STANDARD X BIOLOGY CLASS 23 CHAPTER 3 CHEMICAL MESSAGES FOR HOMEOSTASIS

Chemical messages for communication

Pheromones.

- ➤ Chemical substances that are secreted by certain animals to the surroundings to facilitate communication are called pheromones.
- ➤ There is no specialized glands to produce pheromones.

FUNCTIONS:

- Attracting mates, informing the availability of food, determining the path of travel, signalling dangers etc.
- The chemical messages of pheromones help honey bees and termites to live in colonies.
- The reason behind the movement of ants in a line along a particular trail is due to the production of pheromones.

Examples for pheromones

The muscone in the musk deer, the civeton in the civet cat, bombykol in the female silk worm moth etc.

Artificial Pheromones

> Artificial pheromones are used for pest control in agricultural fields.

Plant hormones

Plant hormones control and coordinate life activities in plants.
These are also called plant growth regulators

Plant hormones and their functions:

Auxin

Cell growth, cell elongation, promoting the growth of terminal buds, fruit formation.



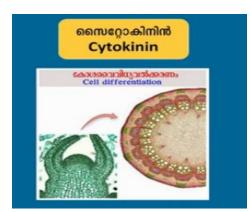
Gibberellin

Stimulates break down of stored food to facilitate germination, sprouting of leaves



Cytokinin

Cell growth, cell division, cell differentiation.



Abscisic acid

Dormancy of embryo, dropping of ripened leaves and fruits.



Ethylene

Ripening of leaves and fruits, excess amount of ethylene causes dropping of leaves and fruits.





Artificial Plant Hormones

➤ Plant hormones are synthesized artificially by identifying the chemical structure of the hormones. Use of such hormones has contributed a lot to the progress of the agricultural sector.

Auxins

➤ It is used in the agricultural field to prevent the dropping of premature fruits, for the sprouting of roots and as a weedicide.



➤ It is used for increasing fruit size in grapes and apple and also for preventing ripening of fruits to assist marketing.



Ethylene

➤ Ethylene is used for the flowering of pineapple plants at a time and for the ripening of tomato, lemon, orange etc. Ethyphon, a chemical which is available in liquid form, gets transformed into ethylene, when used in rubber trees and it increases the production of latex.



Abscisic acid

➤ It is used for harvesting fruits at the same time.



DEERITS OF ARTIFICIAL HORMONES:

- > The uncontrolled use of these chemicals causes many health and environmental issues.
- > Complete the following table

Plant hormones	Function
Auxin	
Abscisic acid	
	break down of stored food in the seed
	helps in the ripening of fruits

> WRITE A NOTE ON MERITS AND DEMERITS OF ARTIFICIAL PLANT HORMONES.