

## From Underground Stem

Potato, an underground stem has buds called eyes which gives rise to new plants.



Potato with eyes



Bryophyllum leaf

## From Leaves

Some leaves like bryophyllum grow new plants on its edges. These plantlets fall off and grow into new plants.

## From Spores

Some plants such as fern and fungi do not have flowers. They produce their spores, each of which grows into a new plant.



Spores in fungi



spores in fern

## GROWTH AND DEVELOPMENT IN PLANTS

Growth and development of plants depend on different kinds of soils, climates and seasons.

### Soil

Soil is one of the important factors for growing plants. Some plants grow well in one kind of soil but poorly in another. Different plants require different kinds of soil.

For example, rice and jute need soil that can hold enough water like loamy and clayey soil.

Wheat, jowar, bajra are grown in sandy and irrigated soil of Punjab, Uttar Pradesh and Rajasthan.

Cotton plants grow best in the black soil.

Tea plants are grown in moist soil of hilly areas of Assam, Nilgiri and Darjeeling, whereas maize plants grow well in dry soil.

Coconut trees grow only in coastal areas of salty soil.

### Climate

Different plants are adapted to different climates too.

The aquatic plants grow in water while the desert plants like cactus grow best in desert areas.



Some plants need heavy rainfalls like rubber, others like conifers are adapted to grow in hilly area where snowfall is a common phenomena.

Coconut trees are adapted to damp and moist climate.



Rubber tree



Coconut tree



Pine tree



Cactus

Plants of different climates

## Seasons

Seasons also affect the growth of plants.

Crops that grow in winter are called rabi crops. Wheat and gram are the examples of rabi crops.

Crops that grow in summer are called kharif crops. Rice, jowar and bajra are examples of kharif crops.



Rice



Bajra



Jowar



Wheat



Gram

Kharif crops

Rabi crops

## Getting Good Yield from Crops

Besides favourable climatic conditions, plants also require nutrients in the form of manure and chemical fertilizers to improve the growth and crop-yield. The proper development of plants is necessary for better quality and production of cereals, fruits and vegetables.

Dead and decaying plants, animals' wastes and cow dung are common manures. Urea, ammonium sulphates, nitrates and super phosphates are some common chemical fertilizers.

Insecticides and pesticides are the chemicals that are sprayed on the plants to protect them from various insects and pests. D.D.T. and gamma-xene are some common insecticides.





*Proper care of plants gives good yield*

Certain tips for a good and healthy crop yield are as follows :

- ▼ Use healthy and better quality of seeds for sowing.
- ▼ Prepare the land well before sowing.
- ▼ Add manures and fertilizers to the soil.
- ▼ Irrigate the plants properly.
- ▼ Remove weeds from the fields for the proper growth of plants.
- ▼ Use insecticides or pesticides, to keep the plants pest free.

Proper care of plants not only enhances the growth of the plants but also adds health and wealth to the nation. Think how ?



### Words to Remember

- Seed coat** : the thick outer covering of the seed, which protects the baby plant
- Cotyledon** : fleshy part of the seed that contains food for the baby plant
- Insecticides** : chemicals used for killing insects
- Pesticides** : substances used to kill insects or other organisms harmful to cultivated plants or animals