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केंद्रीय कॉफी अनुसंधान संस्थान

CENTRAL COFFEE RESEARCH INSTITUTE

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CULTURAL PRACTICES - APRIL 2026

Summary

Established Blocks

- ✓ Collar pruning should be done on stem borer infested plants
- ✓ Install Broca traps (10 per acre) to manage coffee berry borer infestation
- ✓ Drench Imidacloprid 17.8 SL @ 120 ml in 200 litres of water around root region of infested plant in new clearings, if root mealybug infestation is noticed
- ✓ Take up light/hard pruning for the yielding plants and collar or rejuvenation pruning for old, unhealthy and unproductive plants
- ✓ Apply 10% of Bordeaux paste (100 g CuSO_4 + 100 g Lime in one litre of water) on the cut surface of coffee plants / shade trees to avoid fungal infection.
- ✓ Apply compost/farm yard manure (FYM) at the rate of 5kg per plant, if the soil moisture is sufficient

Nursery

- ✓ Transplant 'Topee' stage coffee seedlings to polybags and attend after care of seedlings in the late sown nursery beds
- ✓ Drench the seed bed with fungicide solution Carbendazim 50 WP @ 1g/litre or Mancozeb 75 WP @ 2.5 g/litre at 30 days interval to minimize collar rot disease incidence

New clearings

- ✓ Take up line marking and opening of pits



AGRONOMICAL PRACTICES

In established plantations

- ☐ Continue pruning in Arabica coffee plantations
- ☐ Complete pruning in Robusta coffee, if not done during previous month
- ☐ Ensure sufficient moisture in the soil prior to pruning in both Arabica and Robusta coffee
- ☐ Take up hard pruning, if the plants damaged badly during shade lopping/regulation
- ☐ Take up collar or rejuvenation pruning for old, unhealthy and unproductive coffee bushes
- ☐ Rejuvenation pruning must be practiced with sufficient moisture in the soil to enhance sucker production
- ☐ Rejuvenation pruning must be practiced by cutting the main stem at the height of 30 cm / 1 ft from the ground level
- ☐ Ensure slant cut at 45° angle facing North-East direction to avoid the Western exposure
- ☐ Apply compost / farm yard manure (FYM) at the rate of 5kg per plant when the soil moisture is sufficient
- ☐ Take up cradle pit / water catch pit renovation

For Nursery

- ☐ Dip the uprooted seedlings in the supernatant of cow dung slurry prior to planting in the polybags to avoid desiccation of seedlings
- ☐ Transplant the button stage / butterfly stage seedlings into the polybags



Button stage seedlings



Butterfly stage seedlings



Polybag transplanting

For young plants

- ❑ Hutting should be provided to protect the young plants from direct exposure to sun
- ❑ Mulching and continue watering to young plants
- ❑ Apply compost/FYM at the rate of 2kg per plant for young coffee plants

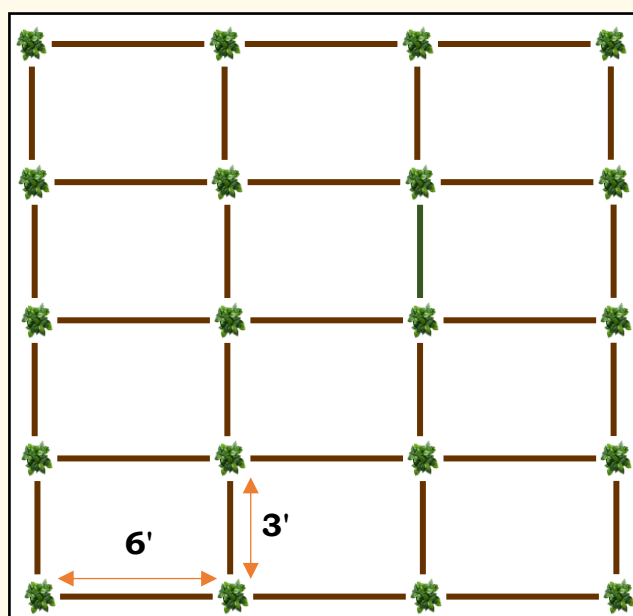
Composting unit at farm level

- ❑ Initiate the compost / vermicompost preparations by using the pulp waste, pruning twigs and other farm residues available at the estate

