

Squash pollination guidelines

(Title amended for use on SF Community Garden information webpage)

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In late summer, I often get calls about oddly shaped or colored gourds, pumpkins, squash, and other members of the cucurbit family. Some people want to know what they are. Others want to know if they are edible. Regardless, these odd fruits are typically the result of the cross-pollination of two members of the cucurbit family from the previous season.

The cucurbit family of plants (Cucurbitaceae) is a very large family of plants, with 95 named genus and 965 known species within those genera. As the science of genetics gets more sophisticated, we are learning that some of the species we thought were closely related are not, so the categories the various plants fit into have been changing frequently. As you will see, the categorizing of the plants in the family can be quite complicated, but it is necessary to understand how the various plants fit into the family to know what can cross with what!

Most of the Cucurbitae family of plants that humans cultivate come from 3 genera: Cucurbita, Citrillus, and Cucumis. Focusing on the Cucurbita genus, there 4 groups of primary interest:

The maxima species, which contains winter squash, buttercup squash, banana squash, and some pumpkins.

The argyrosperma species (formerly known as mixta), which contains the cushaw pumpkin.

The moschato species, which is the butternut squash group

The pepo species, is a large group containing summer squash, acorn squash, most of the pumpkins, zucchini and spaghetti squash. To add to the confusion, gourds, a general term used to describe many of the hard-shelled fruit in the Cucurbita genus, may be members of the maxima, argyrosperma, and moschato species. Yes, it is complicated!

Most of the oddly shaped or off-color fruit is the result of cross-pollination that can occur between some members of the 4 species named above. All members within a species can cross with each other, so buttercup squash and banana squash, both members of the maxima species, can freely cross-pollinate. Likewise, summer squash and most pumpkins can cross-pollinate, because they are in the pepo species.

Complicating things further, some of these 4 species can cross with other species within the Cucurbita genus. For instance, pepo can cross with argyrosperma and moschato, and moschato will cross with maxima.

When these cross-species pollinations occur within the Cucurbitae genus, it does not affect the taste or shape of this year's fruit! The seeds within the cross-pollinated plants, if left in the garden or saved as seed, may sprout next season, and that is when the newly combined genetics will show themselves with weird shapes, warts on the fruit, or odd color patterns. Rarely do these plants produce something that is enjoyable to eat, but they can be interesting to look at and speculate about.

There are several popular members of the cucurbit family I have not covered yet. Watermelons are in the Citrillus genus, and they do not readily cross with others in the family.

Members of the Cucumis genus, which includes cucumbers (Cucumis sativus), and the Cucumis melo species (muskmelon and honeydew) cannot cross within the genus. However, within the melo species, the muskmelons and honeydews are capable of cross-pollinating.

To sum it all up, if a bee carries pollen from a muskmelon to a honeydew melon, the result will be a perfectly normal-looking and normal-tasting honeydew melon. If you were to save the seeds from the crossed melon and plant those seeds, the result would be neither a honeydew nor a muskmelon, but a new melon that has a million-to-one shot at tasting good. This is why saving seeds from hybrid varieties is not recommended.

— Jeff Burbrink, Extension Educator, Purdue Extension Elkhart County