Cucurbit Hand Pollination Directions

1. Cucurbits have imperfect flowers, or in other words, they have male and female flowers in separate locations. They rely on bees and other insects to pollinate them and will readily cross pollinate between varieties.

2. Make sure you can tell the difference between male and female flowers. Female flowers have a large ovum at the base that looks like a very small fruit, while males lack this feature (Picture C). Males produce the pollen on their anthers, while females receive the pollen on their stigmas. Once on the stigma, the pollen fertilizes the ovules prompting a fruit to develop.

3. In late afternoon, identify male and female flowers that will open the following morning. Flower petals tend to be greener when younger, but get more yellow on their petal tips before opening. Identifying flowers that will open the next day may take some trial and error, but over time you will get the hang of it.

4. Tape the flowers closed to hold the petals shut and prevent bees from entering and cross pollinating (picture B). Blue painters tape works best but regular masking tape will work too. If possible tape 2-3 males for one female – having more male flowers to pollinate one female flower ensures an adequate amount of pollen, and if the males are from different plants but the same variety, it increases genetic diversity within each fruit.

5. Place a stake or flag next to the taped flowers to make it easy to find them the next day. Other methods may be used as well, just remember that it’s always harder to find your taped flowers than you think.


7. Early the next morning while temperatures are still reasonably low, relocate your taped flowers (if your flower petals are wilted you are already too late and the pollen is no longer viable).

8. Remove the tape and petals from the male flowers, exposing the pollen laden Anthers in the process.

9. Gently remove the tape from the female flower.

10. Use the Anther like a brush and brush the pollen from the male flower onto the stigma of the female flower (picture D). If you have sufficient male flowers to use more than one male for each female flower, repeat this process for each male.

11. Once the pollen has been brushed onto the stigma, carefully re-tape the female flower petals closed to prevent bees from entering and cross-pollinating your female. If handled too roughly the petals or the whole fruit may break off, and the pollination will be lost.

12. Tie surveyors tape around the stem to mark that this female has been hand pollinated. Other methods may be used to mark hand pollinated fruits, but make sure you know hand pollinated versus open pollinated fruits. Saving seed from open pollinated fruits (even if they look the same as the hand pollinated ones) could lead to dramatically different fruits in future generations.

13. Repeat. Keep in mind that the success rate for hand pollinations is around 50% for experienced hand pollinators. So do at least twice as many pollinations as the number of fruit desired.