



INDIAN SCHOOL AL WADI AL KABIR		
		
CLASS: IX	DEPARTMENT OF SCIENCE 2022 – 2023 SUBJECT: BIOLOGY	DATE 13:01:2023
WORKSHEET NO:5 WITH ANSWERS	CHAPTER: IMPROVEMENT IN FOOD RESOURCES (Part I)	Note: A4 FILE FORMAT
NAME OF THE STUDENT: _____		CLASS & SEC: IX _____

Objective type questions:

1. Multiple choice questions:

- a) Crop varieties can be made disease resistant by:
 i) Genetic modification ii) Hybridisation iii) By both i and ii iv) By green manures
- b) Identify the oil seed among the following:
 i) Sugarcane ii) Cotton iii) Sunflower iv) Green gram

2. Fill in the blanks:

- a) Tallness and profuse branching are desirable traits incrops.
 b) The crops obtained by crossing two different species of the same genus is called

3. Match the following:

Column A	Column B
Manganese	Sugarcane
Rabi crop	Micronutrient
Kharif crop	Sun hemp
Green manure	Mustard

4. Find out the wrong statement from the following

- (a) White revolution is meant for increase in milk production
 (b) Blue revolution is meant to increase in fish production
 (c) Increasing food production without compromising with environmental quality is called as sustainable agriculture.
 (d) None of the above.

5. Using fertilizers in farming is an example of

- (a) No cost production
- (b) Low cost production
- (c) High cost production
- (d) None of these

ASSERTION AND REASONING

Directions: In each of the following questions, a statement of Assertion is given, and a corresponding statement of Reason is given just below it. Of the statements, given below, mark the correct answer as:

- (a) Both assertion and reason are true, and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true, but reason is not the correct explanation of assertion.
- (c) Assertion is true, but reason is false.
- (d) Assertion is false, but reason is true.

1. Assertion: Nitrogen is a micronutrient.

Reason: Micronutrients are nutrients required in small quantity.

2. Assertion: Presence of weeds affects the crop field.

Reason: Weeds compete for food, space and light.

3. Assertion: Crop rotation is the practice of growing two or more varieties of crops in the same region in sequential seasons.

Reason: Cauliflower and chilli plants grown together in alternating rows are examples of crop rotation.

4. Assertion: Presence of weeds affects the crop field.

Reason: Weeds compete for food, space and light.

CASE STUDY BASED: -

Mixed cropping is growing two or more crops simultaneously on the same piece of land, for example, wheat + gram, or wheat + mustard, or groundnut + sunflower. This reduces risk and gives some insurance against failure of one of the crops.

Inter-cropping is growing two or more crops simultaneously on the same field in a definite pattern. A few rows of one crop alternate with a few rows of a second crop, for example, soyabean + maize, or finger millet (bajra) + cowpea (lobia). The crops are selected such that their nutrient requirements are different. This ensures maximum utilisation of the nutrients supplied, and also prevents pests and diseases from spreading to all the plants belonging to one crop in a field. This way, both crops can give better returns.

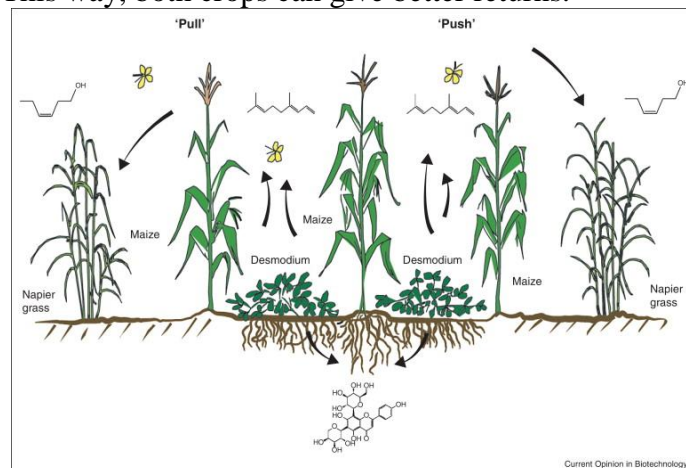


Fig: Inter-Cropping

1. Name the different cropping patterns mentioned in the paragraph.
2. On what basis are the crops selected for inter cropping?
3. What are the advantages of Intercropping?
4. Give one example of mixed cropping?

