

SUBJECT: AGRICULTURAL SCIENCE

CLASS: SS1

WEEK: 3

TOPIC: PRE-PLANTING, PLANTING AND POST-PLANTING OPERATIONS

TERM: 2ND

PRE-PLANTING, PLANTING AND POST-PLANTING OPERATION

PRE-PLANTING OPERATIONS

Pre-planting operations are operations that are carried out before planting. Planting is the sowing of seed, and pre-planting operations include; thinning, manuring, mulching and weeding.

PRE-PLANTING OPERATIONS

1. Land clearing: this is the removal of pre-existing vegetation on the farmland.
2. Stumping: this is the removal of stumps by digging them out manually using cutlasses and axes.
3. Farm layout: farm layout is the judicious way of using the farmland where the plots are divided into sections, and each section is used to give maximum yield.
4. Land preparation: this is ensuring that the soil is put in the best condition and state suitable for the crops' needs.
5. Tillage: Tillage is the breaking or turning of the soil with a simple tool or farm machine after the land has been cleared, in preparation for planting.
6. Ridging: Ridging involves the making of ridges on the farm, sometimes heaps are also made to serve as the purposes of ridges on slopes ridges are made erosion, ridges also helps to provide water for plant use and aids root penetration and establishment of crops.

PLANTING OPERATIONS

These are the operations that carried out when inserting the planting materials (Cutting or seeds) in the soil. When seeds are sown in the soil, they develop root and **shoots**. This is called germination, and the young plants that emerge are called seedlings.

A seed when planted undergoes the following process.

1. Germination: the process whereby the embryo of a seed resumes growth under favorable conditions.
2. Emergence: this refers to the appearance of a seedling above soil level.

Conditions necessary for germination of seeds are:

1. Adequate moisture.
2. Viable seed (living embryo).
3. Optimum temperature.
4. Adequate air.

Methods of sowing/planting

1. In-site (directly into the field/farmland).
2. Nursery

In-site planting/sowing directly in the field on flats (plain land) ridges or garden beds. Examples of crops planted in-site are maize, okra, cowpea, millet etc.

Basic consideration in planting operations

1. Planting space/distance.
2. Planting time
3. Number of seed
4. Planting depth
5. Viability of seed (life or deadness of the seeds)

Nursery

A nursery is a special place prepared for raising seedlings which are later taken to the field for proper planting (transplanting).

POST-PLANTING OPERATIONS

They are the operations carried out after planting. It creates a good condition and proper maintenance for plants growth.

Post-planting operations includes the following:

1. Thinning
2. Supplying
3. Irrigation/watering
4. Uses of manure and fertilizer
5. Mulching
6. Weeding
7. Harvesting
8. Processing
9. Storage etc.

(1) THINNING:

Thinning is the removal of excess weed or not well positioned seedlings from a seedbed after the viable seeds have germinated.

Advantages

1. It helps to avoid over crowding
2. Proper **aeration** is ensured, leading to a high yield.

(2) SUPPLYING:

It is the replanting of propagative materials where they failed to germinate. Supplying should be done as soon as possible.

Advantages

1. Correct plant population can be maintained.
2. The farmer can achieve uniform maturity.

(3) IRRIGATION (WATERING):

It is the artificial watering of farmland, especially during the dry season.

Advantages

1. It makes the soil temperature moderate for plant growth.
2. It enables a good nutrient supply to plants.

(4) MANURING/FERTILIZER APPLICATION:

It is the addition of organic manure, such as; poultry droppings, cow dung and green manures or organic manure (made from chemicals) to the soil, to maintain soil fertility.

Advantages

1. It supplies the plant with essential nutrients.
2. It maintains good soil structure.

(5) MULCHING:

Mulching is the covering of the surface of the soil with a layer of a clean dry vegetative part of a plant such as grasses or leaves.

Advantages

1. It conserve soil moisture
2. It reduces weeds and prevents erosion
3. It adds humus to the soil.

(6) WEEDING:

Weeding is the removal of unwanted plants (weeds) from the farm. It can be done with the aid of cutlass and hoes or by spraying herbicides.

(7) HARVESTING:

The removal of the ripe or matured useful part of a crop is known as harvesting. Commonly harvested parts of a plant are; tubers, leaves, fruits, seeds, roots etc.

EFFECTS OF TIMELY VERSUS LATE HARVEST

Delayed harvesting can lead to a total loss of products, although some crops like maize can be left on the field to get dry before harvest. Others like tomatoes and other perishables must be harvested immediately they are due for harvest.

(8) PROCESSING

After harvesting, processing of the product is required to make the product more acceptable, and to prevent spoilage in some farm products. Processing starts from the farm site. E.g. melon, groundnut, cassava, etc.

(9) STORAGE

After crops have been processed to usage forms, storage which is the keeping of farm products for future use is done. Methods of storage are; the use of barns, cribs, silos, refrigerators, baskets, sacks etc.