

P.4 Science class work Notes Week Two (15/June/2020)

Activity

1. What are crop growing practices?
2. Name the first crop growing activity.
3. In which season do farmers plant crops?
4. Define the term seed selection.
5. Give any two examples of planting materials.
6. Suggest any two qualities of good planting materials.
7. Identify the two methods of planting.
8. Write two advantages of row planting.
9. State one disadvantage of broadcasting as a method of planting.

LESSON 1 week 2

NURSERY BED

A nursery bed is a place where seeds are first planted before taken to a well prepared garden as seedlings.

A nursery bed is also called a **seed bed**.

Most fruit and vegetable crops are first planted in the nursery bed.

Examples of crops which are first planted in a nursery bed.

- | | |
|-----------|-------------|
| _Cabbage | _Eucalyptus |
| _Onions | _Egg plants |
| _Tomatoes | _Mangoes |
| _Coffee | _Red pepper |
| _Spinach | |
| _Oranges | |

Factors to consider when preparing a nursery bed

- _The place should be well _drained (not filled with water).
- _It should be far from bushes to prevent pests.
- _It should be near a water source.
- _It should be protected from harsh weather conditions. E.g. strong wind.
- _It should be protected from wild animals.

Advantages of a nursery bed

- _It allows water to enter into the soil (proper water infiltration)
- _It helps in proper selection of good seedlings for planting.
- _It protects seedlings at an early stage against bad weather.
- _It is easy to care for the seedlings before transplanting.

Transplanting

This is the transfer of seedlings from a nursery bed to the well prepared (main) garden. It should be done in late evening to minimise water loss through transpiration. This is because temperatures are low .

Transplanting can be done using a trowel to control destruction of the plant root system.

Activity

1. What name is given to a place where seedlings are first planted before being taken to the main garden?
2. State any two advantages of a nursery bed.
3. List down four crops that are first planted in the nursery bed.
4. What is transplanting?
5. Name the garden tool used for transplanting.
6. Why do farmers use a trowel to transplant seedlings?
7. What is the best time for transplanting seedlings?
8. Why are seedlings transplanted in the evening and not afternoon?

LESSON 2

Ways farmers care for their crops in the garden.

Farmers can care for their crops in the following ways:

1. Watering

This is done to crops grow well in the dry season. It is done using either a watering can or irrigation systems.

2. Irrigation

This is the artificial supply of water to crops during a dry season.

3. Spraying

This is done to kill and control crop pests and diseases. This practice can be done using a spray pump or a knapsack sprayer.

4. Gap filling

This is the planting of seeds in spaces where they failed germinate.

5. Manuring and fertilizer application

This is the addition of natural fertilizers in the soil to improve its fertility.

Natural fertilizers are obtained or made from plant and animal matter after decomposition or rotting.

Soil fertility is the ability of soil to support plant growth.

Most farmers usually use farm yard manure because it is easy to make and releases long lasting crop nutrients in the soil.

Types of manure (Natural fertilizers)

There are three types of manure

1. Farm Yard Manure(FYM)
2. Compost manure
3. Green manure

Farm Yard Manure

This is manure got from animal urine and dung.

This is made from household refuse and left over. E.g .banana and potato peelings.

Green manure

This is manure made from green plant materials. E.g. plant leaves.

Advantages of natural fertilizers (manure)

- _They are cheap to make.
- _They improve the soil texture.
- _They last longer in the soil.
- _They bind soil particles together.
- _They improve soil water holding (retention) capacity.

Disadvantages of natural fertilizers.(manure)

- _They smell badly.
- _They are tiring to make.
- _They may contain disease causing organisms like bacteria.
- _They are heavy (bulky) to transport and store.

Artificial fertilizers

These are made from factories_

Examples of artificial fertilizers

- _NPK (Nitrates, Phosphorus and potassium)
- _SSP (Single Super Phosphate)
- _Ammonium phosphate

Advantages of artificial fertilizers

- _They are quick in improving soil fertility.
- _They are easy to apply.
- _They are easy to transport.

Disadvantages of artificial fertilizers

- _They are expensive to buy.
- _They change the soil PH (Potential Hydrogen)
- _They are poisonous to people and animals.
- _They lead to water pollution.

_They last for a shorter time in the soil.

Activity

1. Identify any three ways farmers care for their crops.
2. In which season do farmers water crops?
- 3. Cite any two types of manure.**
4. Which type of manure is obtained from kitchen or household refuse?
5. Write two advantages of using natural fertilizers.
6. Give two disadvantages of using artificial fertilizers.
7. Suggest any one example of an artificial fertilizer.

LESSON 3

6. Thinning

Thinning is the removal of excess and unhealthy seedlings in a nursery bed or garden.

Thinning is carried out in crops such as maize, banana, sorghum, rice, millet, cotton, coffee. e.t.c

It should be done in wet season when the soil is soft to avoid damaging other plant roots.

Advantages of thinning

_It helps to control crowding of crops in a seed bed or garden.

_It helps to create space for proper growing of crops.

_It helps to control some pests in crops.

7. Pruning

Pruning is the removal of excessive branches from a growing plant. It is done on crops like mangoes, oranges, lemons, Cyprus trees, apples, banana, avocado etc

Pruning can be done using secateurs, shears or pruners and knives.