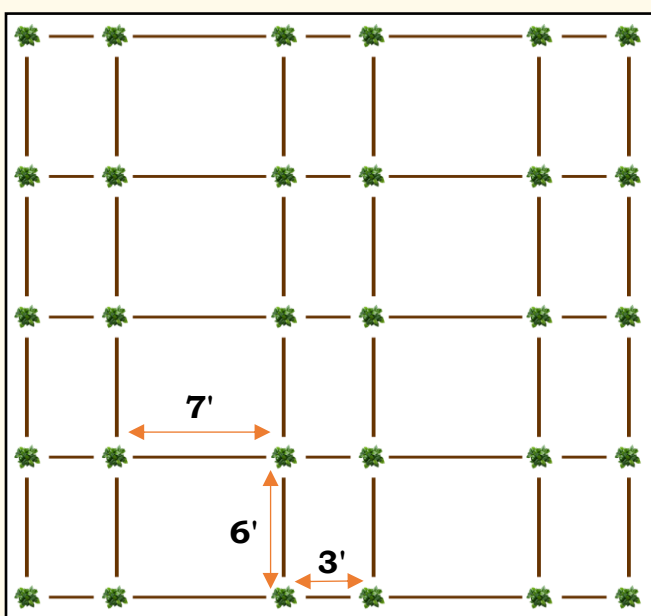
For replanting or new planting

- ❑ Line marking should be completed, if not done during previous month. Advised to follow 7 x 7 ft. or 6 x 6 ft. spacing for tall Arabica, 5 x 5 ft. (square) or 6 x 3 ft. (hedge row planting) for semi dwarf Arabica. For C x R Robusta, follow 8 x 8 ft. or 9 x 9 ft. spacing and for old Robusta 10 x 10 ft. or 12 x 12 ft.
- ❑ Complete pit opening (advised pit size is 45 x 45 x 45 cm - Length, Breadth & depth respectively) and expose the pits to sunlight for at least 10-15 days which helps to kill the soil borne pests and pathogen

Ideal planting design for mechanization



Hedge row planting (6' x 3')
(5,980 plants per ha)



Paired row planting (3' x 6' x 7')
(3,630 plants per ha)

SOIL SAMPLING & ON-SPOT MOBILE SOIL TESTING

Collection of soil samples

Method

- ✓ One soil sample should cover about 2 hectares (5 acres) of land.
- ✓ Take the soil sample from the centre area of 4 plants.
- ✓ First, remove leaves and waste on the surface, then dig a hole up to 22.5 cm (9 inches) depth using an auger or crowbar (sabbal).
- ✓ Collect soil by scraping from top to bottom along the sides of the hole.
- ✓ Take soil from 20 different spots in the field and mix well to make it uniform.
- ✓ From this mixed soil, use the quartering method and take about 500 grams as the final sample.

Liming

- ✓ If your soil pH is below 6.0 (too acidic), applying lime is very important to correct it.
- ✓ In heavy rainfall areas (more than 100 inches), apply **agricultural lime or dolomite once in every 2 years**. In low rainfall areas (less than 100 inches), apply it **once in every 3 years**. Use liming materials alternately (change between lime and dolomite each time).
- ✓ Before applying, check the quality (purity) of lime.
- ✓ Use only lime materials which have a minimum of 80% purity or neutralizing value (good quality calcium carbonate).
- ✓ Best time to apply: **South-West monsoon areas:** November to April
North-East monsoon areas: January to March
- ✓ Apply lime only when there is sufficient moisture in the soil for better effect.
- ✓ Keep a gap of 30 to 45 days between lime application and fertilizer application.



