

Sexual Reproduction in Flowering Plants

Flower Structure:

- Male: Stamen → Anther + Filament
- Female: Carpel → Ovary + Style + Stigma

Microsporogenesis:

- Microsporangium → Microspore mother cell → Meiosis → Microspore tetrad → Pollen grains
- Structure of pollen: Exine (sporopollenin), Intine (cellulose)

Megasporogenesis:

- Ovule structure: Funicle, Hilum, Micropyle, Nucellus
- MMC → Meiosis → 4 megaspores → 1 functional → Embryo sac (8-nucleate, 7-celled)

Pollination:

- Types: Self, Cross, Agents: Wind, Water, Insect
- Outbreeding devices: Dichogamy, Herkogamy, Self-incompatibility

Fertilization:

- Pollen germination → Pollen tube → Enters embryo sac → Double fertilization
- Products: Zygote, Primary endosperm nucleus

Post-Fertilization:

- Endosperm development: Nuclear, Cellular, Helobial
- Embryo development: Dicots vs Monocots
- Seed: Structure, Types (Albuminous, Non-albuminous)
- Fruit development: True, False

Apomixis & Polyembryony:

- Apomixis: Seed formation without fertilization
- Polyembryony: Multiple embryos in seed