

DEVELOPMENT OF MALE GAMETOPHYTE (pollen grain)

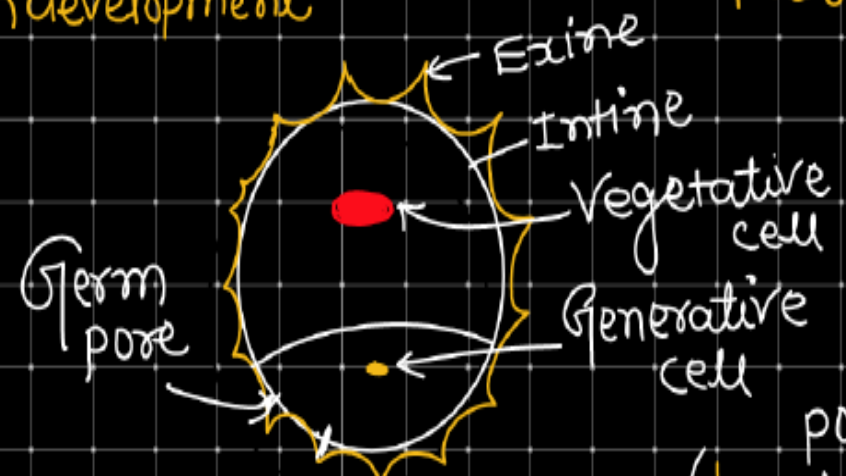
Microgametogenesis

First cell of Male gametophytes

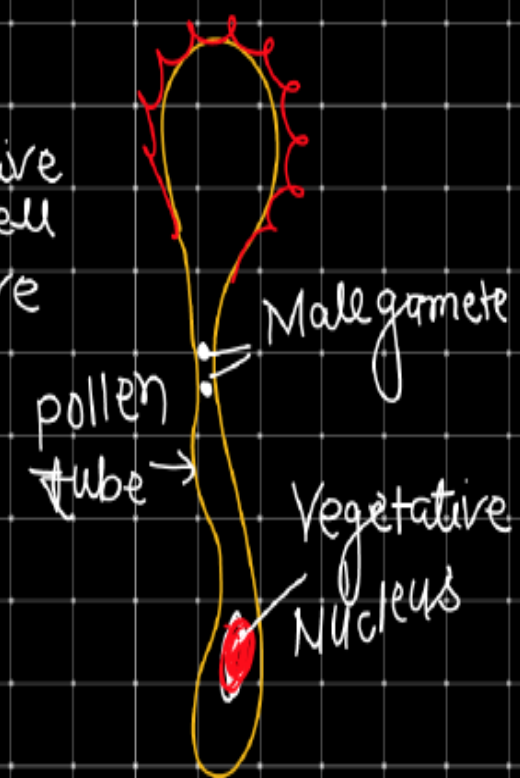
MMC of PMC → Meiosis → Microspore

In-situ development
Pre-pollination development

Ex-situ development
Post-pollination development



Structure of pollen grain (2-celled stage)



DEVELOPMENT OF MALE GAMETOPHYTES



Unequal

Mitotic division

Unequal size Nucleus

Generative Nucleus
Small Nucleus
(Near the wall) \oplus nt

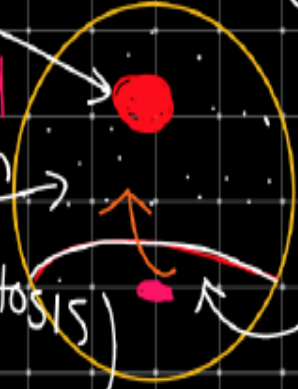


Vegetative of tube
of Nucleus
large Nucleus
(which \oplus inside
the cytoplasm)

Cytoplasm/dense

Unequal cytokinesis
(Results \rightarrow Unequal size of
cell are formed)

Larger cell or tube cell
Vegetative cells
irregular shaped
cytoplasm



Smaller cell

Generative cell
/ Spindle / Vermiform
shaped

(2 celled stage)
Partially Male gametophyte

(1 Meiosis + 1 Mitosis)

Generative cell
Vermiform shaped
dense cytoplasm

Enter in vegetive cell

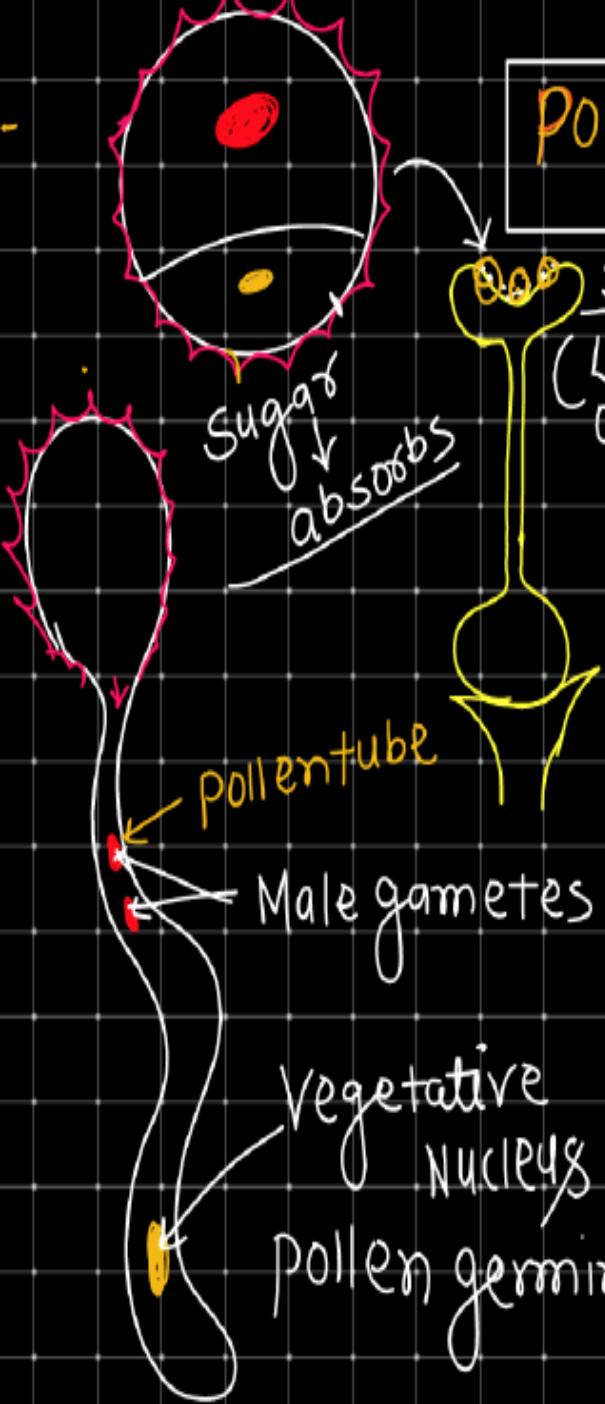
Floats in cytoplasm of
Vegetative cell

Generative cell
Mitotically

To give
to the (2) Male gametes
(3 celled Sta)
Male gametophyte

POST-POLLINATION DEVELOPMENT
 (Ex-Situ development)

Water



Pollen germination
 (Sucrose, Boric Acid, $MgSO_4$)

Generative cell

Mitotically division

two male gametes
 (Non motile)



Vegetative Nucleus
 pollen germination