

SEX REPRO. in PLANTS

Asexual

Prodⁿ of genetically identical offspring from 1 parent
mitosis (cell div.)

Only 1 parent involved
Beneficial qualities passed down to offspring

Less variatⁿ, less adaptable to env.

What
No. of parents
Process

Advantages

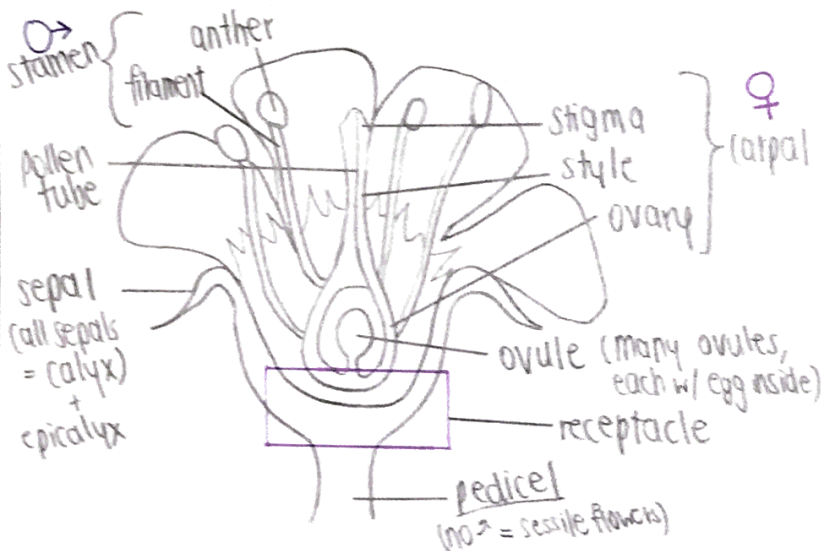
Disadvantages

Sexual

Prodⁿ of genetically dissimilar offspring + fusion of nuclei to form zygote
2 parents
Meiosis

Can be more adapted to env. changes
Beneficial qualities from both parents
→ greater genetic variatⁿ

2 parents req.



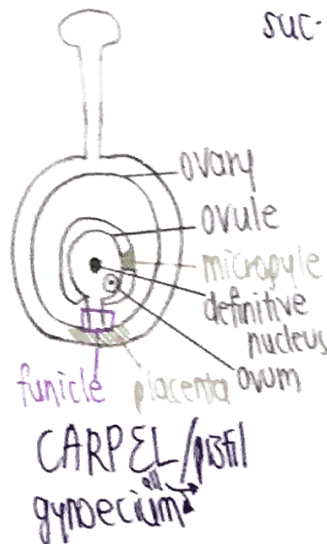
Sepals — modified leaves that enclose & protect other flower parts

Petals — Modified leaves that are brightly coloured to attract insect-pollinators & landing platform for.

Stamen/Androecium — Anther → 1 anther → 2 lobes → 2 pollen sacs eq.

Generative & pollen tube (p.g.) or vegetative nucleus → Pollen grain (many)

Contains vascular bundle to bring suc. & a.a., H₂O & min salts to anther



Stigma secretes sugary fluid to stimulate p.g. to grow

Style — Holds stigma in suitable position & connect...

Ovary — contains one or more ovules

ovum + definitive nucleus

Types of flowers

Superior ovary — ovary on receptacle
Inferior — — receptacle encloses ovary

Bisexual — Flower has both stamen & pistil
Unisexual — Either stamen or pistil

Monocious — Plant w/ both gendered flowers
Dioecious — Gendered flowers on separate plants

Radially symmetrical —
Bilaterally —

Self-pollinated

P.g. → same or diff. flw on same plant

Bisexual flowers have anthers & stigma maturing at ~~diff~~ same times

Stigma below anthers
(opt.: closed petals)

1 parent needed
Beneficial qualities passed...
Depend on external factors
High chance of pollinaⁿ
Less pollen & energy wasted to attract...

Less varieties → less adaptable to...

May lead to weaker & smaller offspring
~~that~~ that are less resistant to diseases

What?

Characteristics

Advantages

Disadvantages

X-pollinated

P.g. → diff. plant of same species

Male & female flower on diff. plant

Ant. & stig. mature diff. times

A & stig. of bisexual flw far away from e.o.

Beneficial qualities from both parents

More varieties of offspring (genetic variability)

↳ ↑ chance of survival of species in env. change

More viable seeds to withstand env. changes

2 parents

External factors

Lower chance of pollinaⁿ

More pollen & energy wasted (eg. nectar)

Pollination → P.g. transferred from A → Stg. so ♂ & ♀ can be brought t^gt.

Insect-Pollinated

- Flowers are large, brightly coloured & sweet smelling
- Nectar often present w/ nectar guides
- Stamen protrude & pendulous (maybe)
- Pollen fairly abundant, p.g. large, heavy, sticky w/ rough sfc. to stick to insect bodies
- Stigma small, compact & sticky, feathery, protrude

Wind-pollinated

- Flowers small, dull, scentless, petals
- Nectar & guides absent
- Stamen protrudes, pendulous to sway in wind & shake out p.g.
- Pollen abundant, p.g. small, dry, smooth, light/buoyant

FERTILISATION

- ① Mature stigma secretes sugary fluid to stim. p.g. & sper
- ② P.t. grows out of p.g. & elongate, cytoplasm, generative & p.t. nuclei pass into p.t.
- ③ Enzymes secreted to digest surr. tissue of stig. & style (p.t. enters ovule thru micropyle, then disintegrates)
- ④ Gen. nucleus divides into 2 male gametes
- ⑤ W/m ovule, tip of p.t. absorbs sap, swells & bursts,

DOUBLE fertilisaⁿ

- Fuse w/ ovum to form zygote

- Zygote → Embryo of seed
w/ cotyledon — seed leaves for food storage

plumule — shoot

radicle — root

- Fuse w/ definitive nucleus to form endo. n. ²ⁿ ³ⁿ (triploid)

- Endo. n. divides to form endo. tissue for food storage