

Seed Production in Okra & Onion

Dr. Praveen Kumar

Asst. Prof & Head

GPB, MSSSoA, CUTM

Bhindi

Floral biology

- Often cross pollinated crop
- Cross pollination to an extent of 12 % due to protogynous
- Anthesis is between 9 and 10 am
- Stigma remains receptive on the day of anthesis

Method of seed production

- ❖ Seed to seed
- ❖ Breeder seed → Foundation seed → Certified seed

Season

June-July, September- October and February- March

Land requirement

- Select field on which bhendi crop was not grown in the previous season, unless the crop was of the same variety and certified.
- Field should be free from wild bhendi (*Abelmoschus* sp.)

Isolation requirement

Foundation seed - 400 M

Certified seed - 200 M

Seed rate

Varieties : 8-10 kg/ha

Hybrids : Female - 4 kg/ha
Male - 1 kg/ha

- **Manuring**
- FYM - 12.5 t / ha
- NPK - 150:75:75 kg /ha
- 50% of N applied as top dressing in two split doses at flowering & 10 days later.
- **Hybrid seed production**
- Since the flowers are large in size, hand emasculation & pollination
- Emasculation & dusting - as per the methods in tomato
- Planting ratio - 9:1

Roguing

- Minimum of 3 inspections for varieties and 4 inspections for hybrids
1. Vegetative, 2 & 3. Flowering, 4. Fruit maturity stages
- Plant characters, hairiness, fruit character - colour, number of ridges, fruit length etc.
- Mosaic attacked plants
- Wild bhendi if present should be removed before flowering

Harvesting and threshing

- Fruits should be harvested when they dried (30-35 days after crossing)
- PM - Pods which expose hairline crack and turned in to brown colour - picked by hand
- Seeds - separated manually by split open / beaten with pliable stick
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- Then the seed are cleaned, dried and treated with captan/ thriam.

Onion: Seed To Seed Method

- A considerable amount of onion seed is produced by seed to seed method
- Which avoids the use of mother bulbs
- It is economical in the sense that production of seed takes only one year
- Large quantities of bulbs are not be stored, losses in stores are avoided and less cost of production by eliminating expenses on harvesting and replanting bulbs.
- Offers higher seed yield because of the greater number of plants and seed head per unit area
- Seed from seed to seed crop should not be used again for seed production because it is almost impossible to do completely satisfactory rouging

Bulb to seed method

- Mother bulbs are grown & are stored carefully till middle of October
- Temp. for storage 4.5 - 14°C because plants of such bulbs produce heavy yield than those bulbs which have been stored at higher or lower temp.
- Bulbs selected for replanting should have roots intact and free from disease, thin necked, single and true to type
- Bulbs should be treated with 2% systemic copper fungicide before planting.
- Too close planting may subject to the attack of downy mildew because ventilation around the plant is impeded
- Moreover planting distance depends upon the size of bulb

Season

Middle of June - Middle of July

Land requirement

Select fields in which an onion crop was not grown in the previous year, unless it was the same variety and was certified by the certification agency

Isolation requirement

Foundation seed - 1000 M

Certified seed - 500 M

Seed rate

5-6 kg / ha

Nursery

Treated seeds sown in raised nursery beds with the spacing of 5 cm at 2 cm depth.

Apply carbofuron @ 100g / cent before sowing

10-12 cent nursery area sufficient for one ha

Transplanting

Age - 30-35 days old seedlings transplanted during August

Spacing - 20 x 10 cm on both the sides of ridges.

Bulb lifting (Harvest) and Storage

- November – December
- Developed bulbs after 100-110 days (after transplanting) are carefully lifted with tops and allowed for aeration under shade with good aeration.
- Tops are removed after 2 days.
- Then the bulbs are stored for curing by spreading the bulbs in single layer under cool, dry and aerated places.

Planting bud for seed production

- December – January
- Stored seed bulbs are graded and the bulbs with 40-50 g are selected for planting.
- Small and very large size bulbs are rejected.
- Before planting, the 1/3 portion of the top of the bulbs are sharply cut and treated with Bavistin 0.2% solution for about 5 min.
- Cutting of bulbs will facilitate good and early germination and bolting.
- Bulbs planted with the spacing of 30 x 20 cm both the sides of ridges.

Flowering and seed maturity

- February – March
- Bolting (flowering) will start 40-45 days after bulb planting
- Seed matures after 120 days after planting.
- Normally 4-7 flower stalks will appear from one bulb.

Harvestin and Processing

- Maturity of seed indicated (April-May) by turning into black colour
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- Matured seed bunches are harvested before shattering & dried under shade
- Normally 2-3 harvests are required depends up on the maturity of the seed
- Harvest the seeds by cutting the seed head with 10-15 cm of stem attached
- Harvested umbels are heaped for a few days for drying before threshing. This helps in proper curing of seed
- Then the seeds are separated from the capsules by hand threshing or using pliable sticks
- Seeds are cleared, graded by using 10 x 10 BSS sieve, dried to 6-8 % MC and treated with captan or thiram @ 2-3 g/kg of seed.