

## **COFFEE FARMING TOPIC 05: USE OF COVER CROP**

### **Definition**

**Cover crops** are plants grown mainly to protect and improve the soil rather than for harvest. In coffee farming, they help maintain soil health, reduce erosion, and also provide additional benefits such as suppressing weeds and increasing nitrogen content in the soil

### **Types of suitable crops and fertilizers for each area:**

#### **English translation:**

<b>Green manure crop</b>	<b>Districts</b>
Arachis pintoï	Rwamagana, Gatsibo, Kamonyi
Mucuna	Bugesera, Kayonza, Kirehe, Nyagatare, Rwamagana, Gatsibo, Kamonyi
Lablab (Hyacinth bean)	Bugesera, Kayonza, Kirehe, Nyagatare
Cow peas	Bugesera, Kayonza, Kirehe, Nyagatare
Desmodium	Rwamagana, Gatsibo, Kamonyi
Mimosa	Huye, Nyanza, Gisagara
Vetch	Nyamasheke, Rutsiro, Rubavu, Burera, Gakenke, Rulindo



**Pinto peanut** (*Arachis pintoï*) is a perennial plant belonging to the legume family. This grass can cover the soil and thus replace mulch, and it can be intercropped with other crops and trees due to its ability to fix atmospheric nitrogen and to grow well in areas with heavy shade. However, *Arachis* does not grow well in soils with compacted layers beneath the surface.



**Vetch** is a creeping plant that can grow to a height of 1 to 2 meters. It has a strong ability to cover the ground and suppress the growth of other weeds. This plant can fix atmospheric nitrogen at a rate of about 100 to 150 kg per hectare, which can help improve soil fertility. Vetch is also known for reducing populations of soil-borne pests, particularly nematodes.



**Mimosa** is a plant from the legume family that usually grows as a creeping shrub, is perennial, and produces flowers. There are many species of mimosa, so choosing the appropriate one based on its usefulness is important. Due to its vigorous growth, mimosa can sometimes compete with crops and coffee trees. Therefore, planting mimosa when coffee trees are still young requires caution. If it is necessary to plant it, sufficient spacing should be maintained between the mimosa and the coffee trees.



**Desmodium** has a coverage rate of over 80% of the soil and can cover large areas, effectively suppressing weeds that compete with crops over a long period. For one are of farmland, one kilogram of desmodium seed is required for planting.



**Mucuna** is a green cover crop that grows and after 6–8 weeks has fully covered the soil. It absorbs nitrogen from the air, providing the soil with about 60–150 kg/ha per season. It is a highly nutrient-rich green manure. When young, it requires sunlight and does not tolerate shade. Once established in the soil, it becomes drought-tolerant. This plant grows vigorously and can climb coffee trees, potentially damaging them. Therefore, a

farmer who chooses to plant it must regularly monitor it, trim it, and cut it to prevent harm to the coffee trees.



**Cow peas** grow quickly and cover the soil. They need to be planted in fertile, well-manured soil. By covering the soil, they suppress weeds and prevent erosion. They return nitrogen fertilizer to the soil at a rate of 60–90 kg/ha per cropping season. They are tolerant to sunlight."

### Benefits of cover crops

- ✓ **Soil enrichment:** These plants capture nitrogen from the air and return it to the soil
- ✓ **Erosion control:** They help prevent soil from being washed away by erosion.
- ✓ **Weed suppression:** They reduce competition from unwanted weeds.
- ✓ **Soil water retention:** They help the soil retain water during dry periods.
- ✓ **Increasing biodiversity:** They promote beneficial soil organisms and reduce pests

### Cover crop management:

#### a) Timing for Planting Cover Crops

- At the beginning of the rainy season, so they grow well and establish properly.
- Plant them while coffee is still young, to help reduce weed growth.



- The seed rate depends on the type of cover crop. For example, *Mucuna* is planted at 25–30 kg/ha, while *Arachis pintoii* is planted at 5–10 kg/ha.

**b) Cover crop establishment**

- **Preparing the soil:** Lightly till the soil or clear the weeds; avoid heavy tilling near the coffee roots.
- **Sowing seeds:** Evenly scatter the seeds and then cover them with a thin layer of soil.
- **Planting in rows:** Plant in rows between coffee trees (especially legumes).