

# COCOA HEALTH CARD (DISEASES)

## SEEDLING DIEBACK (*Phytophthora palmivora*)



**Symptoms:** Drying, dying of sprouts from tip, internal infection leads to yellowing & blighting.

**Management:** Removal & destruction of infected seedlings and improving drainage facilities.

Solarize potting mixture in sun or cover with black polythene sheet for 1 month during hot summer.

Bio-prime 25 g Cocoa-Probio or *Trichoderma harzianum* (Isolate CPTD-28) microbial culture which improves crops stand.

Drench Bordeaux mixture (1%) or Copper-Oxy-Chloride (0.2%) before monsoon, then at 15 days intervals.

## CHERELLE WILT (*Colletotrichum gleosporioides*)



### Physiological wilt

Natural thinning mechanism at 25, 50, 75 days of fruit set.

**Symptoms:** Yellowing, browning, blackening of young cherelles/ small developing pods.

**Management:** Manual removal of wilted cherelles helps developing pods to gain size.

### Pathological wilt

**Symptoms:** Appear as small water soaked lesion at stalk end, sunken spots with diffused yellow halo and mummification of cherelles.

**Management:** Spraying of Bordeaux mixture (1%) or Copper-Oxy-Chloride (0.2%) may be taken up.

## CHARCOAL POD ROT (*Lasiodiplodia theobromae*)



**Symptoms:** Infection starts as a dark brown spot on pod, later turns into black color and remains as mummified fruit on the tree.

Internal tissues become rotten and beans turns into black color.

This disease is severe during summer months and pods of all age groups are susceptible.

**Management:** Timely spraying of Bordeaux mixture@1% depending upon the severity.

## 1% BORDEAUX MIXTURE PREPARATION



### 1% Bordeaux Mixture Preparation

- Dissolve 1 kg Copper Sulphate crystals in 10 litres of water in a plastic container.
- Dissolve lime (Quick Lime- 750-850 g; Hydrated Lime- 375-450 g) in 10 litres of water in another plastic container.
- Pour both solutions simultaneously to 80 litres of water with constant stirring.
- Dip pH paper, if it turns blue, the mixture is neutral with 7.0 pH or dip a well-polished knife or sickle, if the blade shows reddish colour, add lime till the blade does not show staining.
- Add wetting agent 1 ml/ liter to the mixture. Use mist nozzle.

# COCOA HEALTH CARD (DISEASES)

## BLACK POD ROT & STEM CANKER (*Phytophthora palmivora*)



**Black pod rot:** Occurs during south west monsoon as small circular water soaked lesion on pods, turns to dark brown lesion in 14 days. Under severe infection entire pod turns into black colour.

**Stem canker:** Appears as dark brown, round to oval shaped discolored area on the bark. Oozing of reddish brown liquid, yellowing, wilting of leaves, shoots & death of plant.

**Management:** Phytosanitation i.e., removal & destruction of black pods. Spray Bordeaux mixture (1%) at 45 days interval for black pod rot disease.

**For Stem canker:** remove infected tissues & apply Bordeaux paste or wound treatment with *Trichoderma* coir pith cake for healing.

Soil application of *Trichoderma* coir pith cake helps in reducing the inoculums.

## VASCULAR STREAK DIEBACK (VSD) (*Ceratobasidium theobromae*)



**Symptoms:** Yellowing of one or two leaves of 2<sup>nd</sup> or 3<sup>rd</sup> flush behind shoot tip. Dried leaves fall off, youngest and oldest leaves remain intact. Stem shows long longitudinal brown streak, due to infection of xylem vessels.

**Management:** Urooting & burning of severely infected seedlings. Pruning of infected branches, 30-40 cm below the end of visible brown streaking.

Swab cut ends with Bordeaux paste (1%). Spray Bordeaux mixture @1% or Copper-Oxy-Chloride @0.25% twice a year during May-June and October months.

## LASIODIPLODIA DIEBACK (*Lasiodiplodia theobromae*)



**Symptoms:** Yellowing of leaves, drying from tip of twig from tip downwards.

Cross section of affected branches shows dark brown colouration.

Severe infection leads to drying of all branches, whole canopy and death of the plant.

**Management:** Trimming, pruning and destruction of affected branches and dead trees.

## 10% BORDEAUX PASTE PREPARATION



- Dissolve 100 g Copper Sulphate and 100 g Quick Lime each in 500 ml of water separately.
- Mix thoroughly to get a paste.
- Swab Bordeaux paste in cut ends of pruned branches of cocoa and as wound dressing in diseased shoots.

Extension Folder No : 294

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