AVRDC - The World Vegetable Center

Fact Sheet

Saving Seeds of the Cucumber Family

(Cucumber, Melon, Squash, Pumpkin and Gourd)

Production

The cucumber family (Cucurbitaceae), commonly referred to as 'cucurbits', includes cucumbers, melons, squashes, pumpkins, and gourds. They are all warm season crops and very susceptible to frost. Many cucurbits are susceptible to foliar diseases that attack plants during periods of high humidity and rainfall. Therefore, regions having high temperatures and low humidity are ideal for the production of cucurbit seeds.

Isolation

Most cucurbit plants produce separate male and female flowers on the same plant. Female flowers can be identified by locating the ovary (a small looking cucumber, melon, gourd, etc.) at the base of the flower (Fig. 1). The flowers are insect-pollinated, and easily cross within species. However, seed savers can grow more than one variety at a time in a single location by using hand pollinating techniques:

Hand pollination. Cap or bag female and male flower buds on the same plant or nearby plant of the same variety. Then select male flowers when they bloom, turn over their petals to expose their anthers, and gently roll the anthers over the stigma of the just bloomed female flowers (Fig. 3); you can see a layer

Figs. 1, 2. Female (left) and male (right) flowers of squash

Figs. 3, 4. Pollen on anther of male flower is rolled onto stigma of female flower (left) and the female flower is bagged (right)

of pollen has been transferred on the stigma. After pollination, cap or bag the female flower again to exclude insects (Fig. 4). Mark the pollinated female flower by wrapping a string to the pedicel.

Selection

Select early flowering, vigorous plants. Hand-pollinate the female flowers located 10–20 nodes from the base of the plant. Remove any deformed fruits.

Harvesting

The fruits should be left to fully ripen and turn color. The fruits of luffa and bottle gourd should be left on the plant until they dry (Fig. 5). For cucumbers, fruits will turn brownish color (Fig. 6). Bitter gourd fruits will turn orange. Some wax gourds will be covered with a pale-white powdery wax on the surface of the

Fig. 5. Mature luffa gourd fruits

Fig. 6. Mature cucumber fruits

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tel: (886-6) 583-7801; fax: (886-6) 583-0009; email: avrdcbox@avrdc.org; web: www.avrdc.org

fruit. After harvest, the fruits can be kept in a shed for a couple of weeks to allow the seed to further ripen.

Processing

For 'wet seeds' such as cucumber, wax gourd, bitter gourd and melons, cut the fruit lengthwise and scrape seeds out with a spoon (Fig. 7). Allow seeds and the jelly-like surrounding liquid to sit in a container at room temperature for 1–2 days (Fig. 8). Fungus may start to form on top. Stir daily. The jelly will dissolve and good seeds will sink to bottom while remaining debris and immature seeds can be rinsed away. Spread seeds on a paper towel or screen until dry.

For 'dry seeds' such as luffa and bottle gourd, keep the seeds in the fruit until they naturally separate from the flesh. This can be identified when you shake the fruit, the sound of seeds moving inside is heard. Cut off the bottom of the fruit and shake the seeds out, winnow to clean the remaining chaff, then place the seed on a screen for further drying before storage.

Storage

Dried seeds can be safely stored for at least three years. Place seeds in jars, manila envelopes, cloth or mesh bags, plastic containers, or foil envelopes. The best containers are air-tight, such as a sealed glass jar, metal can, or foil envelope. Protect seed from sunlight.

Store seeds in a cool (below 15 °C is ideal), dry location. Place the seeds in a refrigerator for long-term storage. For short-term storage, keep the seeds in a cool, shady and dry place.

Figs. 7–8. Wet seed extraction (left) and fermenting seed (right)

References

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