



Primary nursery bed Preparation



Sowing



Paddy Straw Mulching



Button Stage



Butterfly Stage



Polybag filling



Transplanting



Poly bag basket nursery

* * *

Published by Dr. M. Senthilkumar, Director of Research
Printed at M/s. Omkar Offset Printers, Bengaluru

NURSERY MANAGEMENT IN COFFEE



Central Coffee Research Institute
Coffee Research Station - 577117
Chikkamagaluru District, Karnataka

Certified coffee seeds: The success of new planting in perennial crops like coffee depends primarily on planting vigorous, disease-free seedlings in the field. So utmost attention is required to procure the certified coffee seeds from the Coffee Board.

Site for nursery: A gentle slope land without big shade trees having a water source nearby is preferred for nursery site. The soil should be light to medium loamy and free from soil borne pathogens like nematodes. The nursery site should be fenced off from cattle and other grazing animals and provided with overhead pendal for shade.

Germination beds: For sowing the seeds, germination beds of one meter width and six-meter length raised to a height of 15 cm from ground level are prepared, by incorporating 4 baskets (2 forlits) of well rotted cattle manure or compost, 2 Kg of finely sieved agricultural lime and 400 g of rock phosphate in each bed. The beds are spaced at 30-45 cm apart and provided with gentle slope between two beds for preventing water stagnation. If the nursery soils are heavy loams, it may be necessary to add coarse sand for facilitating drainage and aeration.

Sowing:

- ❖ Seeds are sown during December or January with their flat side facing the soil, at a distance of 2.5-3.0 cm in regular rows
- ❖ They are covered with a thin layer of finely sieved soil. After sowing, the beds are mulched with a layer of paddy straw which ensures optimum temperatures for seed germination and protects the seed from desiccation
- ❖ The beds are watered daily in the morning hours with a rose cane
- ❖ Under optimum conditions seeds would germinate in about 45 days and attain button or topee stage. Remove paddy straw cover once germination is noticed
- ❖ The seedlings at button or topee stage are then transplanted into either polybag nursery (basket) or secondary nursery beds

Polybag (basket) nursery:

- ❖ Preparations for the polybag (basket) nursery should be commenced well in advance to the transplanting time

Contributors:

Dr. C. Babou (Head)
Mr. C.S. Rudragouda (SMS)
Dr. Mote Kishor Jalindar (RA)

- ❖ Top fertile soil preferably from virgin forest lands is collected and dried thoroughly. Later the dry soil is sieved
- ❖ A nursery mixture of six parts of sieved jungle soil, two parts of well rotted and sieved cattle manure or compost and one part of fine river sand is prepared for filling up nursery bags
- ❖ Polybags of 22.5 x 15 cm size and 150 gauge thickness with adequate number of 3 mm holes (10-12 / bag) at the bottom half are preferred
- ❖ The prepared nursery mixture is moistened with water and firmly filled into nursery bags
- ❖ These bags are arranged in rows of convenient width (10-12 bags/row) within rectangular frames of bamboo reapers. These frames are held in position with bamboo or wooden props driven firmly into the ground at suitable distance

Transplanting: Coffee seedlings at “button” stage are transplanted into nursery baskets. Seedlings are gently lifted by using a bamboo stick from the germinating beds with minimum injury to roots. Prior to transplanting, the nursery baskets are watered and a vertical hole about 5 cm deep is made in soil at the centre of the basket. Seedling planted in the hole after nipping off the tip of tap root by taking care that shoot system is placed at the same height above the soil as it was in the germination beds. Transplanting is done preferably in the cool hours of early morning or late afternoon. Seedlings uprooted from the primary bed should not be stored for a long time but transplanted immediately. It is preferred to dip the roots of seedlings in cow dung slurry or water to prevent desiccation. The basket plants are usually planted in main field during late monsoon (August - September) and can withstand long distance transport.

Secondary nursery beds: In case mortality occurs for the August planting season and the same age group plants are to be planted in the main field. The Secondary nursery beds with ball plants are preferred for field planting in the next planting season. These beds are made of the same soil composition as that of germination beds. Seedlings at button stages are planted at 30 cm apart after slightly nipping off the tap root. The beds are mulched and watered regularly.

If the ball plants are to be transported over long distances, soil around the roots should be removed and the seedlings may be planted into polythene bags with a mixture of moss, humus and FYM.

Aftercare of seedlings:

- ❖ The seedlings are to be watered daily in the early morning hours depending upon weather conditions

- ❖ Provide overhead pendal shade till the commencement of regular monsoon
- ❖ Seedlings are manured once in two months with urea dissolved in water or supernatant solution of fermented cow dung slurry
- ❖ For every square meter area, 20 g urea dissolved in 4.5 l of water would be sufficient

Boosting of seedling growth: In case of delayed sowing and transplanting, the seedlings may not attain desired growth by field planting time. Under such conditions the growth of seedlings can be boosted by spraying any one of the following growth regulators in combination with urea at least one month before field planting.

- ❖ Planofix 50ml + Urea 1 Kg (or)
- ❖ Agronaa 50ml + Urea 1 Kg (or)
- ❖ Cytozyme crop plus 60ml + Urea 1 Kg in 200 l of water
- ❖ Application of 2 to 3 granules of 20:20:0:13 (Amophos) per seedling/bag will improve the vigour of the seedlings.

Tips for raising a healthy nursery:

- ❖ Collect seed only from authorized source – Research Department of Coffee Board
- ❖ Sow the seeds immediately after receipt, as any delay would lead to poor germination
- ❖ Provide overhead pendal shade before sowing the seed. Avoid deep sowing and excess watering
- ❖ Use thoroughly dried and sieved jungle soil & FYM/compost to prevent nematodes, cockchafer, earthworms etc.
- ❖ Transplant seedlings at button stage. Do not transplant deep
- ❖ Nursery bags should be punched sufficiently for proper drainage
- ❖ Avoid use of Bordeaux sprays and Lindane on nursery seedlings
- ❖ Do not apply urea directly on nursery seedlings as it might cause scorching
- ❖ Keep nursery clean and free from weeds, fallen leaves etc
- ❖ Follow timely protection measures against nursery pests and diseases

Editorial Committee:

Dr. T.N. Gopinandhan (Head, PHT)
Ms. K. Tintumol (SMS, Entomology)