BREEDING METHOD OF EGYPTIAN COTTON VARIETIES

Presented
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Hybridization with pedigree method divided into three phases.

1- Crossing and selection of strains.
its beginning from crossing between parents to F5 generation.

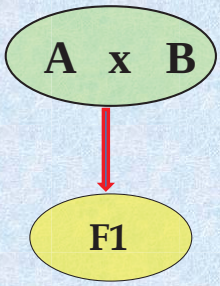
2- Testing and evaluation of selected strains in field trails at different locations.
its beginning from F6 to F10.

3- ISOLATED FIELD (New variety Nucleus)
Starting from F10 to introduce breeder seed

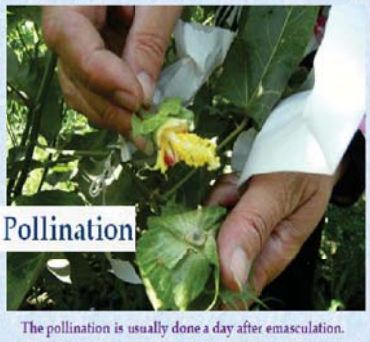
Phases one

Crossing and selection of strains.

Crossing between parents



Collecting seed cotton hybrid



The pollination is usually done a day after emasculation.

EMASCULATION

Corolla is removed **by** hand **or** cut away with scissors

The stamens are removed by forceps

The stamens are removed (stigma is clean)

emasculated stigma and stigma immediately enclosed.

The pollination is usually done a day after emasculation.

Pollination

The pollen grain will germinate after it is stuck to the stigma and form a pollen tube which extends through the tissue of the pistil

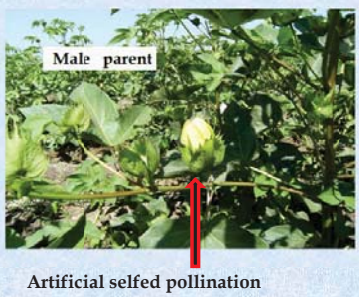
Once the pollen tube reaches the ovary fertilization can occur.

stigma immediately enclosed after pollination

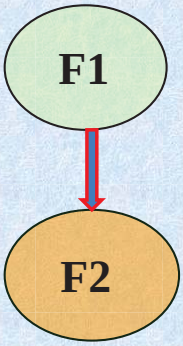
F1 generation

Planting hybrid seeds as individual plants (100 – 200 plants),

Harvesting selfed seeds only in Bulk

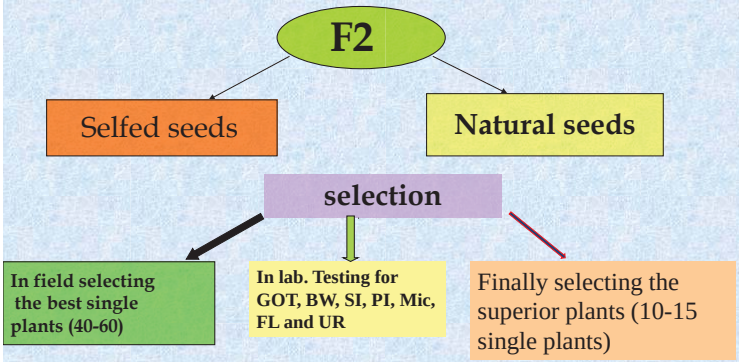


Artificial selfed pollination



F2 generation

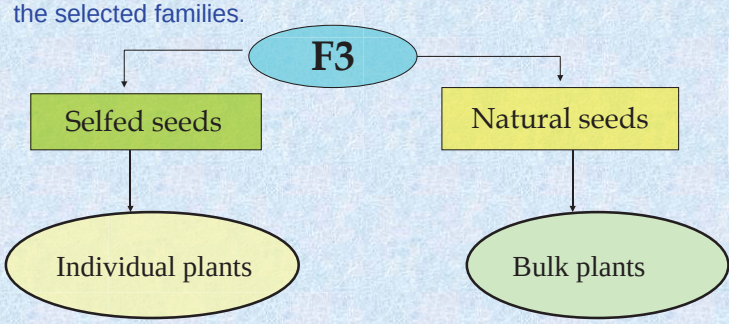
At nursery field: planting 500-1000 single plants, making artificial selfing pollination.



