

Vidya Bhawan Balika Vidyapeeth Lakhisarai

Arun Kumar Gupta

Class 12th

Subject Biology

Date:-02.05.21

Outbreeding Devices– the various mechanisms take discourage self-pollination and encourage cross pollination as continued self-pollination leads to inbreeding depression. It includes

- Pollen release and stigma receptivity not synchronized.
- Anther and stigma are placed at different position.
- Inhibiting pollen germination in pistil.
- Production of unisexual flowers.

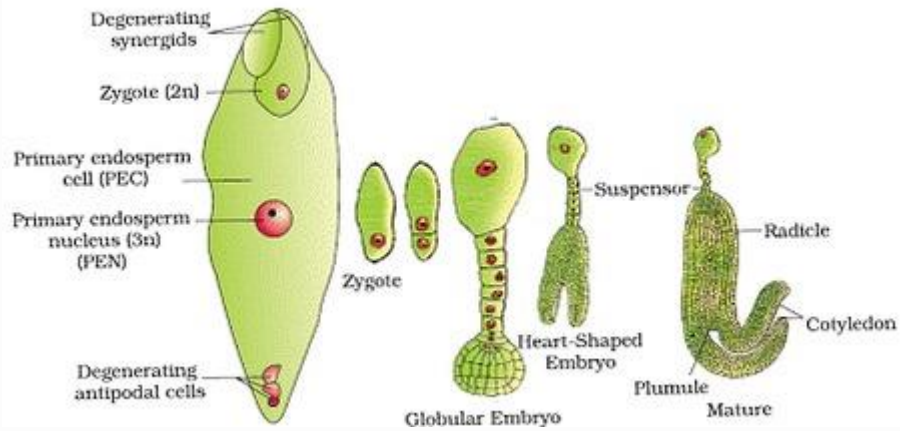
Pollen pistil interaction – the pistil has ability to recognize the compatible pollen to initiate post pollination events that leads to fertilisation. Pollen grain produce pollen tube through germ pores to facilitate transfer of male gametes to embryo sac.

Artificial Hybridization

- Crossing diff varieties of species- hybrid individual- with desirable characters of the parent plants
- desired pollen grains for pollination- stigma protected from contamination
- **Emasculation** : removal of anther
- **Bagging** : flower covered- bag made up of butter-prevent contamination of stigma from unwanted pollen

Bagged flower- attains receptivity- mature pollen grains- dusted on the stigma – rebagged- fruits allowed to develop

Double Fertilisation- after entering the one of the synergids, each pollen grain releases two male gametes. One male gametes fuse with egg (**Syngamy**) and other male gametes fuse with two polar nuclei (**triple fusion**) to produce triploid **primary endosperm nucleus (PEN)**. Since two types of fusion takes place in an embryo sac the phenomenon is called **double fertilisation**. The PEN develops into the endosperm and zygote develops into embryo.



Post fertilisation events include endosperm and embryo development, maturation of ovules into seeds and ovary into fruits.