PLANT GROWTH REGULATOR

M.Sc (Ag) Plant Biochemistry
Biochem-507
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- The need to explain tropismsre-direction of growth in response to light,PHOTOTROPISM gravity, GEOTROPISM touch, THIGMOTROPISM
  The need to explain patterns of development production of flowers, development of fruits, senescence of foliage, response to wounds

PHOTOMORPHOGENESIS

- Phototropism-The cress shoot was grown in unidirectional light from the right. There is a rapid curving response in the apical region which moves down the stem. Straightening of the upper stem in the later stages of the sequence makes the shoot appear to stop curving, but close examination of the lower stem shows there is still a response towards the light source.

Negative gravitropism

- In a shoot A young, vertically growing, sunflower seedling shoot placed in a horizontal position. The shoot curves until it is once again growing vertically. This gravitropic response is first observed in the apical region of the shoot. Rapid curving at the tip progresses along the whole stem. The rate of curvature is not necessarily constant along the stem and is complicated by subsequent straightening of curved areas known as autotropism.

Five plant growth substances and their functions

- Auxin Cytokinin Ethylene Abscisic Acid Gibberellin Meristems of apical buds, embryo of seed, young leaves Synthesized in roots and transported to other organs Tissues of ripening fruits, nodes of stems, senescent leaves and flowers Leaves, stems, green fruit Meristems of apical buds and roots, young leaves, embryo Stimulates cell elongation involved in phototropism, gravitropism, apical domincance, and vascular differentiation stimulates ethylene synthesis and induces adventitious roots on cuttings Stimulates cell division, reverse apical dominance, involved in shoot growth, delay leaf sequence Stimulates fruit ripening, leaf and flower senescence, and abscission Inhibits growth, stimulates stomatal closure, aintains dormancy Stimulates shoot elongation, stimulates bolting and flowering in biennials, regulates production of hydrolytic enzymes in grains.

Thanks