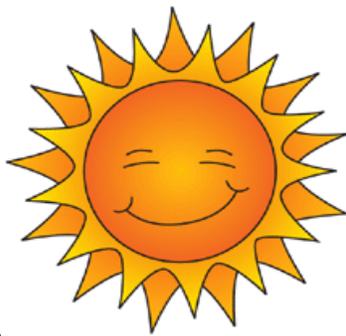


COFFEE FARMING TOPIC 04: SHADE MANAGEMENT IN A COFFEE PLANTATION

Shade management in coffee cultivation is the practice of selecting, planting, and caring for trees that provide shade in order to reduce excessive sunlight, protect coffee plants from temperature fluctuations, and prevent excessive water loss. This, in turn, supports healthy growth and improves yield quality. It includes pruning and reducing branches of shade trees to ensure coffee plants receive adequate light, choosing tree species suitable for the coffee-growing area, and conserving soil and water. Proper shade management helps coffee plants thrive, promotes their longevity, maintains plant health, and ensures consistent yield and quality.



Sun

Effects of Excessive Sunlight and the Importance of Shade on the Coffee Tree



Excessive sunlight affects coffee:

- High temperatures in the soil and on the leaves
- Loss of water from the soil and leaves
- Wind
- Excessive sunlight weakens coffee trees

Shade promotes the efficient use of resources such as:

- Soil
- Water
- Light

Arabica coffee is happy when it is grown under shade



The Importance of Shade on the Coffee Tree

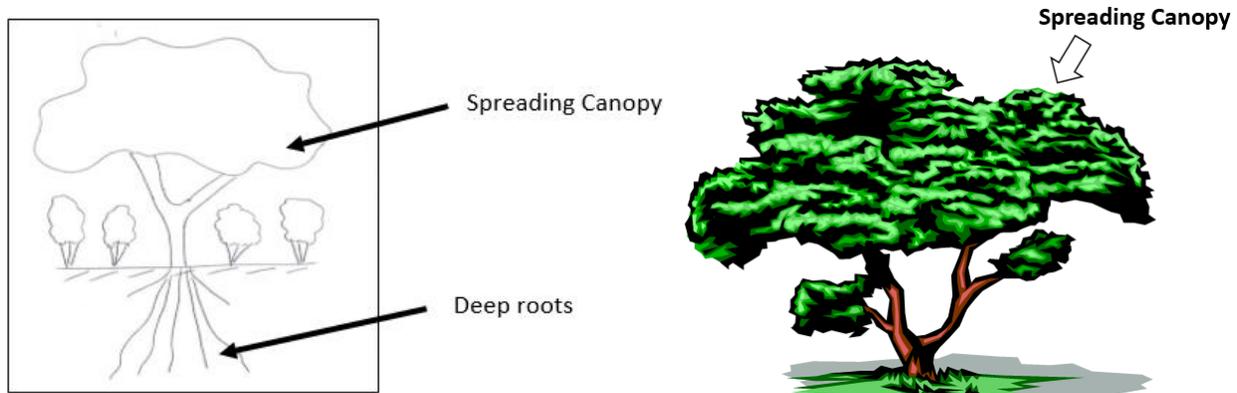


■ "Conservation of biodiversity
■ Weeds prevention
■ Retain soil moisture for a long time
■ /Improve soil fertility
■ Wind breaker
■ Legumineuse shade trees fix into the soil atmosphere Nitrogen
■ Shade trees act as wind breakers

Characteristics of a Tree that Provides Good Shade

- The tree grows quickly and becomes tall so that it can provide shade early.
- It has leaves that allow light to pass through gradually; the leaves are not too thick and do not completely block sunlight.
- It has deep roots that grow downward so they do not compete with coffee for nutrients.
- It can enrich the soil by fixing nitrogen from the air and returning it to the ground.
- Its roots firmly anchor the soil, preventing erosion and reducing wind damage.
- It should not be a host for diseases or pests that attack coffee.

- Avoid trees that produce harmful odors or toxins that negatively affect coffee



A good example of shade coverage is 20–40%

- This means that a coffee tree should not be completely shaded. Instead, each tree should be covered on **20 to 40 percent** of its surface.
- The farmer must ensure that the shade trees do not excessively block the coffee trees.
- The farmer should **prune the branches and leaves of shade trees** so that sunlight can reach the coffee tree at **60–80%** exposure.
- These branches should be pruned gradually, starting when the sun begins to become strong. **The unshaded part of the coffee tree should be larger than the shaded part.**
- Shade trees should grow and have their branches spread widely so that **all coffee trees receive some shade.**
- It is recommended to **plant shade trees before planting coffee**, or at least at the same time, so that they start shading the coffee trees early.

Examples of shade trees

		
Polyscias	Acacia	Albizia

List of shade trees for coffee and their preferred locations:

Tree Species	Suitable Agricultural Zones
Calliandra	Eastern savanna, eastern plateaus, central plateaus, and highlands of Buberuka
Acacia	Eastern and western plateaus
Ficus	Central plateaus, eastern plateaus, eastern savanna
Erythrina	Central plateaus, Nile Congo lowlands
Sesbania	Eastern savanna, eastern plateaus, central plateaus, highlands of Buberuka, Nile Congo lowlands, Kivu shores, Imbo region
Cordia africana	Eastern plateaus, central plateaus, Nile Congo lowlands and Kivu shores, Imbo region
Calliandra	Eastern savanna, eastern plateaus, central plateaus, and highlands of Buberuka
Acacia	Eastern and western plateaus
Ficus	Central plateaus, eastern plateaus, eastern savanna
Erythrina	Central plateaus, Nile Congo lowlands
Sesbania	Eastern savanna, eastern plateaus, central plateaus, highlands of Buberuka, Nile Congo lowlands, Kivu shores, Imbo region



It is recommended that a farmer consult a nearby agronomist when choosing shade trees, so that he can advise on tree species that provide good shade and are suitable for the area.

Shade trees are planted at a spacing of 6 meters. Once mature, they are pruned to maintain a spacing of 12 meters, depending on the tree species and the local climate conditions where the coffee is grown.