COFFEE FARMING

SOIL REQUIREMENTS: -

- Soil requirements for growing coffee include deep, well-drained soils. Oftentimes, volcanic-origin soils are good for growing coffee. Leached topsoil, poor drainage, or solid rock near the surface of the soil will not meet the coffee trees' requirements for growing.

CLIMATE & TEMPARATURE: -

- Coffee plants grow best in areas with moderate temperatures, abundant rainfall, and plenty of sunshine. The optimal temperature range for coffee cultivation is between 18-23°C (64-73°F), with an average temperature of around 20°C (68°F).
- Temperatures below 13°C (55°F) can damage the coffee plant, while temperatures above 30°C (86°F) can reduce crop yields and affect the quality of the coffee beans.
- In terms of climate, coffee plants prefer a tropical or subtropical climate, with rainfall evenly distributed throughout the year. The

ideal amount of rainfall for coffee cultivation is around 1500-2000 mm per year, but coffee can also be grown in regions with as little as 500 mm of rainfall, if there is irrigation.

- Coffee plants also require well-drained soils that are rich in organic matter, with a pH range of 6.0-6.5.

Overall, the temperature and climate requirements for coffee farming are crucial to ensure the production of high-quality coffee beans.

VARIETIES OF COFFEE: -

1.Arabica coffee: -

- Coffea arabica, otherwise known as mountain or java coffee, is indigenous to Ethiopia and other neighbouring parts of East Africa. Arabic coffee is mainly cultivated in the highlands, hence the name. It is happiest between 600 and 1,200 meters above sea level.

- Because of the high altitudes, Arabica tends to grow more slowly than other types. The maturation time for Arabica cherries ranges between 9 and 11 months.
- Arabicas are one of the most exquisite coffee types in the world. However, not all Arabica beans are high quality. Only 5% of harvested Arabica beans meet the quality standards.
- Arabica beans have about 12 milligrams of caffeine per gram. Compared to other types of beans, like the Robusta, this is relatively low.

2. Typica coffee: -

- Typica trees trace their lineage to Yemen after arriving from Ethiopia at some point in the 15th century. In Yemen, certain typica plants were selected and brought to India via Dutch merchants. Later, it was brought to Java, and other parts of the Western hemisphere, like Haiti and the Caribbean.

- Typica plants are conical trees with narrow leaves, and long, slender berries and seeds. Typica plants are understood to have lower productivity than other types and are more sensitive to pests and disease.

3. Bourbon coffee: -

- Bourbon cultivars also originated in Ethiopia and were brought to Yemen. Afterwards, instead of being transported by the Dutch, bourbon plants left Yemen with the French, and were brought to an island in the Indian Ocean, east of Madagascar, called “Ile Bourbon”.

- Bourbon trees are generally rounder and ‘shrubbier’ than Typica trees. They have border leaves, and produce more spherical fruits and seeds.

4.LIBERICA COFFEE: -

- Compared to other coffee types, Liberia beans contain more caffeine. This results in a more bitter taste, unlike for example, the sweeter Eugenicide's beans. For that reason, Liberia beans are often blended into other beans, and rarely sold by themselves.

PLANTING SESSION & MATERIAL: -

- The planting session for coffee farming depends on the specific region and climate, as well as the variety of coffee being grown. In general, coffee plants are typically planted during the rainy season to take advantage of the increased moisture in the soil and to ensure the establishment of the young plants.
- In regions with distinct wet and dry seasons, coffee is typically planted at the beginning of the rainy season, which can vary from March to June depending on the location. In some areas, coffee can also be planted during the mid-rainy season or during a second rainy season if one occurs later in the year.
- In areas with more consistent rainfall throughout the year, coffee can be planted at any time, as long as there is enough moisture in the soil to support the growth of the young plants.
- It's important to note that the timing of coffee planting can also affect the timing of the harvest. Coffee plants typically take 3-5 years to start producing coffee beans, and the harvest usually occurs once a year during the dry season, which can range from November to February depending on the location.

PLANTING METHOD: -

Direct Seeding: This involves planting coffee seeds directly into the ground, either by hand or with a mechanical planter. This method is often used in areas with good soil conditions and sufficient rainfall, where the seeds can germinate and grow naturally.

Nursery Seedlings: This method involves growing coffee seedlings in a nursery, and then transplanting them into the field once they are mature

enough to survive. This method allows farmers to control the growth and development of the young plants, and to ensure that they are healthy and strong before being transplanted.

In-row Planting: This method involves planting coffee seedlings directly into the soil, with a specific distance between each plant, usually between 2-4 meters (6-12 feet). This allows for easier management and maintenance of the coffee plants, and ensures that each plant has enough space to grow and produce fruit.

Intercropping: This method involves planting coffee plants alongside other crops, such as bananas, beans, or vegetables. This can help farmers to maximize the use of their land, and to diversify their income streams.

FERTILIZERS: -

Pot size: 3 cm diameter and 15 cm length.
Growth medium: 150 ml/pot of (soil - 70% + manure - 30%).
Fertilizers in the growth medium:
5 Kg Super-phosphate /m3 growing mixture
1 Kg Rock-phosphate + micronutrients / m3
1 Kg KCl / m3 growing mixture.

After emergence (at a developmental stage of 2 leaves) with 0.3% mixture of: 0.5 B + 2.2 Mg +7 Zn + 10 N.

PESTS AND DISEASES: -

Coffee Berry Borer: This small beetle can cause significant damage to coffee beans, by boring into the fruit and laying eggs. Infested beans can become discoloured and can develop off-flavours, reducing their market value.

Coffee Leaf Rust: This fungal disease can cause defoliation and reduced yields, by attacking the leaves of coffee plants. Infected leaves may turn yellow and fall off, weakening the plant and reducing its ability to produce fruit.

Coffee Root-Knot Nematode: This microscopic worm can attack the roots of coffee plants, causing stunted growth, reduced yields, and even death in severe cases.

Coffee Berry Disease: This fungal disease can cause significant damage to coffee berries, by causing them to rot and fall off prematurely. Infected berries can also develop off-flavours, reducing their market value.

Coffee Wilt Disease: This bacterial disease can cause significant damage to coffee plants, by blocking the xylem tissue and preventing water and nutrients from reaching the leaves and fruit. Infected plants may wilt and die, reducing crop yields.

HARVESTING OF COFFEE: -

- Coffee plants are typically harvested once a year, during the dry season, which can vary depending on the location. The harvest season usually lasts for several weeks, and the timing of the harvest is critical to ensure that the coffee beans are at their peak ripeness and flavour.
- Overall, the harvesting of coffee plants is a labour-intensive process that requires careful attention to detail and a thorough understanding of the coffee plant's growth and development. By following best practices for harvesting and processing, farmers can ensure that their coffee beans are of the highest quality and flavour, and command a premium price on the market.