

A Presentation on
‘Fertilization’
for
B.Sc.-II, Semester-III
Zoology Paper – I (Developmental Biology)

By
Dr. D. M. Gaidhane
Associate Professor
Department of Zoology
Janata Mahavidyalaya,
Chandrapur

'Fertilization'

I. Definition:

The fusion of male and female pronuclei which results into formation of zygote is known as 'Fertilization'.

II. Aspects of fertilization:

Fertilization has two aspects:

1. Activation, and 2. Amphimixis.

1. Activation: To activate the egg for fertilization by a sperm.

2. Amphimixis: Fusion of male and female pronuclei is known as 'Amphimixis'.

III. Sites of fertilization:

Fertilization takes place at two sites:

- 1. External fertilization, and**
- 2. Internal fertilization.**

1. External fertilization:

It takes place in the water. It is reported in invertebrates and lower chordates.

2. Internal fertilization:

It takes place inside the body. It is reported in higher chordates.

IV. Types of animals:

There are two types of animals. These are:

1. Oviparous, and
2. Viviparous animals.

1. Oviparous animals: Those animals who lays eggs. Such animals are called as ‘Oviparous animals’.

For example, Amphioxus, Fishes, Reptiles, Birds, etc.

2. Viviparous animals: Those animals who gives birth to the young once are called as ‘Viviparous animals’.

Higher mammals are viviparous animals.

V. Mechanism of fertilization:

The mechanism of fertilization completes in five steps.

These five steps are:

Step - I: Approach of spermatozoa to ova,

Step –II: Capacitation and contact,

Step – III: Acrosomal reaction and penetration,

Step – IV: Activation of ovum, and

Step – V: Amphimixis.

VI. Significance of fertilization:

The significance of fertilization is as follows:

- 1. Fertilization brings together the genes and chromosomes from two different lines of ancestry which results into new genetic recombination.**
- 2. Fertilization maintains generations.**
- 3. Fertilization activates egg to start cleavage.**
- 4. Fertilization enhances metabolic activities of the animals and establishes new planes of egg axis.**

Thank you !