Know your Soil Health (On-spot mobile soil testing campaign)

To help coffee growers understand the importance of soil testing and proper fertilizer use, the Coffee Board is conducting **On-Spot Mobile Soil Testing Camps at village / hobli level**.

- ☐ Planters can bring their soil samples and get tested on the spot (with a small fees).
- ☐ They will also get lime recommendation immediately based on soil results.
- ☐ To arrange this camp in your area, contact nearest Extension Office or Divisional Head (Soil Science & Agricultural Chemistry), CCRI Balehonnuru – 9187501958 / Email- ccrichem@gmail.com

👉 Farmers are encouraged to make use of this facility for better crop yield and soil health.

NUTRIENT MANAGEMENT IN COFFEE

- ✓ Use water-soluble fertilizers, especially phosphorus rich fertilizer, as it helps in better fruit setting and reduces fruit drop.
- ✓ In irrigated fields, apply fertilizers just before irrigation and cover with mulch (leaves/soil) for better absorption.
- ✓ Always decide the type and quantity of fertilizers based on soil test results.
- ✓ For Robusta coffee with a yield of around 700 kg clean coffee / acre, apply fertilizers as per the recommended dose.

Fertilizer sources	Quantity (kgs / acre)		Fertilizer sources	Quantity (kgs / acre)
Urea	45 kg (1 Bag)	(or)	Urea	65 kg (1.5 Bags)
DAP	50 kg (1 Bag)		SSP	150 kg (3.0 Bags)
MOP	50 kg (1 Bag)		MOP	50 kg (1 Bag)
Mixture	200 g / plant		Mixture	300 to 325 g / plant

- ✓ Provide an extra nutrient spray, 20 days after flowering (blossom) to reduce fruit drop and improve fruit setting.
- ✓ For preparation of one barrel (200 litres) spray solution, mix the following fertilizers / nutrients and mix well -
 - ❑ 1 kg 19:19:19 fertilizer (Foliar Grade)
 - ❑ 0.5 kg Zinc sulphate
 - ❑ 100 g Boric acid (or 250 g Borax)
 - ❑ 250 g Magnesium sulphate
 - ❑ 50 g Ammonium molybdate
 - ❑ 50 ml 4.5% w/w alpha Naphthyl Acetic Acid (NAA)
 - ❑ Add sticker / wetting agent (70 ml APSA or 200 ml local type)
- ✓ This spray is especially useful for farmers not having irrigation facility, as it helps in better crop retention.

CLONAL PROPAGATION IN ROBUSTA COFFEE

Clonal propagation in Coffee by means of stem cuttings has the following advantages:

- 1. Production of true to type of mother plants
- 2. Production of pest and disease free superior performing rooted cutting
- 3. Production of uniformly high yielding planting material and increased production of Robusta plantation
- 4. Early cutting of primaries and more number of primaries.

The important steps and their specific time schedule for successful propagation of clonal plants are depicted in below table.

Important steps for raising clones and their ideal time period

Sl. No.	Steps for Clonal propagation	Specific time to perform
01	Selection of elite mother plants	December to January is the optimum season
02	Preparation of nursery mixture and bags	April to May- procurement of nursery materials, sieving, solarization and bag filling
03	Collection of orthotropic shoots, Preparation of cuttings and planting	May to July during monsoon
04	Aftercare	August to September
05	Hardening of cuttings	September to October

To initiate clonal propagation in Robusta, the nursery mixture and basket preparation should be initiated in the current month.

Preparation of nursery mixture and baskets for planting of cuttings

- 1. **Material Procurement (April-May):** Jungle soil, sand and farmyard manure are procured during April / May.

