

## Module 7: Management Of Weeds In Coffee

### Objective

To enable trainees identify the various types of weeds and understand their economic importance and management strategies

### Content

- i) Introduction
- ii) Economic importance of weeds – effects on yields and quality
- iii) Classification of common weeds - annual and perennial
- iv) Timeliness in weeding – timing, age of weeds, height
- v) Methods of weed control – mechanical, cultural, chemical, integrated
- vi) Spray equipment, appropriate nozzles

### Methodology

- i) Lectures
- ii) Discussions on why weed and best time of weeding
- iii) Demonstrations on types of weeds, methods of weed control
- iv) Display of spray equipment, nozzles and herbicides

### Teaching aids / materials

- i) Projector, LCD/Lap top
- ii) Flip chart/ white board and marker pens
- iii) Weed specimens
- iv) Weeding tools
- v) Herbicide samples
- vi) Spray equipment and nozzles

### 7.1 Introduction

Weeds compete with coffee for nutrients, light and moisture. This leads to production of less yields and low quality coffee grades like C, T, TT and defects like lagged beans and pods. Weeds also act as alternate host to some coffee pests making their management difficult in un-weeded fields.

There are two types of weeds, annual and perennial. Their management includes mechanical, cultural, chemical and integrated weed management strategies.

### 7.2 Economic importance of weeds

A weed is plant that grows where it is not wanted. weeds have the following effects on coffee:-

- Competition for moisture, nutrients and light
- Lowers quality and quantity
- Serves as alternate host for coffee pests
- Interferes with field operations

### 7.3 Classification of common weeds

Weeds are classified either as annual or perennial weeds.

#### 7.3.1 Annual weeds

These are weeds that complete their vegetative cycle within one year and are easy to control e.g. gallant soldier, black jack and Mexican marigold

#### 7.3.2 Perennial weeds

These are weeds that persist over seasons and are difficult to control e.g. Kikuyu grass, nut grass, wandering jew, oxalis and couch grass



Well weeded coffee field



Un-weeded coffee field

### 7.4 Timeliness in weeding

Effective weed control depends on timely application of the control methods that should be done before:-

- Weeds get too big and the root system makes them difficult to pull out
- Weeds can seed adding to the weed problem (fourth leaf stage)
- Fertilizer is applied which would otherwise be taken up by weeds
- Mulching is done

### 7.5 Methods of weed control

Weed management in coffee can be achieved through mechanical, cultural, chemical or a combination of any two or more strategies hereby referred to as Integrated Weed Management (IWM).

### 7.5.1 Mechanical

#### This involves:-

- **Hand hoeing** - done shallowly to avoid damaging root hairs by using a hoe (jembe) or a panga.
- **Forking** - should be done every 2 – 3 years mainly to break hardpans and enhance soil aeration. This is best done during the dry season to aid in management of difficult weeds
- **Slashing** - appropriate when the soils are too wet and the use of a hoe is difficult. Care must be taken not to injure the trees as this would predispose them to Fusarium infection.
- **Tractor drawn mower** – this is economical on large scale operations

### 7.5.2 Cultural

This involves use of traditional practices such as mulching, close spacing and cover crops.

### 7.5.3 Chemical

This entails use of PCPB registered herbicides which are either systemic or contact in their mode of action.

- Systemic herbicides control both annual and perennial weeds
- Contact herbicides control the annual weeds
- Chemical control should be applied only as the last option

### 7.5.4 Integrated Weed management

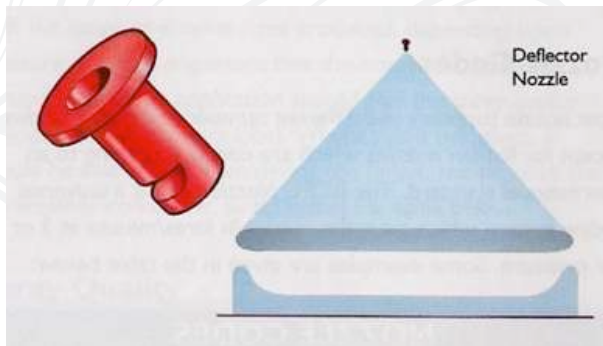
This is a combination of any two or more of the methods mentioned above. It is most effective, cost friendly and efficient as it is directed by the weed spectrum present in a particular coffee farm.

### 7.5.5 Spray equipment and appropriate nozzles

For effective chemical control, it is important to use recommended spray equipment - motorised sprayers or knapsack sprayers and most importantly the selection of nozzles. The nozzles should be wedge shaped as opposed to cone shape. These will cover large swathes as well as ensuring chemical does not drift to coffee plant. Sometimes it is important to use a shield to avoid any chemical drift.



Knapsack sprayer



Wedge nozzle for spraying weeds