CLASS -7
SUBJECT – SCIENCE(BIOLOGY)
CHAPTER - NUTRITION IN PLANTS

Teacher- Paramita Pal

Period/ worksheet -3

Answer Orally

1. Define the following.
   (a) Nutrients (b) Nutrition (c) Autotrophic nutrition
   (d) Heterotrophic nutrition (e) Autotrophs (f) Heterotrophs
   (g) Chlorophyll (h) Herbivores (i) Carnivores
   (j) Omnivores (k) Photosynthesis (l) Stomata
   (m) Guard cell (n) Variegated leaves
2. Name the four things required for photosynthesis.
3. Name a plant with variegated leaves.

Do you know?

The world's largest flower bearing plant, ***Rafflesia***, is a parasite.

1.4 HETEROTROPHIC NUTRITION IN PLANTS

So far, we have learnt about autotrophic nutrition which is commonly found in green plants. There are, however, some plants which cannot prepare their own food. The leaves in these plants do not contain chlorophyll.

How do these plants derive their nutrition?

Like humans and animals, such plants depend on the food prepared by other plants. This is the heterotrophic mode of nutrition.

Heterotrophic plants are of four types:

(i) Parasitic plants
(ii) Saprophytic plants
(iii) Insectivorous or carnivorous plants
(iv) Symbiotic plants

1.4.1 Parasitic Plants (*Para* = other, *sitic* = dependent)

The non-green plants which live on other living organisms and obtain their food from them are called ***parasitic plants****. The living organism from which a parasite derives its food is called the* ***host****.*

Fig. 1.10: Cuscuta (amarbel) on host plant

A common plant parasite is *Cuscuta* or dodder plant (amarbel). This parasite produces yellow tubular structures which attach themselves to a plant and wrap them around the stem and branches (Fig. 1.10). Its leaves are reduced to minute scales. Chlorophyll is not present in this plant. It absorbs readymade food from the host plant on which it climbs, through special structures called **haustoria**. The haustoria absorb food from the host plant.

PARASITIC PLANT

1. CUSCUTA:-

HAUSTORIA IN PARASITIC PLANT

Rafflesia the biggest flower of world is a parasitic plant

1.4.2 Saprophytic Plants (*Sapro* = decaying matter, *phytos* = plant)

The plants which live and feed on dead and decaying organic matter are called ***saprophytic plants.***

Many bacteria and fungi (like mushrooms, moulds and yeast) are saprophytic plants or **saprophytes**. Saprophytes, like the parasites, lack green colour and do not carry out photosynthesis. Saprophytic fungi secrete digestive juices on the dead and decaying matter and convert it into solution. The nutrients are then absorbed from it.

Fungi are commonly seen during and after rains. Hot and humid weather favours the growth of fungi.

Have you ever eaten mushrooms? These days, mushrooms are grown on a large scale, so that these can be used as food.

All mushrooms, however, are not edible. When you visit a supermarket, you can find whitish umbrella-like structures being sold. These are mushrooms (Fig. 1.11). These can also be observed in nature in a forest, during rainy season, growing on rotting wood pieces.

Also, have you noticed your unused shoes or school bags left in hot and humid weather for a long time? You will find white patches appearing on them. These white patches are fungi (singular fungus).

Let us perform the Activity 1.4 to see fungi.

Classroom Discussion

- Are we and the other animals parasites on plants?
- Are mosquitoes and leeches that suck our blood parasites?

Discuss with your class teacher.

Fig. 1.11: Mushroom (saprophyte)

Activity 1.4 (Study)

To study the growth of fungi

- Take a slice of bread on a glass plate and moisten it with water.
- Keep the glass plate in a moist warm place and cover it with a lid of petri dish or bell jar.
- Leave it for 2–3 days. Observe the slice of bread. You will observe a white cottony growth on the bread slice.

Now observe the cottony growth with a magnifying glass.

You may be able to see cotton-like threads (hyphae).

The cottony growth and the threads are of a fungus called **bread mould**.

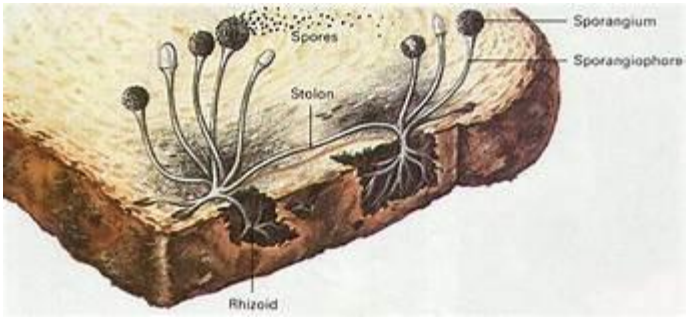
(a) Fungal hyphae

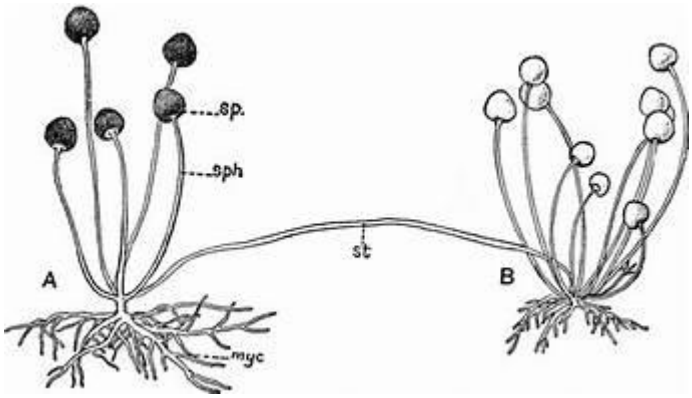
(b) Bread mould

Growth of fungus

Saprophytic plant

BREAD MOULD





WORKSHEET 7

1. Name four types of heterotrophic plant.
2. Define the term i) parasite ii) host.
3. Write the function of haustoria.
4. What do you mean by saprophytes?
5. Name an edible saprophyte.
6. How do saprophytes are different from parasites? Explain with example.
7. Draw a diagram of bread mould.