

## SAVING SEED AND CROSS POLLINATION

By: Kelly Feehan, Extension Educator

For Release: Week of October 10, 2022

This is the time of year when people ask about saving seed from vegetable gardens to plant next spring. This is recommended only with open-pollinated vegetables as their seed genetics are more stable.

A concern with saving seed is if a plant cross pollinates with another plant and seed genetics change. This can result in an odd-shaped, colored or flavored fruit the next season. Or an off-tasting or odd-shaped root or leaves. Saving seed from year to year may also increase disease issues.

The fruit is most affected. The fruit of a plant is the part that contains seed. With vegetables, snap beans, cucumbers, squash, peppers and so on are fruits. If the vegetable being eaten contains seed, the part of the plant being eaten is the fruit as opposed to carrot roots, broccoli flowers or lettuce leaves.

Vegetables are classified as open or self-pollinated, wind pollinated or insect pollinated. Only seed from self-pollinating vegetables are recommended for saving. Wind and insect pollinated vegetables are more likely to out-cross.

Cross pollination does not affect this year's fruit, but it affects seed genetics. It is okay to plant vegetables that can cross near one another, but if seed is saved and planted the next year, odd produce can develop.

Cross pollination occurs between varieties and between some vegetables within the same family. Melons can cross with other types of melons but not with peppers or squash. Some squash, pumpkins and gourds can cross with one another but not with corn or eggplant.

Common self-pollinating vegetables are tomatoes, beans, peas and lettuce. Part of the reason is they have complete flowers. The pistil (female portion made up of the stigma, style and ovary) and the stamen (male portion made up of pollen, anthers and filaments) are found within the same flower.

Open-pollinated vegetables tend to have little out-crossing. However, if different varieties or plants in the same family are planted too close together, crossing could occur. While these plants do not need insects for pollination, insects will visit them while foraging and carry pollen between plants.

If you plan to save seed from open-pollinated vegetables, avoid planting different varieties next to one another. Ideally, plant a slightly taller plant between the different varieties or even related vegetables.

Wind pollinated vegetables include corn, beets, Swiss chard and spinach. With the last three crops, these are not often left to bloom and produce seed since we eat the roots and leaves. Only crop seed producers need to be concerned about cross pollination.

Since we eat sweet corn seed, this is one vegetable where cross pollination affects the current year's crop as well as seed genetics. Sweet corn pollinated by field or ornamental corn may not be as tasty. Isolation by using distance is recommended for sweet corn.

Many vegetables are insect pollinated. Some of these have incomplete flowers. The flowers on the plant are either pistillate (female) or staminate (male) and insects are needed to transfer pollen from stamens to pistils.

Pollinators visit many plants as they forage and the risk of cross pollination is high with insect pollinated plants. Avoid saving seed from these vegetables.

Seed from hybrid varieties should also not be saved. Hybrids are the result of a series of crosses between related plants to obtain desirable traits such as disease resistance. If seed is saved, genetics are likely to revert back to one of the parents or grandparents.