



FACULTY OF AGRICULTURAL SCIENCES AND ALLIED INDUSTRIES

COFFEE (*Coffea spp*)

FAMILY: Rubiaceae,

- Arabica coffee = *Coffea arabica* =
2n= 44 = a tetraploid and self
pollinated- 80 per cent of
world coffee
- Robusta coffee = *Coffea canephora*
2n=22 a diploid – self sterile
and cross pollinated. Nearly
20 per cent (Suited for instant
coffee and generally utilized
for cherry coffee. Tree
coffee= *Coffea liberica*

Soil requirement

- Coffee is not very specific with respect to its soil requirements. Important features of ideal soil for profitable coffee cultivation are
 - 1) Soil depth :
 - It should be more than 75 cm Shallow or compact soil: Poor root development and spread. Roots develop only on upper horizons and it rarely goes deeper than 30 cm Deep and permeable soil (>75 cm): Well developed tap root system, and rhizosphere occupy considerable soil volume.
 - 2) Soil PH:

- Slightly acidic to neutral pH is preferred (PH of 4.50 to 6.00 and even upto 7.00)

Planting material selection for planting

A) Seed propagation in coffee **Preparation of seeds**

1. Selection of berries: Only ripe berries are marked from marked coffee trees for seed collection and remove pulp and get beans.
2. Discard floats and defective beans
3. Seed treatment: Treat seeds with fungicide and dry seeds under shade.

B) Vegetative propagation

- 1) Cuttings and 2) Grafting

Propagation by cuttings

1. Selection of shoots: Select orthotropic (vertical shoots) suckers from elite trees.
2. Age of shoot: Semihard wood and of about six months old. (3 to 6 months old shoots are better)

Improvement of robusta coffee (*Coffea canephora*)

- Robusta selections from CCRI Balehonnur are
 - 1) Selection –1 R (S-270 and S-274)
 - 2) Selection –2 R (BR series 9,10 and 11)
 - 3) Selection – 3 R (C X R coffee)
- Unlike arabica coffee robusta coffee has long productive life of 70 to 80 years and hence, farmers' donot replace the old varieties frequently.

1) Selection – 1R (S-270 and S-274)

- It is a seeding progenies of two individual mother palm identified in robusta gene pool in India. It has 35 to 50 fruits per cluster.

Yield

- 10 q per ha. Under rainfed condition/ S- 274 is preferred to S-270 on account of its bolder beans and wide adoptability. Among the robusta selections S-274 is most popular and is promising well in planters' field of all robusta tracts in India.

2) Selection 2 R (BR series 9,10 and 11)

- Based on individual performance of clones BR (Balehonnur Robusta) 9, 10 and 11 raised from S-274 were found to be promising and seed mixture of these clones was issued as Selection – 2 R. .
- The population resembles S-274 in growth habit, yield potential and bean/cup characteristics.
- **Note:** It is important to note that only seed mixture of these three clones BR –9, BR-10 and BR-11 should be used for planting. Individual clones should not be planted separately which may result in no fruit set due to incompatibility problems.

3) Selection – 3 R, (C X R)

- It is a inter specific hybrid between Coffea congensis X C. canephora (Robust coffee i.e., Selelction- 274) = F1 (CXR)
- F1 is back crossed with both the parents (Robusta and congensis) Coffea congensis is a species closely related to both arabica and robusta with compact bush, drooping branches and better bean quality than robusta. .
- **Yield** : 12 q/ha

Speciality

- 1) Can be planted at a closer spacing of 8 ' x 8' than S-274 (i.e., 10 ' x10')