**Sieved jungle soil****Sieved Sand****Sieved farm yard manure**

2. **Solarization:** Sieve the materials and expose them to direct sunlight for solarization. This process helps eliminate soil-borne pests and fungal contaminants.
3. **Mixing Ratio:** After solarization, mix the components in a 5:3:2 ratio (jungle soil: sand: FYM). If the soil particles are too fine, extra sand may be added to improve drainage and root penetration.
4. **Bag Filling:** Fill the mixture into 150-gauge transparent LDPE nursery bags (6" x 9"). These are suitable for maintaining clonal plants for 6–8 months. For longer durations, larger bags should be used to prevent root coiling.
5. **Arrangement in Raised Beds:** Place the filled bags tightly in raised nursery beds (4–5 inches high) to promote aeration and avoid excess moisture. This aids in faster shoot and root development.
6. **Protection:** Arrange the bags in net houses and cover with a polythene sheet to prevent soil splashing from rain until cuttings are planted.

**Filled nursery baskets****Nursery baskets arranged in net house**

PRE-MONSOON AND MOISTURE CONSERVATION PRACTICES

- ✓ Complete the pruning in Robusta if not done during March
- ✓ Remove the dried, weak and soil surface touching branches in Arabica coffee
- ✓ Arrange shade tree saplings, demarking and pit opening for planting of shade trees. Priority should be given to open and low shade areas especially where young coffee plants planted recently
- ✓ Provide mulching for both young and crop bearing coffee plants and give high preference to the low and no shade blocks / areas
- ✓ Use all the leaf litter materials fallen in the estates road sides as a mulching material to conserve soil moisture
- ✓ Renovate cradle pits/trenches and clear drains
- ✓ Regulate permanent and temporary shade trees towards end of May
- ✓ Apply bulk organic manures @ 1.0 to 1.5 kg per plant in Arabica and 2 to 3.0 kg per plant in Robusta

PEST MANAGEMENT

Management of coffee white stem borer in Arabica plantations

- ✓ Plants with severe infestation of CWSB can be collar pruned and the stems has to be disposed immediately
- ✓ Less infested plants or plants which are suspected for CWSB infestation can be wrapped with non woven fabric of 1 mm thickness (on main stem and thick primaries)
- ✓ Both the above operations should be completed on priority if not completed by the end of March
- ✓ Spray Phenthoate 50 EC @ 400 ml or Fipronil 5 SC @ 400 ml per 200 litre of water with 200 ml any wetting agent on the main stem and thick primaries during the second week
- ✓ Install Cross vane pheromone trap @ 10 nos per acre to trap adult stem borers in severely infested areas

Management of Coffee Berry borer

- Install Broca traps in the field (10 nos per acre), if gleanings are not removed.
- Refill Broca lure in the previously installed traps, if necessary



Coffee Berry borer

Management of Shot Hole Borer in Robusta plantations

- SHB infested twigs can be pruned below the hole made by adult borer and dispose to prevent further spreading
- Xycom traps (12 nos per acre) can be installed to trap the adult borer

1. Cost of Pheromone traps 25 nos – Rs. 3875.00
2. Cost of Broca traps 25 nos – Rs. 600.00
3. Broca lure per litre - Rs. 150.00
4. Xycom traps 25 nos - Rs. 750.00
5. Xycom lure per litre - Rs. 400.00
6. *Leptomastix dactylopii* (Parasitoid) – Rs. 200.00 for 1000 nos

Management of mealybug in Robusta plantation

- If severe infestation noticed, spray Imidacloprid 17.8 SL @ 50 ml in 200 litres of water with 200 ml wetting agent
- If mealybugs infestations are noticed in the root zone, drench Imidacloprid 17.8 SL @ 120 ml in 200 litres of water around root region of infested plant.
- Low infestation of mealybugs can be managed by release of parasitoids, *Leptomastix dactylopii* (5000- 10000 nos. per acre in 2 or 3 splits).