F3 generation

Selfed seed for each selected plant is sown as individual plants and natural seed for the same plant selected grown as a bulk family

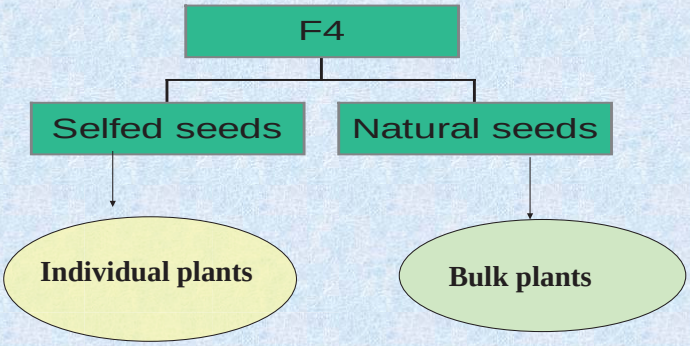
Selection process is done between families and thin within the selected families.



F4 generation

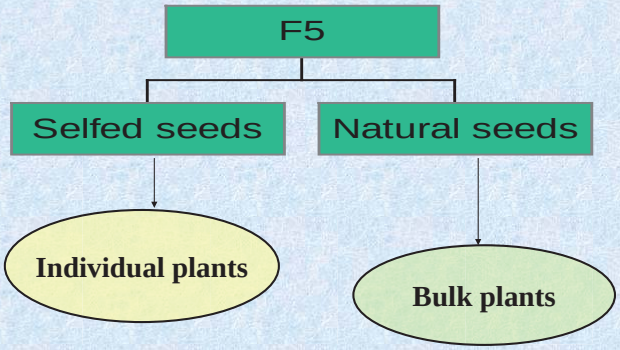
superior plants selected are grown at nursery field as F3 generation

selection process to reduce the number of families which have undesirable characters



F5 generation

F5 plants are grown as F3 and F4 with selection the best families and superior plants within these families.

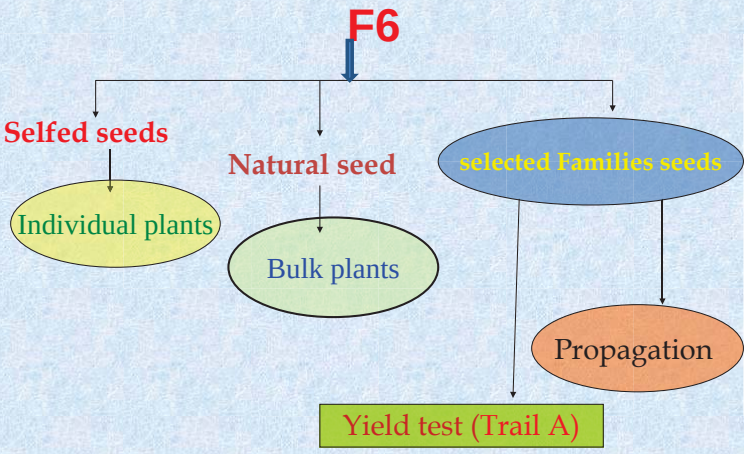


Phases two

Testing and evaluation of selected strains in field trail.

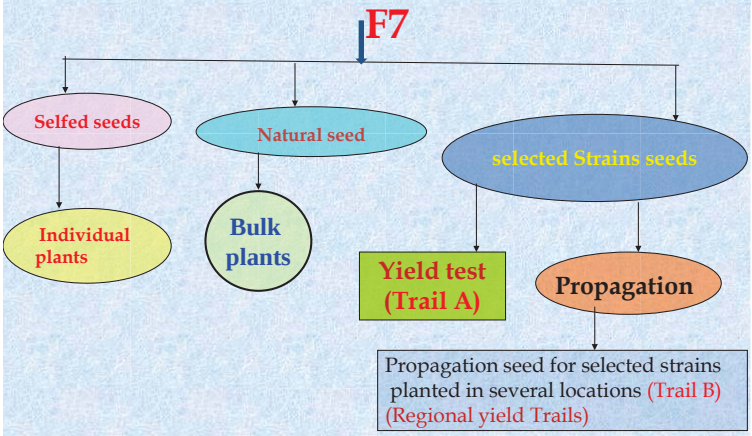
its beginning from F6 to F10.

