

# Seed production technology of cucurbitaceous

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## **Floral biology**

- Most of the cucurbits are monoecious in character and a few are dioecious
- Number of hermaphrodite and andromonoecious cultivars are also available in some crops
- Most of the cucurbits are cross pollinated crops
- Pollination is largely done by insects

## **Land Requirements**

- Land should be free of volunteer plants. Generally the soil should be well drained and aerated

➤ **Isolation**

Foundation – 1500 m      Certified – 1000 m

➤ **Season**

June – July & February-March

• **Seed rate**

2.5 kg / ha

➤ **Spacing**

Sow the seeds in the pit size of 45 x 45 x 45 cm at 2.5 x 2.0 m spacing

➤ **Female flower increase**

Spraying of ethrel 200-250 ppm at two leaf stage and after a week      of 1st  
spray

# Hybrid seed production

- Lack of standardized techniques for commercial seed production of hybrids is one of the major reasons that restrict the popularization of hybrid seeds.
- Production of hybrid seed of cucurbits needs some special considerations.
- Depending on the floral biology, one of the following methods can be followed for large scale hybrid seed production.
  - ❖ a. Picking of male flowers & artificial pollination
  - ❖ b. Picking of male flowers & insect pollination
  - ❖ c. Use of gynomonoecious lines (cucumber)
  - ❖ d. Use of male sterile lines (muskmelon, squash, pumpkin)

## **Field inspection and rouging**

- **Minimum of 3 field inspections**
  - before flowering
  - during flowering and at immature fruit stage
  - during mature fruit stage
- In case of hybrids, at least 4 field inspections are necessary
- Isolation, planting ratio, off-types, nicking of male buds in the seed parent block, ascertaining accuracy in emasculation or to check pollen shedding cymes in male sterile lines and to verify true fruit characteristics.
- **Maximum percentage of off types permitted**
  - foundation seed - 0.10%
  - certified seeds - 0.20%

## **Harvesting of the fruits at appropriate maturity stage should be done**

- In some cases one picking for consumption / commercial as fresh vegetable does not affect the ultimate seed yield but adds to the farmers income. Fruits of bottle gourd are ready for seed beyond the edible fruit maturity
  - ❖ Skin of bottle gourd becomes hard and colour changes to light brown or yellow at seed maturity
  - ❖ Colour of bitter gourd and snake gourd changes yellow / orange / red from green at maturity
  - ❖ In ash gourd white colour ashy coating and metallic sound indicates the maturity
  - ❖ In ribbed gourd, complete drying of fruits and turning of colour from green to brown

# Seed extraction

**Seed separated from the pulp by**

- Fermentation and repeated washings OR
- Mechanical OR
- Chemical methods OR
- Dry extraction method

## **Seed recovery**

➤	Bitter gourd	- 30%
➤	Snakegourd	- 15-16%
➤	Ribbed gourd	- 13-14%
➤	Ash gourd	- 1.0-1.3%

## **Drying**

- Drying is done to reduce the MC in the seed to safe limit because SMC affects the germination and storability.



## **Grading or size separation**

- Various equipments such as air-screen cleaners, gravity and indented cylinder separators, etc. are available in the market which can be taken up as per the requirements.
- Farmer can use even hand sieves for taking up the enterprise on a very small scale.
- Mostly 16/64” round perforated sieves are used for grading