Note: Avoid releasing parasitoids after chemical spray

Beekeeping

- ✓ If any colony is divided and multiplied, provide artificial feed (sugar solution) to all the divided colonies for sustenance and development. Once the brood chamber attained full strength, place super chambers with frames (frames with foundation sheets for easy comb development)
- ✓ If the frames of the super chambers are filled with honey and cells are capped/sealed it indicates the honey is ready to harvest. Take out the frames from the super chamber uncap the sealed combs with uncapping knife and extract honey using an extractor
- ✓ Clean bottom boards of the boxes to remove debris and wax moth life stages (once in ten days) using hive tools and brush



DISEASE MANAGEMENT

Coffee Stem Canker

Symptoms:

- ✓ Stem canker generally affects plants older than 10 years, initially showing reduced foliage, pale green leaves, and an overall faded appearance.
- ✓ Irregular lesions develop on the main stem with hard, dry, slightly sunken bark, which become more prominent during the rainy season due to protrusion of surrounding bark.
- ✓ Scraping the bark reveals brown to black discoloration extending 5–10 mm into internal tissues.
- ✓ Lesions may occur in patches or along the entire stem, sometimes spreading to primary branches and below the collar region.
- ✓ In advanced stages, leaves turn yellow, branches wilt, and the plant eventually dies.



Irregular, hard and sunken bark surface



Protruding bark around the canker lesion



Faded appearance and pale green coloured appearance of infected plants



Black discolouration of the internal tissues



Defoliated dead plant

Management

- ✓ Coffee stem canker can be managed by preventing bark injury during the monsoon, as the pathogen infects through fresh wounds.
- ✓ Severely affected plants should be uprooted and destroyed after blossom or backing showers, while mildly infected plants should be stumped about 9 inches above ground after summer showers and treated with Bordeaux paste to promote regeneration.
- ✓ Injuries caused during field operations must be avoided or immediately treated with carbendazim solution or Bordeaux paste.
- ✓ In endemic areas, tools should be disinfected with carbendazim to prevent disease spread, and early infections should be controlled through Bordeaux paste application.



Application of Bordeaux paste



Cut end protected with Bordeaux paste

Collar rot disease

Symptoms:

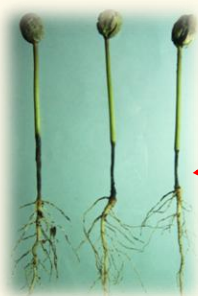
- ✓ Generally, in the primary nursery bed, coffee seedlings show brownish dis-colouration on the stem near the ground level or collar region leading to rotting of the tissue and death of seedlings.
- ✓ Rotting is mainly due to excess watering and overcrowding of the seedlings.

Management:

- ✓ Avoid excess watering.
- ✓ Remove the infected seedlings and destroy.
- ✓ Drench the seed bed with carbendazim 50 WP @1g /L or mancozeb 75 WP @ 2.0 g/L at 30 days interval.



Collar rot disease



**Rotting
of collar
region**



POST HARVEST MANAGEMENT

1. In case of on-farm storage of processed coffees (parchment /cherry), pack the processed coffees in clean gunny bags and store them in a well-ventilated godown over the wooden dunnage.
2. Arrange the coffee bags at least one foot away from godown walls.
3. Do not arrange/store coffee bags up to the roof top of the godown. There should be enough air space between the top most layer of the coffee stack and roof of the godown (ideally not less than 1/3rd of stack height).
4. Do not store the coffee samples at the estate level for long duration (beyond May), as the wet monsoon condition prevailing in plantation area from June to October are not ideal for storage.
5. Those estates who treat coffee effluent using various lagoons (equalization/neutralization tank, anaerobic lagoon, aerobic lagoon and settling tank), effluent sample may be drawn from the settling tank and test for the BOD level before use them for irrigation purpose. Ideally, the BOD level should be around 100 ppm for irrigation purpose within the plantation.



