

Fertilization

Pollen tube

Fertilization

Triple fusion

Double
ferti

① Germination of pollen grain

Stigmatic surface

PetuniaStroelitziaZea mays

Stigma

→ Sticky & oily exudate

(Stigmatic fluid)

Brassica → Stigmatic papillae (Melting
together reaction)

80 families → hydrophilic protein (Moist)
Hydration of pollen grain

Cleistogamous flower → germⁿ in Anther sac
Style, Petal.

Longevity of pollen (viable)

Reseda → 3 min

Zea mays → 5 min

Beta vulgaris → 2 hr

Secale cereale → 12 hr

Prunus padus → 15 days

Viola → 35 day

Primula → 56 day

Signature

Metabolism

High α -RNA / t-RNA ratio

acid/alkaline phosphatase

Amylase.

Cutinase. $\rightarrow$ cutin on stigmaNo. of
pollen tube

Usually monosiphonous (only 1 pollen tube)

But Polysiphonous CampanulaceaeCucurbitaceaeMalvaceaeAlthea rosea $\rightarrow$ 10 pollen tube.Malva neglecta $\rightarrow$ 14 " "

<u>Orchidaceae</u>	} Compd. pollen grain
<u>Asclepiadaceae</u>	
	Large no. of pollen tubes.

Amentiferae $\rightarrow$ Branched pollen tube**Pollen-Stigma interaction**

Recognition

rejection response.

② Growth of pollen tube

Style

Lilium/Ribes — Hollow style

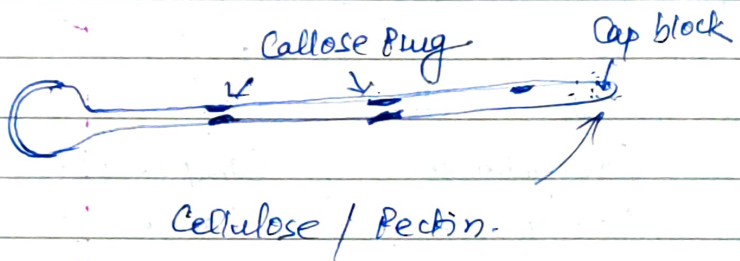
Mostly solid style ← Pectinase.

Oenothera

Petunia

Datura.

Inter cellular spaces



Chemotropic carbohydrate



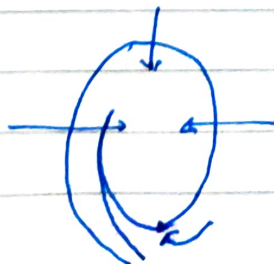
Filiform apparatus of Synergids

Entry of Pollen tube into Ovule.

1. Porogamy → Most Common

2. Chalazogamy — Betula, Juglans, Casuarina

3. Mesogamy → Cucurbita, Populus



Entry of Pollen tube in the Embryo sac

Pollen tube enters embryo sac through micropyle

↓
Synergids.

2 Male gamete → Polar nuclei
↓
Egg

Interval b/w Pollination & Fertilization.

2 hr to 12 days

X-bodies (vegetative cell nucleus)

Polyspermy

Heterofertilization