PHYTOHORMONES

Ques: What are phytohormones? Point out the characteristic of phytohormones. Describe in detail the different aspects of Auxins.

Ans ⇒ Introduction ⇒ Growth and developments are important characteristics of plants. These lives are controlled by certain specific chemical, which are called as phyto hormones. The word "Hormone" ~~have its~~ originally from a Greek word - "Hormao" means "to urge on" or "to stimulate". Fleurant (1938) suggested to use the term phytohormones for hormones of plants.

Definition ⇒ The natural or synthetic chemicals, responsible for growth and development of plants are named as phytohormones.

They are also defined as organic substance which are synthesized in minute quantities in one part of the plant body and transported to other parts, when they are active.

Phillips (1971, 76) defined growth hormone as substance which are synthesized in particular cell and in small quantities, influence development process.

Characteristic of Phytohormones ⇒ These specific chemicals are characterised by the following feature:→

(a) They are effective even in minute quantities.
(b) The site of action and biosynthesis is different for a plant hormone.
(c) They show broad action spectrum.

(2)

Classification of Phytohormones ⇒ There are five classes of phytohormones:-

(1) Indol derivative (Auxins)
(2) Gibberellins
(3) Cytokinins
(4) Abscisic acid
(5) Ethylene

(1) Indol derivative or Auxin ⇒ The existence of Auxin was demonstrated by Darwin (1880). He was working on grass Coleoptile. He noted bending of grass Coleoptile towards unilateral source of light. The work of Darwin (1880) was extended by "Boysen" and Jensen (1910, 1913), Bol (1918), Went (1928) and many others.

Boysen Jensen (1910, 13) did experiment on Oat (Avena) Coleoptile. He decapited (cut off) tip of Coleoptile. The stump stopped to grow. He concluded that growth promoting substance is located in the Coleoptile tip. Similarly Paal (1919) demonstrated that if the cut tip is placed eccentrically on stump, the stump bend in opposite direction. But the workers failed to isolate the chemical present in Coleoptile tip.

Finally Went (1928) devised this world famous experiment to isolate the chemical present in Coleoptile tip. His experiment was very very simple. He placed the decapitated tip of Coleoptile over a thin block of Agar. The Agar block was allowed to stay for some time. The block was then cut in