F6 generation



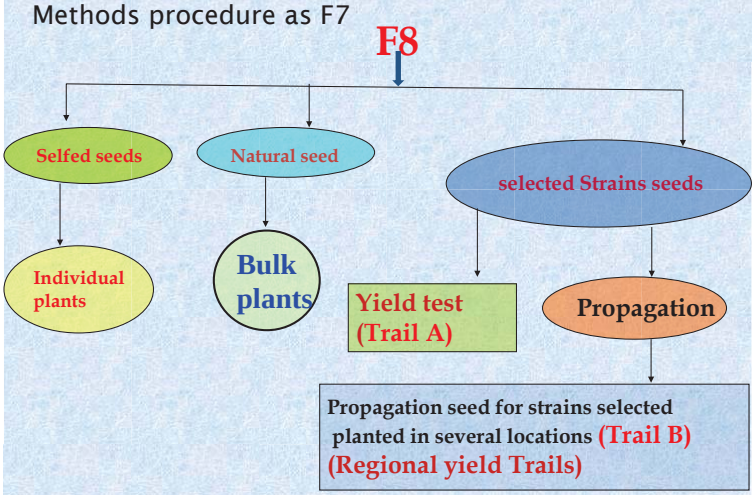
F7 generation

All levels of the breeding program are presented for all strains



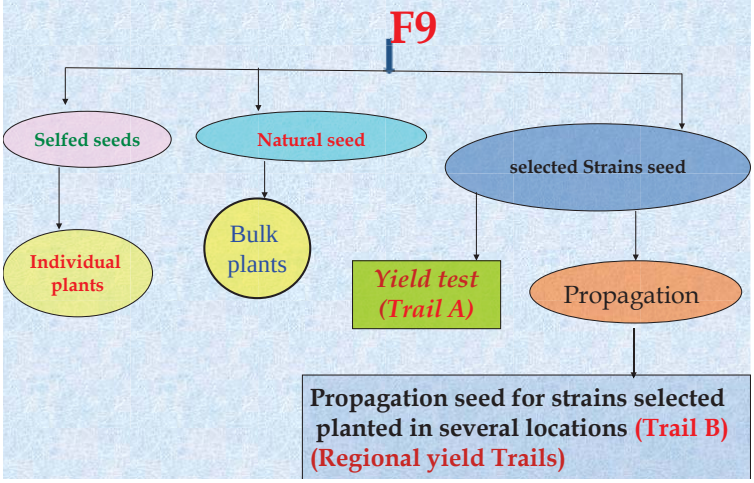
F8 generation

Methods procedure as F7



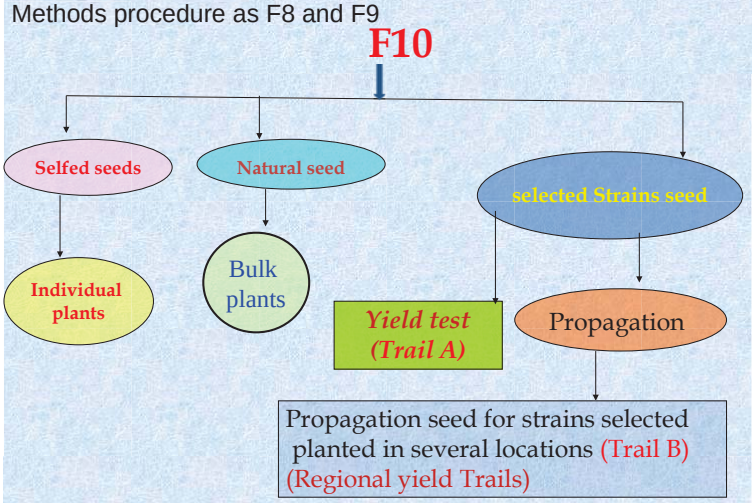
F9 generation

Methods procedure as F7 and F8



F10 generation

Methods procedure as F8 and F9



STAGE THREE

ISOLATED FIELD (Variety Nucleus)