Storing of dry parchment on wooden dunnage

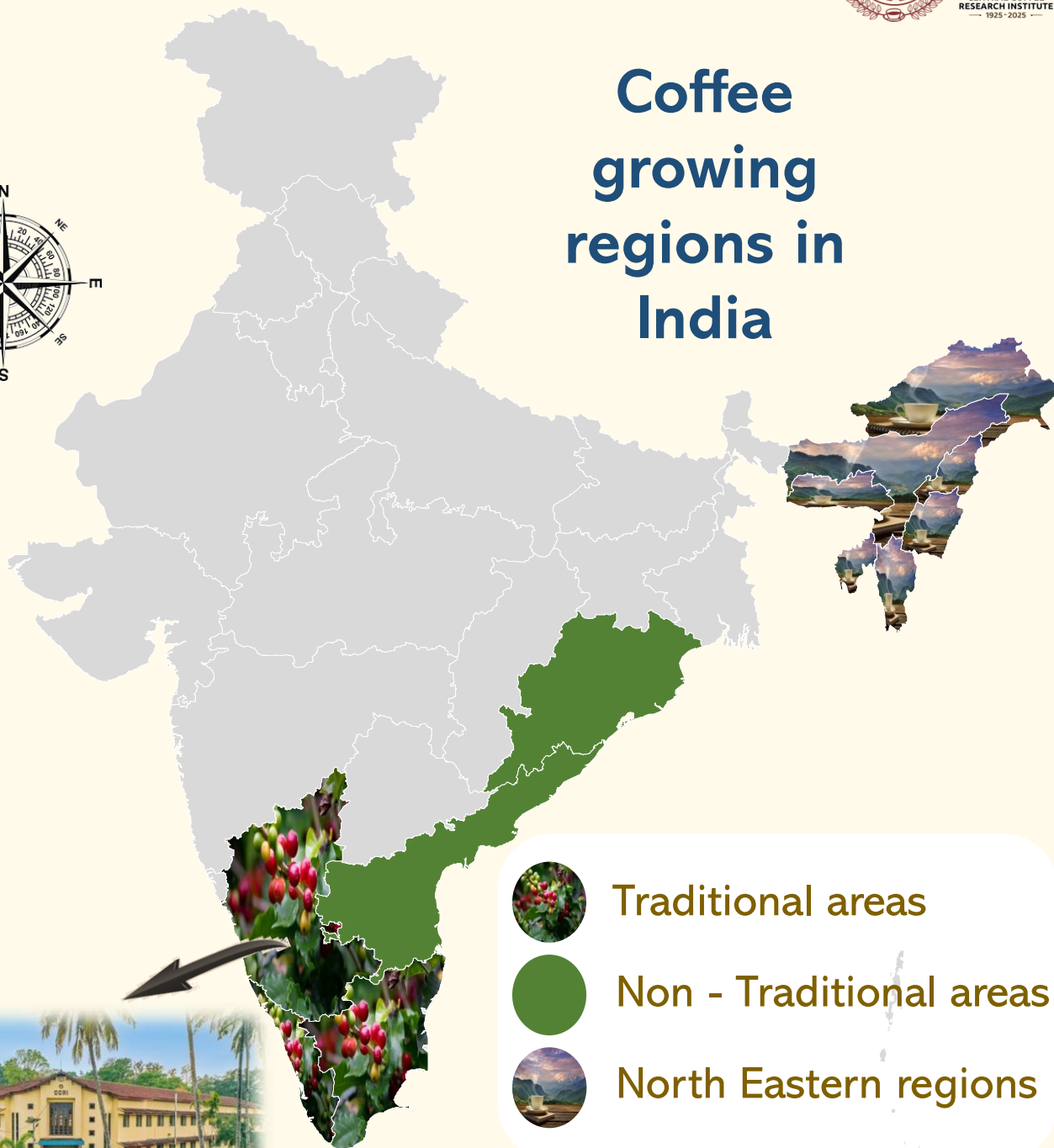
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