

SUSTAINABLE PRODUCTION TECHNOLOGY FOR UNIRRIGATED ROBUSTA

Majority of the small holdings may not have water resources and required infrastructure facilities for irrigation, which may not facilitate intensive cultivation. Hence, a sustainable production technology with low investment as described below would be most ideal for such holdings.

Planting material

- ❖ Use clonal planting material (rooted cuttings) of varieties like S.274 or CxR.
- ❖ 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

- ❖ Vacancy filling with the clones (rooted cuttings) or good quality seedlings of same variety.
- ❖ Rejuvenation of 'off types'/passenger plants by top working, if such plants are not many in the population.

Soil management

- ❖ Cover digging during the first year of planting and scuffling during the next 2-3 years suppresses the weed growth. In sloping terrain avoid digging and follow manual weeding only.
- ❖ Avoid soil cultivation in established fields. However, when root matting is noticed slight root pruning by scuffling or forking could be adopted.

- ❖ Take up cradle pits/trenches in staggered manner across the slope in established fields to conserve soil and moisture.
- ❖ Mulch young plants with dry leaves, to conserve moisture during dry months.

Bush management

- ❖ In holdings with old robusta plants which have lost framework, hard pruning followed by one to two rounds of handling may be taken up to bring back the bushes to normal shape.
- ❖ Regular bush management should be limited to periodical handling, centering, desuckering and removal of shot hole borer affected/damaged branches.
- ❖ Light to medium pruning and handling should be done once in two or three years.
- ❖ Remove all gourmandisers. In case retained by oversight remove them after taking one crop.

Shade management

- ❖ Indiscriminate shade thinning should be avoided.
- ❖ Maintain a medium shade with a tree population of 100-120 trees/ha. A medium shade comprising of mixed canopy would act as an insurance against long dry spells and erratic blossom showers.

Weed control

- ❖ Cultural methods like cover digging during first year, scuffling during next 2 to 3 years and cover cropping etc., effectively suppresses the weed growth. However, avoid digging in sloping terrain and practice only manual weeding.
- ❖ In established fields, slash weeding should be done before flowering of weeds. Use the weed slashings either as mulch to suppress grasses or for composting.

Nutrition

- ❖ Recycling of on-farm wastes like fruit skin, cherry husk, and farm yard manure after composting to reduce dependence on chemical fertilizers.
- ❖ Periodical soil testing once in 2-3 years for lime and fertilizer requirements.
- ❖ Recommended doses of fertilizers to be applied in two splits one each during pre-monsoon and post-monsoon periods, by broadcasting and covering with mulch

Drought amelioration measures

- ❖ The effect of drought could be minimised by giving foliar spray of nutrients containing 1 kg urea, 1 kg SSP, 750 g MOP and 1 kg Zn SO₄ per barrel. The first spray should be given 45 days after the last major rainfall and second spray 30-45 days after the first spray. If blossom showers are delayed one more spray could be given 30-45 days after second spray.

Pest management

Shot hole borer

- ❖ Maintain optimum shade and drainage to prevent build up of humidity.
- ❖ Regular tracing and burning of affected branches especially during post-monsoon (Sept.-Dec.) period.
- ❖ All the 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

As Chikmagalur region is free from Coffee Berry Borer, the following precautions may be taken to prevent its possible entry.

- ❖ 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 control

Root diseases

- ❖ Isolation of affected bushes including one row of surrounding bushes by trenching.
- ❖ Uprooting of affected bushes and application of agricultural lime @ 2 kg per pit and mix with soil. Fallow the affected spots for 6 months.
- ❖ Drenching the base of surrounding bushes with 0.4% Bavistin solution (8 g/l) @ 3L/plant, during pre-monsoon.

- ❖ Application of FYM @ 10 kg along with *Trichoderma* to the surrounding bushes.

Black rot

- ❖ In Black rot endemic areas, mono shade of Silver Oak should be avoided as it aggravates the disease incidence. It is therefore desirable to maintain mixed shade of conventional trees at wider spacing.
- ❖ Thinning of shade, opening of cradle pits, cleaning of bushes by removing fallen shade tree leaves etc. should get attention, prior to monsoon.
- ❖ Two rounds of handling and centering of bushes (pre-monsoon and mid-monsoon)
- ❖ When disease is noticed, clean the bushes by removing affected leaves, branches etc. and spray with 0.03% Bavistin (120 g/ barrel) during the break in monsoon.

Stalk rot

- ❖ Wherever the incidence of stalk rot is noticed in the previous year, spray with 0.5% Bordeaux mixture during pre-monsoon.

Inter cropping /Mixed cropping

- ❖ Cultivation of intercrops like vegetables, ginger, yams, banana may be taken up in the initial 2-3 years, to get income in the initial pre-bearing period.
- ❖ Planting of pepper as an intercrop in coffee blocks, areca nut and cardamom in the valleys, coconut and vanilla in the borders.

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.

