

SUSTAINABLE PRODUCTION TECHNOLOGY FOR SMALL ROBUSTA HOLDINGS

In vast majority of the small robusta holdings, the yield levels are low due to non-availability of water and infrastructure for irrigation. Thus, these holdings can be brought under sustainable production system as suggested below, by utilizing locally available inputs and family labour with moderate and economic yield levels.

Planting material

- Use polyclonal planting material (rooted cuttings) of S.274 or C x R.
- Interplanting with dwarf arabica varieties like Cauvery could be taken up to realise early returns. However, Cauvery should be phased out once robusta is established.

Consolidation of holdings

- Vacancies should be filled with rooted cuttings or seedlings of suitable varieties like S.274 or CxR.
- The old unproductive plants may be rejuvenated by top working with high yielding materials like S.274 or CxR.

Soil management

- In young clearings, grow green manure crops like *Crotalaria*, *Tephrosia*, cow pea, horse gram etc. and incorporate them into the soil before flowering to enrich the soil.
- Cover digging during first year and scuffling during the next 2 to 3 years would help in weed suppression.
- Soil cultivation like digging/ scuffling should be avoided in established plantations.
- Opening of cradle pits/ trenches across the slope during Aug-Sept. and renovation of the same before the onset of monsoon.
- In water logging areas, drainage channels should be opened.

Bush management

- If the plants are very closely spaced in the field, thinning is suggested to bring the plant population to the optimum level.
- In holdings with old robusta plants, which have lost the framework, hard pruning followed by 1 or 2 rounds of handling in a phased manner may be taken up.
- Desuckering and removal of shot hole borer twigs should be attended at regular intervals.
- Light to medium pruning of the plants may be taken up once in two to three years.

Shade management

- Maintain a medium shade canopy comprising of mixed shade trees, with a density of 100 to 120 trees per ha.

Weed Control

- Cultural methods like cover digging during first year and scuffling during next 2-3 years help in weed suppression.
- In established fields, slash weeding before flowering and incorporation in the field would be advantageous.

Nutrition

- Recycling of on-farm wastes like fruit skin, cherry husk, and farm yard manure after composting to reduce dependence on chemical fertilizers.
- Fertilizers and liming should be based on soil test values.
- Apply the recommended dose of fertilizers in two rounds, during post-blossom/ pre-monsoon and post-monsoon periods.
- Fertilizers may be broadcast and covered with mulch.
- Water soluble phosphates should be applied during the post-blossom period, while for post-monsoon period rock phosphate may be used.

Pest Management

Shot hole borer

- Maintain optimum shade and proper drainage to prevent build up of humidity.
- Regular tracing and burning of shot hole borer branches should be practiced.
- All suckers should be removed periodically.

Mealy bugs

- Build up adequate shade in open patches, which are endemic for infestation.
- Control ants by dusting Ekalux 1.5% or Folidol 2% or Malathion 5% dust around the base of coffee bushes and shade trees. Destroy ant nests.
- Control weeds.
- Spot application of Ekalux 25 EC (300 ml/barrel) or Folithion 50 EC (300 ml/barrel) or Lebaycid 1000 EC (150 ml/barrel) or Kerosene emulsion 2% (4 L/barrel) along with wetting agent @ 200 ml/barrel. While applying Kerosene emulsion, the spray solution should be stirred constantly for proper emulsification.
- The parasitoid *Leptomastix dactylopii* could be used for bio-control.
- For controlling root mealy bugs, drench the soil near root zone with Rogor 30 EC @ 3.3 ml/L.

Coffee Berry Borer

Coffee berry borer incidence has been noticed in certain areas in Sakleshpur zone. The following measures should be taken up to control the same.

- Timely and clean harvest.

- Collection of gleanings and leftover/ off-season berries. Use harvest mats to minimise gleanings.
- Spot application of endosulfan 35 EC (340ml in 200 lit.of water) or chlorpyrifos 20EC (600 ml in 200 litres of water) during when most of the beetles are waiting at the navel region.
- Proper bush management to make the control measures (sprays) more effective.

In other areas, which are free from the incidence of berry borer, the following measures shall be taken to prevent spread of this pest.

- Do not procure seeds from berry borer affected areas.
- Do not transport berry borer affected coffee into these zones.
- Use only new gunny bags for packing the harvested crop.

Disease management

Black Rot

- Clean the bushes by removing fallen leaves followed by handling and centering before the onset of monsoon.
- If disease is noticed, remove the affected leaves and branches and burn them and spray Bavistin 50 WP @ 120 g/ barrel during break in monsoon.

Root Diseases

- Isolate the affected patch by taking trenches around.
- Uproot the affected bush and apply two kg of agricultural lime to the pit and fallow it for six months.
- Drench the base of surrounding healthy plants with 0.4% Bavistin solution (8 gms / litre).
- Apply 10 kg of FYM or compost along with *Trichoderma* to the surrounding healthy bushes.

Inter cropping / mixed cropping

- Cultivation of intercrops like vegetables, ginger, yams and banana may be taken up during the initial 3-4 years.
- Only pepper should be as an intercrop in coffee blocks.
- Planting of areca nut and cardamom in valleys and coconut in borders can be adopted.

Estate level processing

- Harvest the crop when more than 70% ripening is noticed.
- Use mats during harvesting to minimise gleanings.
- Sort out greens from ripe fruits and dry them separately.
- Do not heap harvested fruits for long periods, as it encourages mould growth and quality deterioration.
- If pucca yards are not available polythene sheets should be used for drying coffee.
- Cover the cherry during night hours to avoid rewetting.
- Drying on mud or cow dung smeared surface should be strictly avoided.

