

# COCOA CARE CARD (INSECT PESTS)

## APHIDS (*Toxoptera aurantii*)



- Aphids mainly infest growing shoots that leads to leaf deformation and curling of leaves during summer.
- During peak population also colonize on flower buds resulting in bud dropping and reduced fruit setting.
- ✓ As it is a minor pest, natural enemies feed on aphids and exert natural check.
- ✓ If infestation is more - spraying of 0.5% neem oil emulsion + 5% soap solution two-times at 15 days interval is recommended.

## TEA MOSQUITO BUG (TMB) (*Helopeltis* spp.)



- Population builds up during September- October on young flushes.
- Subsequently, adult and immature stages prefer to feed on flower buds, cherelles and pods by sucking the cell sap.
- Post-feeding symptoms appear as circular, dark, discolored lesions.
- ✓ Regulate shade through systematic structural pruning. Remove alternate hosts like neem, cashew, guava etc.
- ✓ **Less infestation:** Spray Neem oil emulsion @5ml/L
- ✓ **Persistent infestation:** Repeat spray at 20 to 30 days interval.
- ✓ **Severe infestation:** Spray Lambda Cyhalothrin 5EC@0.5ml/L.

## MEALY BUG (*Planococcus lilacinus/ P. citri*)



- Incidence is severe during summer.
- Damage caused due to sucking of sap from flushes, foliage, terminal buds, flower stalks and pods.
- ✓ If *Paracoccus marginatus* noticed, release parasitoid *Acerophagus papayae* @100/hamlet.
- ✓ Reduce the number of ants in the field by destroying their nests.
- ✓ Spot application- 0.5% neem oil emulsion + 5% soap solution two times at 15 days interval.

## STEM BORER/ GIRDLER (*Z. coffeae/ Sthenias grisator*)



- Grubs tunnel the bark, and feed on internal content through zigzag galleries.
- Young trees: Infestation at jorquette, drying/ breaking of portion above.
- Older trees: Attack in main stem/trunk, yellowing, browning of leaves and death of trees.
- ✓ Mechanical killing of grubs with iron hook. Clean the webs, excreta etc, and plug holes with cotton wool soaked with chloroform, formalin or petrol, seal it with mud.
- ✓ Inject Chlorpyrifos (20EC) solution @4ml/L in bore holes and seal it with mud.
- ✓ Swab coal tar + kerosene @ 1:2 in basal portion of the trunk at 3 feet height after scraping the loose bark to prevent laying of eggs by adults.

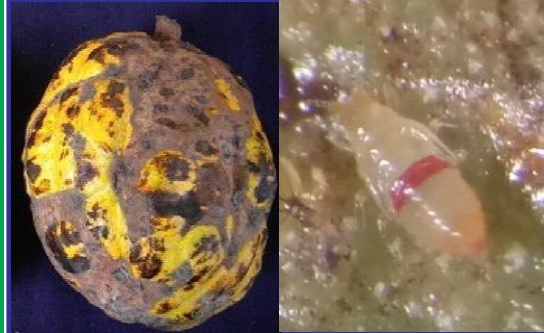
# COCOA CARE CARD (INSECT PESTS)

## COCOA FRUIT BORER (*Conogethes punctiferalis*)



- Minor pest became key pest with climate change effect.
- Caterpillars feed on husk of cocoa pods, bore and feed the internal contents, extruding granular faecal pellets.
- Found in most cushion bearing trees where the pods are too compact.
- ✓ Planting of castor as trap crop in borders.
- ✓ **Severe infestation:** Spray Chlorantraniliprole 18.5 SC @ 1ml/L water.

## RED BANDED THRIPS (*Selenothrips rubrocinctus*)



- Adults and nymphs appear in colonies on the surface of the pods.
- Damage can be identified by presence of rough surfaced discolored pods
- Thrips feed on the fluid exuding from the scraped tissues and appear as brown streaks and patches on pods.
- ✓ Apply Spiromesifen 22.9 % SC @ 0.5 ml/L water.

## RATS (*Rattus rattus*)



- Rats gnaw the pods near the stalk and damage both mature and immature pods.
- They eat harvested pods kept for sowing and processing. If fermentation heap is not properly sealed they eat wet beans and dry beans as well. Further they invite snakes.
- ✓ Keep 10 g Bromadiolone (0.005%) wax cakes on the branches of cocoa trees twice at an interval of 10-12 days and also in seed godowns and processing rooms.
- ✓ Rat traps with fried coconut pieces can be used.

## SQUIRRELS (*Funambulus tristriatus*/F. *palmarum*)



- Squirrels gnaw the pods in center, damage the mature, ripe pods and eat sweet mucilage/ beans.
- ✓ Wooden or wire mesh 'live' trap with ripe coconut kernel as the bait.
- ✓ Timely harvest of pods and maintain proper plant density.
- ✓ Trap during lean periods (October-November), when alternate foods, paddy, cashew apples, mangoes, jackfruits are not available.

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