

# CONTROL AND CO-ORDINATION

## 1. What is irritability?

- ◆ All living organisms respond to changes in environment. This property is known as irritability.

## 2. What are the plant growth substances? Give Example?

- ◆ Co-ordination of developmental process in plants is through small chemical molecules called as plant growth substances.

**Eg:** Auxins, Gibberellin, Cytokinins, Abscisic Acids and Ethylene.

## 3. What are auxins? How do they affect plant growth? (V.V.Imp)

- ◆ Auxins are the phyto hormones. These are naturally present in plants parts like tip of the root, tip of stem and leaf primordium.
- ◆ Auxins are chemically known as Indole Acetic Acid - IAA.
- ◆ Auxins can be synthesised at laboratory called artificial auxins.

**Eg:** IBA - Indole Butyric Acid

NAA - Naphthelene Acetic Acid

2, 4-D - 2, 4-Dichloro Phenoxy Acetic Acid

### Role of Auxins on plant growth:

1. Auxins promotes cell division.
2. Auxins promotes apical dominance.
3. Auxins inhibits shedding of leaves, flower and fruits.
4. Auxins breaks seed dormance.
5. Auxins promotes root initiation.
6. Auxins promote phototropism, geotropism.

## 4. What is the role of gibberellins in plant growth and development?

- ◆ Gibberellins are the growth substances, or phyto hormones.
- ◆ There are usually present in roots, shoots, buds, younger leaves, embryos etc.
- ◆ Gibberellins was first isolated from the fungi called gibberella fujikuroi.

### Role of plant growth:

1. Gibberellins promote stem elongation.
2. Gibberellins promotes parthenocarpy (Formation of seedless fruits)
3. Gibberellins breaks seed dormancy.
4. Gibberellins inhibit shedding of leaves and fruits.
5. Dwarf and rosette plants like cabbage and dwarf pea plants growth after treatment with

gibberellins.

6. These substances are used for fruit setting grape bunches.
7. In brewing industry (fermenting industry) gibberellins is used to stimulate amylase activity in barley seeds. This is known to enhance the malting of barley grains.

## 5. What are the functions of cytokinins?

- ◆ Cytokinins are the plant growth substance or phyto hormones.
- ◆ Cytokinins are present in roots, embryos and developing fruits.

### Function/Role of cytokinins

- ◆ Cytokinins promotes cell division.
- ◆ Cytokinins breaks seed dormancy.
- ◆ Cytokinins can prolong the life of fresh leaf crops like cabbage, spinach etc.
- ◆ They will be useful in keeping the flowers fresh.
- ◆ The levels of cytokinins decrease senescing leaves.

**These above mentioned questions are very very important.**