Starting from F10 to introduce breeder seed

Isolated field for the new promising hybrid

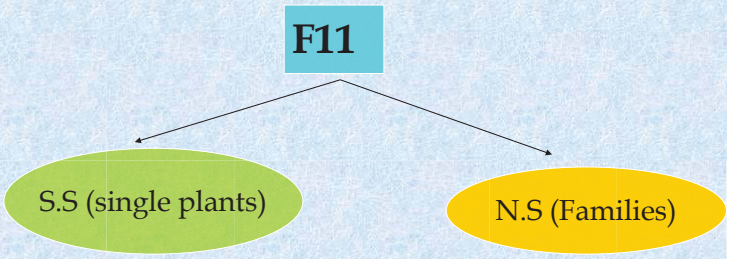
continue to long period nearly 5 - 6 years until

the breeder seed could be planting in 5000 Icar.

It's to be released as a new commercial variety

F11 generation

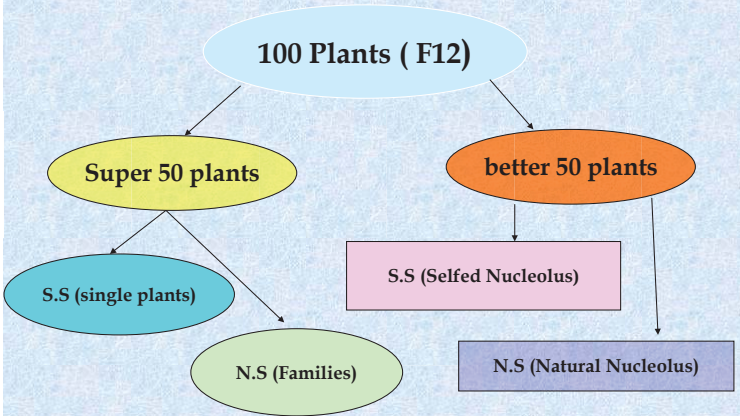
50 single plants selected from F9



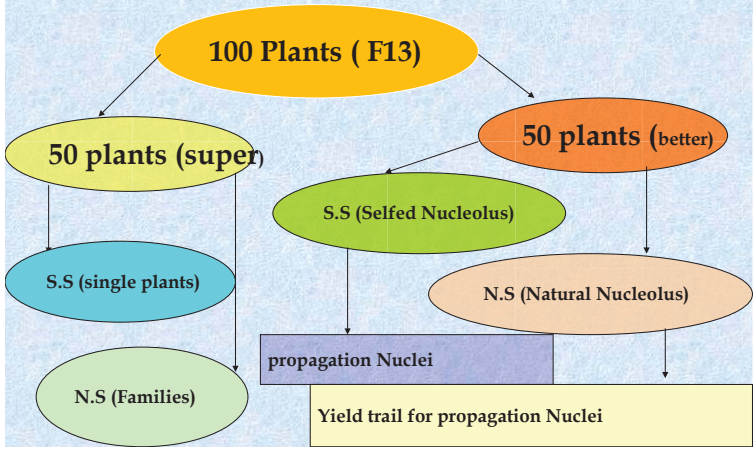
In isolated field Selection well be done between single plants
After Lab tests: selection well be done between families and single plants within families selected

F12 gneration

100 single plants selected from F11 and divided into two groups



F13 gneration



Breeder Seed

After lab tests of yield trial for propagation Nuclei, selection will be done of 4 – 6 Nucleus phenotypicaly which having the same uniformity for the characters

*- Mixing their seeds to make the first Nucleus (breeder seed).

F14 generation

As last field components growing breeder seed.