

STEM NECROSIS AND LEAF SPOT

This disease is caused by the fungus *Myrothecium roridum* during monsoon period from June to September. Symptoms will be seen on both stem and leaves of coffee seedlings.

Symptoms

- ❖ Infected stem shows brown to black lesions. Two to three lesions may be noticed on the same stem. On severity, infected region show cushion shaped black fruiting bodies surrounded by white fungal growth. Such infected seedlings, gradually wilt and die.
- ❖ At the initial stage, infected leaves show water-soaked circular spots, later these spots gradually enlarge in size changing its colour from brown to black forming concentric rings on the upper surface of leaves. Black fruiting bodies with white margins develop along the concentric rings corresponding to the lower surface of the infected leaves.
- ❖ Sometimes, two to three such lesions coalesce to form an irregular necrotic patch.

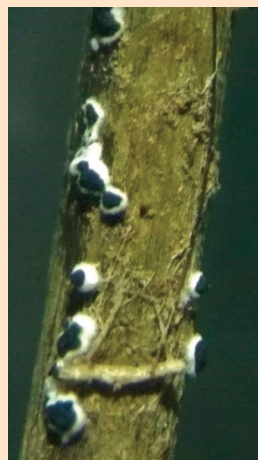
Integrated disease management

- ❖ The components of nursery mixture must be exposed to sun light for two to three months and sieved before using it in nursery beds or filling the nursery baskets or polybags.
- ❖ Collect and destroy affected coffee seedlings from the germination beds and poly bags at regular interval
- ❖ During continuous rains, seedlings may be protected by raising rain out shelters to avoid prolonged wetness of the seedlings.
- ❖ Spray propiconazole 25 EC @ 1 ml/liter followed by mancozeb 75 WP @ 2g/liter of water along with any wetting agent/sticker alternatively at 25 to 30 days interval.

Caution:

1. Using propiconazole 25 EC continuously in nursery causes phytotoxicity leading to stunted growth of seedlings. Therefore, alternate use of propiconazole and mancozeb is advised for management of stem necrosis and leaf spot disease.

2. Copper based fungicides are not advisable to use in the nursery, as it causes phytotoxic symptoms such as constriction of the stem at the collar region, yellowing of leaves and stunted growth of seedlings leading to girdling at the stem region.



Enlarged view of fungal growth on infected stem



Stem necrosis



Leaf spot with concentric rings



Fruiting bodies on upper surface



Fruiting bodies on lower surface



Rain out shelter

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INTEGRATED MANAGEMENT OF NURSERY DISEASES



Collar Rot

This disease is caused by the fungus *Rhizoctonia solani*. It is a soil inhabitant fungus and survives in soil as well as plant debris for more than six to eight months in the soil. The fungus infects 1 to 4 months old young seedlings.

Symptoms

The disease are observed in two phases

1. *Pre-emergence damping-off*: Seeds will rot and disintegrate.
2. *Post-emergence damping-off*: Seedlings show rotting of tissues on the stem near the ground level. In the advanced stage, the seedlings wilts, collapse and die.

Integrated disease management

- ❖ The components of nursery mixture(sieved jungle soil, compost and sand in recommended proportion in the ratio of 6:2:1) must be exposed to sun light for two to three months and sieved before using it in nursery beds or filling the nursery baskets or polybags.
- ❖ Prepare raised seed beds to avoid water stagnation.
- ❖ While sowing on the primary seed beds maintain proper spacing to avoid overcrowding
- ❖ Avoid excess watering in nursery beds.
- ❖ Use *Trichoderma* enriched farmyard manure for primary nursery beds.
- ❖ Use fungicide treated seeds
- ❖ Collect and destroy the infected seedlings, drench the seed bed with carbendazim 50 WP @ 1g /liter or mancozeb 75 WP @ 2.0 g/liter at 15to 20 days interval alternatively.

BROWN EYE SPOT

This disease is caused by the fungus *Cercospora coffeicola*. Coffee seedlings in nursery and young plants in new clearings will be affected by brown eye



Rotting of seeds



Rotting at collar region of button stage seedlings



Collar rot infection at Butterfly stage

spot disease due to lack of proper overhead shade. The infected leaves fall-off and such seedlings become unfit for field planting. Hot humid weather conditions prevailing during April to June and September to November periods are conducive for the occurrence and spread of the disease.

Symptoms

- ❖ The disease appears as small necrotic spots later become circular with dark brown margin and greyish white centre; many such spots develop and coalesce.
- ❖ Lesions are surrounded by a bright yellowish "halo" which is prominently visible on the upper surface of leaf.
- ❖ In advanced stage, yellowing and epinasty of leaves followed by pre-mature defoliation occur.
- ❖ Affected seedlings show stunted growth and become unsuitable for planting in the field.



View of brown eye spots infected coffee seedlings in the nursery



Brown eye spot infected leaf



Closer view of the spot

Integrated disease management

- ❖ Grow coffee seedlings under filtered shade using 75% poly shade net to avoid direct exposure to sun light.
- ❖ In new clearings, protect the seedlings by hutting and maintain good overhead shade during dry periods.
- ❖ If the disease is noticed, spray tebuconazole 38.39% SC @ 1.0 ml/liter or trifloxystrobin 25% + tebuconazole 50% WG @ 2.0 g/liter at 30 days interval.

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