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Class : 12th

Unit : 1 (Sexual Reproduction)

Chapter : Fertilization in flowering plants.

Topic : Fertilization (continued.); Double Fertilization.

Lecture no. - 07

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Fertilization in flowering plants (continued) :

- The nucleus of the second male gamete fuses with the two haploid polar nuclei or diploid secondary nucleus of the central cell to form a triploid Primary endosperm nucleus.
- The central cell is now called Primary endosperm cell.
- This second fertilization is called vegetative fertilization since as a consequence of it, a vegetative or nutritive tissue is formed to nourish the embryo.
- Vegetative fertilization is also called triple fusion, since three nuclei get fused, two polar nuclei and one male gamete.
- In angiosperms or flowering plants, two acts of fertilization occur in the same embryo sac, one generative, and other ~~ve.~~ vegetative.

This phenomenon is called double fertilization.

Double Fertilization :

Double fertilization is the fusion of two male gametes brought by a pollen tube to two different cells of the same female gametophyte in order to produce two different structures. It is

- It is found only in angiosperms where it was first discovered by Nawaschin in 1898 in lilium.

- In angiosperms, the pollen tube bursts open in one of the two synergids to release the two male gametes.

- One male gamete fuses with the egg or oosphere to form a diploid zygote or oospore.

- It is called generative fertilization.

The second male gamete descends down and fuses with the diploid secondary nucleus of the central cell to form a triploid primary endosperm cell.

- It is known as vegetative fertilization.

Significance :

- Double fertilization provides the characteristics of the male plant as well as to the nutritive tissue.

- Double fertilization ensures that the nutritive tissue is formed only when the formation of embryo has taken place by fertilization of the oosphere or egg.