Plant diseases are caused by microscopic organisms which include fungi, bacteria, virus and nematodes which attacks and infects various plant parts such as leaves, stems, roots, flowers, fruits affecting harvest quality, quantity, stunted growth and may also kill the crops before harvest.</p>
2	<p>What are the common insect pests on crops and their symptoms? Please refer below</p>
3	<p>What are the common signs and symptoms of plant diseases on crops? Please refer below</p>
4	<p>What is Integrated Pest Management and what are the examples?</p> <p>Integrated Pest Management (IPM) is an effective, economical and environmentally-friendly approach to control and manage pests, and is comprised of the combination of these four major components:</p> <ul style="list-style-type: none"> <li>• Physical control</li> <li>• Cultural control</li> <li>• Biological control</li> <li>• Chemical control</li> </ul> <p>These different control methods are recommended by the Agriculture and Agrifood Department to be practiced by farmers in order to optimize the use of natural resources available to them and in an effort to reduce the reliance and usage of chemical pesticides and emphasizing on the proper and safe use of chemical pesticides to improve the farmers' well-being and improve food safety.</p>
5	<p>What are the research activities that have been conducted with relevance to finding alternative control methods which are not dependent on pesticides?</p> <ol style="list-style-type: none"> <li>1. Baiting of apple snails in paddy The research aims to find alternative crops as snail baits other than paddy and to compare bait preferences amongst these alternative crops.</li> </ol>



Fig. 1a) Research conducted in the field



Fig. 1b) Research conducted in the laboratory



Fig. 1c) Papaya leaves are highly preferable as snail baits

## 2. Rearing of natural enemies (predators and parasitoids)

These researches aim to report on the incidence of natural enemies on paddy with the potential to be mass-reared in the future for the use of local farmers as biological control agents.

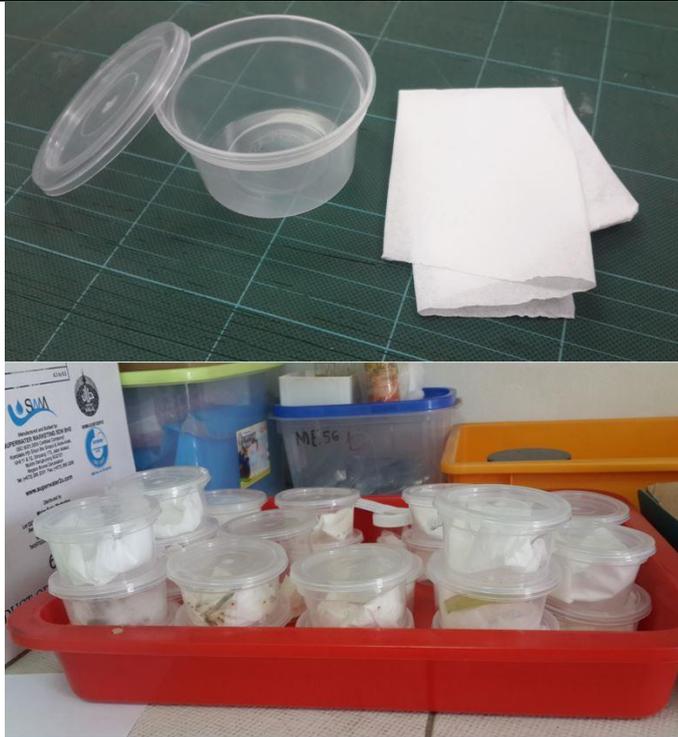


Fig. 2a) Equipment used for the rearing station



Fig. 2b) Adult parasitic wasps emerged from the lepidopteran egg mass



Fig. 2c) Adult dryinid wasp emerged from the parasitic sac from the planthopper nymph

3. Blast screening for paddy varietal selection for blast disease resistance.



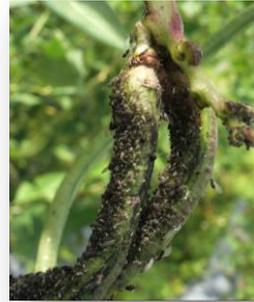


Question 2  
COMMON INSECT PESTS AND SYMPTOMS

INSECT PESTS	SYMPTOMS
<p data-bbox="405 1514 544 1547">WHITEFLY</p>  <p data-bbox="422 1980 526 2013">APHIDS</p>	<p data-bbox="783 1514 1401 1588">Infestation causes yellowing, curling, wrinkling and wilting of plants.</p> 



MITES



THRIPS



Infestation causes discoloured flecking, stippling and premature drop.



MEALYBUGS

Infestation causes drying and wilting of plant, and secondary infection of black sooty mould.



SCALE INSECTS

Infestation causes unhealthy appearance of plants and yellow spotting.



ARMYWORMS

Leaves and fruits are completely consumed, leaving only veins and stems.



LEAF MINER

Infestation causes blistered, translucent patterns on leaf surfaces.



FRUIT FLY



Infestation causes black markings and rotting of fruits.



LEAF ROLLER

Leaves are eaten from the margin and rolled



into pupal cage.



### BROWN PLANTHOPPER



Infestation causes stunted growth or severe hopperburn.



### GREEN LEAFHOPPER



Infestation causes patchy yellowing of paddy plants.



RICE STEM BORER



Infestation causes drying of paddy shoots or whitening of paddy panicles (empty grains).



LEAF FOLDER

Infestation causes paddy leaves to be folded, dried and appeared whitish.



MOLE CRICKET



Infestation causes young paddy roots to be damaged and collapsed.



Question 3  
COMMON PLANT DISEASES AND SYMPTOMS

SHEATH BLIGHT



BLAST PANICLE NECK ROT/ LEAF BLAST



CORDANA LEAF SPOT



ANTHRACNOSE



POWDERY MILDEW



CHOANEPHORA BLIGHT



FUSARIUM WILT



MOSAIC VIRUS



INTEGRATED PEST MANAGEMENT

PHYSICAL CONTROL

Solar-powered Light Trap



Yellow Sticky Trap



Netting



## CULTURAL CONTROL

**Mulching**



**Intercropping**



## BIOLOGICAL CONTROL





## CHEMICAL CONTROL

**NITRILE GLOVES (NG 400)**  
*Chemical Resistant & Durable*

**APRON (AP 300)**  
*Made of 100% Polyethylene  
Fibres, Chemical Resistant, Light  
Weight & Durable*

**BOOTS (BT 600)**  
*Quality Rubber Boots*

**DISPOSABLE MASK (DM 500)**  
*Light & Economical,  
Ideal Against Dust*

**FACE SHIELD (FS 200)**  
*Clear Polycarbonate  
Visors*