



Seed buying 201: Seed Questions Answered

We had a positive response to [Seed Buying 101—A Gardener's Glossary](#). Here are more answers from our expert seed breeders and marketers.

1. What is an heirloom seed variety?

The definition: Simply put, an heirloom is an *Open Pollinated* (see explanation of OP) variety that has been in cultivation for 50 years or more. Over time, a variety becomes adapted to a particular set of climate and soil conditions. And this gets to the very core of an heirloom plant's merits: heirloom varieties persisted because gardeners grew them successfully and shared seed within their gardening networks. In today's world, seed production companies produce seeds of heirloom varieties in great quantities for the retail packet market.

Are heirlooms really tastier and easier to grow? This depends on their origins. One common strain of the famous 'Brandywine' tomato came from an Ohio farm where summers are hot and humid. 'Waltham' butternut squash originated in Waltham, Massachusetts. These favorites will live up to their reputations for flavor in regions where growing conditions are similar to their home towns. But if conditions are *not* similar, can their merits be counted on? The answer is, not always. In a location with cool summer nights, for example, 'Brandywine' might not be a winner at all for production or flavor.



Heirloom vegetables often have unique colors, flavors, and shapes.

2. What is a hybrid seed variety?

Time-tested breeding method: Hybrids have been around for many generations. They can and do occur in some species (roses, for example) without any human help. Gregor Mendel, of Austria, began experimenting with controlled hybridization in the mid-19th century and the rest, as they say, is history. Hybrids of all kinds are available to both commercial growers and gardeners today.



'Super Bush' hybrid tomato was bred to be compact.

Why choose hybrids? Plants are bred with specific objectives in mind. A tomato breeder, for example, might have goals of improved disease resistance, early maturity, or better color. A breeder will select two specific varieties with traits that match the objectives, and cross-pollinate them to create an F1 (first generation) hybrid. This process of controlled pollination and selection takes time and money, which explains why hybrid seed costs more than open-pollinated seed. Many hybrids bred for specific goals are now used in commercial vegetable production.

Can you plant seeds saved from hybrid plants? Hybrid plants produce viable seed that can be planted like any other garden seed.* But the results of planting seeds taken from hybrid plants will be unpredictable because in many cases, the seeds will produce plants unlike the plant they were saved from. The only way to maintain the traits of the F1 hybrid is to cross the original two parent strains again, which is what seed production companies do to produce hybrid seed every year.

*With a few exceptions (seedless watermelons, for example)

3. What is an Open Pollinated or “OP” seed variety?

To answer this, a little plant anatomy is needed: Plants produce flowers that are either *perfect*, with male and female parts in the same flower, or *imperfect*, with male and female parts on different flowers or even different plants. Regardless, the pollen must be transferred from the male organ of the flower to the female organ in order for seeds to form. This can happen by wind or with the help of pollinating insects like bees. In some cases—lima beans are one example—pollen is shed directly from the male to the female part within a flower, with no assistance at all.



When tomato flowers are shaken by wind or bumblebees, their pollen lands on and fertilizes the female part of the same flower.

The OP advantage: When you save seed from an open pollinated plant and sow it the following year, the characteristics of the plant and its fruit will remain the same, or “come true,” unlike with an F1 hybrid. But there is a catch. If a bee were to transfer pollen from another variety of your plant to

your desired variety, the two varieties may “cross pollinate,” causing the next generation to have a different color, shape, or flavor from the current one. Commercial seed producers and home seed savers carefully isolate OP varieties to prevent unwanted cross-pollination.



Bees carry pollen from one variety of squash to another, cross-pollinating them.

Saving OP seed takes a little knowledge. Preventing cross-pollination isn’t at all complicated but needs to be done, particularly with plants that have separate male and female flowers, such as melons and squash. To learn more about seed saving, consult the Seed Saving Resources at websites like www.seedsavers.org, or books such as Seed to Seed, by Suzanne Ashworth or The New Seed Starters Handbook, by Nancy Bubel.

4. How can I know if the seeds I buy are organic?

Organic vs. Certified Organic. For many years the word “organic” loosely referred to crops produced without synthetic pesticides or fertilizers, but there was no uniform standard or inspection process. In 2002, the USDA established the National Organic Program (NOP), setting strict national standards for the term “Certified Organic.” Certified Organic food crops, seeds, and farms must be managed according to an Organic System Plan approved by the USDA, and regularly inspected by a USDA accredited certifier. To find seeds and produce grown under these national standards, always look for the USDA Organic symbol.



Can I have an organic garden if I don’t use Certified Organic seeds? YES. In your own garden, you want a safe environment with healthy and nutritious plants. You can achieve this with or without Certified Organic seed. Maintain healthy soil, follow effective organic gardening techniques, and, when necessary, use Certified Organic fertilizers. If problems arise, look for the many non-toxic alternatives to chemical pest and disease controls. These safe products are now commercially available at good garden centers nationwide. Unless seed is specifically labeled as “treated” (very rare in the home garden seed market) it has not been treated with pesticides or fungicides.

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