Advantages of pruning

_It improves on crop yields.

_It reduces on the weight of a plant.

_It creates space for proper growth of a plant.

_It helps to control crop pests.

_It helps to control crop diseases.

_It helps to control the rate of transpiration.

_It helps to reduce competition for sun light and space among crops.

8. Weeding

Weeds are unwanted plants growing in a garden.

Examples of weeds

_Black jack

_Wandering dew

_Couch grass

_Spear grass

_Star grass

_Sword grass

_Wild finger millet

_Elephant grass

Weeding is the removal of unwanted plants from the garden.

Ways of controlling weeds in the garden.

_Spraying the weeds using herbicides. Herbicides are chemicals that kill weeds.

_Uprooting and burning weeds.

_Cutting and burning weeds.

_Mulching the garden.

_Practicing crop rotation.

_Regular weeding.

Importance of weeding crops.

_Weeding makes harvesting easy.

_It helps to increase yields.

_Weeding helps to control crop pest.

_It helps to control crop diseases.

_Weeding controls competition for sun light and nutrients among crops and weeds.

Advantages of weeds to people.

- _Some weeds are eaten as food.
- _They are used as building materials.
- _Some weeds are used as herbal medicine.
- _They can be sources of income when sold.
- _Some weeds are feeds for animals (livestock).

Disadvantages of weeds to people.

- _Weeds lower the quality of crop produce.
- _They give additional work to the farmer.
- _Some weeds are poisonous to animals.
- _They lead to poor harvest.
- _Weeds increase the cost of production.

Activity

1. Define the following terms
 - a) Pruning
 - b) Thinning
 - c) Weeds
 - d) Weeding
2. List two examples of weeds.
3. Suggest three ways a farmer could control weeds in his garden.
 4. Write down two advantages of weeding crops.
5. Identify any two disadvantages of weeds to people.

LESSON 4

1. Mulching

Mulching is the covering of top soil with dry plant materials. Materials used in mulching are called **mulches**.

Examples of mulches.

- _Coffee husks
- _Dry banana leaves
- _Stalks of maize plants
- _Residues of cereals
- _Dry elephant grass

Advantages of mulching

- _Mulching controls rapid growth of weeds.
- _It helps to control soil erosion.
- _It helps to improve soil fertility.
- _It helps to maintain moisture in the soil.

Disadvantages of mulching

- _Some mulches grow into weeds.
- _Mulches can cause fire hazards.i.e. they can lit to cause fire out break and burn crops.
- _It is tiring to a farmer.
- _Mulches may not be available in some areas.
- _Mulches can be hiding places for some crop pests.
- _Some mulching materials may spread diseases to crops in a garden.

2. Staking

Staking is the act of providing extra support to a growing plant using poles. These poles are called **stakes**.

Examples of crops that need staking

- | | |
|----------------|-------------|
| _Banana plants | _Some beans |
| _Tomatoes | _Some peas |

Other ways of caring for crops

Harvesting

This is the picking or removing of ready crops from the garden. Different crops are harvested in different ways.

Methods or ways of harvesting crops.

- i. By uprooting e.g. cassava, groundnuts, carrots, beet roots
- ii. By cutting e.g. Sugar cane, banana, sorghum, rice, wheat
- iii. By hand picking e.g. coffee, cotton, mangoes, oranges, apples

Tools for harvesting

- i. Hoe
- ii. Knives
- iii. Panga
- iv. Sickle
- v. Baskets/sacks

Harvesting should not be done either too early or late.

Disadvantages of early harvesting

1. It lowers the quality of seeds for the next planting.
2. Seeds contain a lot of moisture which may lead to rotting.
3. The grains become very small after drying.
4. The grains produce poor quality food.
5. It makes crops weigh less.

Disadvantages of late harvesting

1. Crops are damaged by crop pests.
2. It can lead to a poor harvest.
3. Late harvesting can lead to losses to a farmer
4. It can lead to dumpiness of ready crops especially in wet season.

Activity

1. What is staking?
2. Why do farmers stake banana plants?
3. Apart from banana, cite any other one crop that requires staking.
4. How do we call materials used in mulching?
5. Define mulching.
6. Give two reasons why farmers mulch their gardens.

7. Identify any two dangers of mulching.

8. How are the following crops harvested?

- i. Coffee _____
- ii. Groundnuts _____
- iii. Rice _____

LESSON 5

Drying crops

This is the act of removing water or moisture from crops before storing. This practice is done locally by sun drying. Modern farmers use solar or electricity to dry crops.

Storage of harvested crops

Harvested crops can be stored for future use using the following stores or facilities:

- i. Local \ traditional stores e.g granaries, sacks, pots, tins, gourds
- ii. Modern stores e.g silos

Conditions for proper storage

1. The store should be well ventilated.
2. Crops should be properly dried before storage.
3. The store should be leak proof.
4. The granary should have rat guards.
5. The seeds should be dusted with pesticides to control pests.

A granary

This is a structure made traditionally to store grains or any other harvested and dried crop.

Qualities of a good granary

It should have rat guards to prevent rats from entering the granary.

It should be leak proof.

It should be well ventilated.

Examples of crops stored in a granary

Millet, groundnuts, sorghum, maize, wheat.

Activity: Draw a granary and label the rat guards with letter X