

Coffee

Coffee in India is grown under a canopy of thick natural shade in the ecologically sensitive regions of the Western and Eastern Ghats, which is one of the 25 biodiversity hotspots of the world. Coffee contributes significantly to sustaining the unique biodiversity of the region and is also responsible for the socio-economic development in the remote and hilly areas. In India, coffee is traditionally grown in the Western Ghats spread over Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Odisha as well as in the Northeast states. Coffee is predominantly an export-oriented commodity and 65% to 70% of the coffee produced in the country is exported while the rest is consumed within the country. Two different coffee species Arabica and Robusta are commercially grown in India. Indian coffee has created a niche for itself in the international market and commands a high premium, particularly Indian Robusta & Arabica due to its excellent blending quality.



GROW WITH KNOWLEDGE



CLIMATE AND SOIL: More than the soil factors, the geographic parameters like elevation, aspect, and environmental factors like rainfall, temperature, and atmospheric humidity can influence the economic production of coffee.

Climatic requirements for Arabica and Robusta coffee under South Indian conditions are given below.

FACTORS	ARABICA	ROBUSTA
Elevation	1000-1500 m	500-1000 m
Aspect	North, East, and North-East aspects are ideal	Same as Arabica
Slopes	Gentle to Moderate slope is ideal	Gentle slopes to fairly level fields are preferred
Temperature	15°C to 25°C ideal, cool, equable	20°C to 30°C ideal, hot, humid
Relative humidity	70-80%	80-90%
Annual rainfall	1600-2500 mm	1000-2000 mm
Blossom showers	March-April (25-40 mm)	February- March (25-40 mm)
Backing showers	April-May (50-75 mm well distributed)	March-April (50-75 mm well distributed)

For good growth of coffee, the soil should be deep (75 cm), well-drained, slightly acidic ranging between 6.0 to 6.5 pH, and rich in organic matter content. The coffee soil in India belong to the red and laterite soil groups. They differ in texture from sandy loam to clayey loam with colors varying from light grey to deep red.



PLANTING: Disease-free and vigorous seedlings should be selected for planting in the field. Seedlings with stunted and twisted roots should be discarded. Generally, seedlings raised in secondary nursery beds (about 16 to 18 months old) are planted at the commencement of monsoon (June) and polybag nursery seedlings (6 to 8 months old) are planted during August-September. The soil around the seedling should be packed slightly above ground level (2 cm) to prevent stagnation of water; also special attention should be given to avoid deep planting of the seedlings in the pit.



IRRIGATION MANAGEMENT: Coffee is primarily cultivated as a rainfed crop and should be irrigated during the 4 to 6 months of dry spell, which can substantially boost the growth and productivity of Coffee. The coffee crop also requires the maintenance of soil moisture during dry months. The most important factor which can limit the production of coffee even in well-managed estates is the long dry period. Besides this, if blossom rains are delayed beyond March, then the production of coffee can receive a major delay.



SPRINKLER IRRIGATION: It is the most versatile method of irrigation to supplement the natural rainfall for the growth and flowering of coffee. In sprinkler irrigation water application resembles rainfall.

FERTILIZER SCHEDULING OF MOSAIC PRODUCTS



BLOSSOM STAGE

FEB - MARCH



Mosaic DAP-65 kg

Mosaic MOP-60 kg

Mosaic Liquid Zinc at 1mL/L and Mosaic Liquid Boron at 1mL/L at pre-flowering and at the berry formation stage



PRE-MONSOON STAGE

MAY - JUNE



Mosaic DAP-65 kg

Mosaic MOP-60 kg

Mosaic K-Mag-50 kg



BREAK-IN MONSOON STAGE

AUGUST



Mosaic DAP-65 kg

Mosaic MOP-60 kg



POST MONSOON STAGE

SEPTEMBER - OCTOBER



Mosaic DAP-65 kg

Mosaic MOP-60 kg

Mosaic K-Mag-50 kg

BENEFITS

Root and shoot development

Improves blossoming & berry setting,

Better root and shoot growth, berry setting

Improves chlorophyll content and photosynthesis

Healthy and Greener leaves

Initiating new growth

Berry development

New shoot growth

Provide strength to stem

Maintain water balance

Translocation of sugar

Tolerant to pest and diseases







Less berry dropping

Improves berry size, the nutritive value of berries, yield, and quality.

Also improves soil and plant health

It is advisable to apply the total annual dose of fertilizers in a minimum of 2 or more splits as it reduces the losses of nutrients through leaching, fixation & improves Fertilizer Use Efficiency (FUE) by ensuring supply of nutrients throughout the year. If the nutrient requirement of the crop is high, then the application should be split into 3 or 4 rounds of application in order to avoid injuries to plants on account of high dose of fertilizers. It should be noted that for every round of application, the fertilizer dose should be restricted to a maximum of 40:30:40 kg of N: P2O5:K2O per acre.

NUTRIENT DEFICIENCY

Nutrients	Deficiency Symptoms	Affected Area	Nutrition Required
Phosphorus	Irregular patches of yellow color and mottled appearance in older leaves. The leaf turns red or violet and drops under severe conditions.	Stunted root and plant growth.	 <p>Application of recommended dose of DAP</p>
Potassium	Necrosis or scorching of tip and margins in older leaves.	Defoliation and dieback under severe deficiency, stunted growth, and reduction in yield and quality	 <p>Application of recommended dose of K₂O through MOP.</p>
Magnesium	Yellowing of older leaves between the lateral veins on either side of the midrib.	Reduction in photosynthesis leads to stunted growth	 <p>Apply K-Mag @ 100 kg/acre</p>
Sulphur	Yellowing of young leaves	Stunted growth, reduction in quality	 <p>Apply K-Mag @ 100 kg/acre</p>
Zinc	Rosette shaped leaf bunch, chlorotic small, elongated leaves	Short internodes, stunted plants	 <p>Foliar application of Mosaic Liquid Zinc @ 1mL/L</p>
Boron	Death of terminal shoot, leathery leaves with malformation of small leaves	New shoot and root growth will be restricted	 <p>Foliar application of Mosaic Liquid Boron @ 1mL/L</p>