Short answer type questions. (2 marks)

- 1.State any four objectives used in varietal improvement.
- 2.Briefly explain any two sources of irrigation.
- 3.List any two advantages of fertilizers.
- 4.Which are the fresh initiatives in irrigation?
5. What are weeds? Give two examples of weeds.

Short answer type questions. (3 marks)

1. A farmer wants to harvest more than two varieties of crop at a time from his field. Suggest him one method to get the desired result. Also state two advantages of this cropping pattern.
2. a) Briefly describe the formation of vermin-compost and green manure.
b) Give one advantage of using manure for nutrient management.
3. Define crop rotation. While choosing plants for crop rotation, what factors should be kept in mind?
4. How many nutrients are essential for the plants? What are macronutrients and micronutrients?
5. a) Farmer 'X' planted soya bean + maize + cowpeas in the same field simultaneously in set row pattern. Farmer 'Y' planted cereal crop in one season and leguminous crop in the next season on the same piece of land in preplanned succession. Name the cropping pattern used by farmer 'X' and 'Y'. b) State two advantages of cropping pattern followed by farmers 'X' and 'Y'.

Long answer type questions. (5 marks)

- 1.i) A farmer is advised to use manures in his field which has clayey soil. How will adding of manures improve the soil texture of his field?
ii)Why are manures said to be organic and considered as eco-friendly?
iii)What are the different types of manures?
- 2.i) Briefly explain the protection of stored grains.
ii)Differentiate between cereals and pulses as crops.
- 3.i) Why is organic farming considered a sustainable agricultural method?
ii)Of the various cropping patterns, why is crop rotation called a sustainable cropping pattern?

Previous years questions

- 1.What is photoperiod?
2. How is green manure prepared?

3. Briefly explain any three objectives of varietal improvement.
4. What is intercropping? How is advantageous over mixed cropping?
- 5.i) Define hybridisation.
 - ii) Explain the different types of hybridisation. Name the most commonly used type of hybridisation.

SOLUTION FOR THE WORKSHEET

Objective type questions:

1. Multiple choice questions:

- a) iii) By both i and ii
- b) iii) sunflower

2. Fill in the blanks:

- a) Tallness and profuse branching are desirable traits in Fodder-crops.
- b) The crops obtained by crossing two different species of the same genus is called Interspecific hybridisation

3. Match the following:

Column A	Column B
Manganese	Micronutrient
Rabi crop	Mustard
Kharif crop	Sugarcane
Green manure	Sun hemp

4. (d) None of the above.
5. (c) High cost production

ASSERTION AND REASONING

1. (d) Assertion is false, but reason is true.
2. (a) Both assertion and reason are true, and reason is the correct explanation of assertion.
3. (c) Assertion is true, but reason is false.
4. (a) Both assertion and reason are true, and reason is the correct explanation of assertion.

CASE STUDY BASED: -

1. Mixed cropping and Inter cropping
2. The crops are selected such that their nutrient requirements are different.
3. i. Ensures maximum utilisation of the nutrients supplied.
 - ii. Prevents pests and diseases from spreading to all the plants belonging to one crop in a field.
4. soyabean + maize, or finger millet (bajra) + cowpea (lobia).

Short answer type I questions. (2 marks)

1. Any four objectives used in varietal improvement: High yield, resistivity, adaptability, good quality.

2. -Wells (short account on two types of wells) /Canals/River lift system (short account on any two)

3.-More specific in nutrient content

-Compact so easy to transport and store. (Any such advantages)

4. The fresh initiatives in irrigation are:

Rainwater harvesting and watershed management techniques like check dams.

5. Weeds are responsible for extracting the nutrients which are essential for the main crops. Examples of weeds are **Amaranthus, Chenopodium, Gajar Ghas**, etc.

1. To get best result, the farmer can try for **mixed cropping**. Mixed cropping is growing two or more crops simultaneously on the same piece of land.

- Farmers can keep their fields under continuous production.
- It enhances the productivity of the farmland.

2. i. When compost is prepared by using earthworms to hasten the process it's called vermicompost.

Prior to the sowing of the crop seeds, some plants like sun hemp or guar are grown and then mulched by ploughing them into the soil. These green plants thus turn into green manure which helps in enriching the soil nutrients.

ii. Advantages of Manure

Improves soil fertility. Reduces soil erosion and leaching. Improves the physical properties of the soil and aerates the soil. Improves the water and nutrient holding capacity of the soil.

3. The growing of different crops on a piece of land in a pre-planned succession is called crop rotation. The availability of moisture and irrigation facilities.

4. There are sixteen nutrients which are essential for plants. six are required in large quantities and are therefore called macronutrients. The other seven nutrients are used by plants in small quantities and are therefore called micro-nutrients

5. X intercropping

Y crop rotation

Advantage of intercropping - This ensures maximum utilisation of the nutrients supplied, and also prevents pests and diseases from spreading to all the plants belonging to one crop in a field. This way, both crops can give better returns.

Advantage of crop rotation - If crop rotation is done properly then two or three crops can be grown in a year with good harvests.

Long answer type questions. (5 marks)

1.i) The drawback of clayey soil is water logging. He he adds manure, the organic matter in it

which help in draining off excess water and thereby improve the soil texture.

ii) Manures said to be organic as they are prepared from plant and animal remains or waste. Manures are considered as eco-friendly as they do not degrade the soil quality, neither pollute the soil nor affect useful microbes in the soil.

iii) The different types of manures are:

Compost and vermicompost - Manure prepared by decomposition of plant and animal waste in pits in the soil. In some compost pits, worms are added to hasten the composting. This is vermicomposting.

Green manures- Manure prepared by uprooting weeds or some plants which grow in the field at the time of ploughing, crushing them and mixing into the soil.

2.i) Stored grains are to be protected from various abiotic factors and biotic factors.

This includes:

- a) Proper cleaning and drying of the produce before storage.
- b) Cleaning and keeping granaries and storage area free of moisture.
- c) Using pesticides in storage areas before storage. Fumigating storage areas.

ii)

Cereals	Pulses
Cereals are crops rich in carbohydrate content.	Pulses are crops rich in protein content.
E.g.: Rice	E.g.: Green gram

3.i) Organic farming is considered a sustainable agricultural method as it is the farming practice which involves minimum use of chemicals. Here the farmers use biopesticides, biofertilizers etc to increase productivity. Hence this agricultural practice does not degrade or pollute any resource and at the same time give high yield and better-quality products.

ii) In mixed cropping and intercropping the soil is being exploited as two or more crops are grown at the same time.

In crop rotation, crops are grown one after the other. So, the soil is not over used.

Furthermore, one of the crops in the planned cycle is a legume which helps the soil to regain its fertility. It is thus considered as a sustainable technique as it does not degrade the soil as a resource.

Previous years questions

1. Duration of light needed for the proper growth, flowering and development of a plant is called photoperiod.

2. Weeds or some plants which grow in the field prior to cultivation are uprooted at the time of

ploughing, crushed and mixed into the soil. They get converted into green manure.

3. Any **three** objectives of varietal improvement:

i) High Yield-Productivity should be more.

ii) Good quality -The quality of the product should be good. Like high protein content for a pulse.

iii) Wider adaptability -the crop variety should be adaptable to all climatic conditions as so can be cultivated anywhere at any time.

4. Intercropping is the cropping pattern where two or more crops are cultivated simultaneously

in the same field in definite pattern of rows.

As crops are grown in definite rows, application of fertilizers, pesticides etc can be done separately to each crop variety accordingly. Individual attention to crops is more effective which was difficult in mixed cropping. This increases productivity per unit area for each crop type which is not obtained in mixed cropping.

5.i) Crossing of genetically dissimilar plants is called hybridisation.

ii) The different types of hybridisation are:

a) Intergeneric -Crossing of plants belonging to different genus.

b) Interspecific -Crossing of plants belonging to different species of same genus

c) Inter-varietal -Crossing of plants belonging to same species. The most commonly used type of hybridisation is inter-varietal.

PREPARED BY MR. GERARD THOMAS	CHECKED BY HOD SCIENCE
--	---