DIFFERENCES BETWEEN OPEN POLLINATED AND F1 HYBRID VARIETIES

The very best growers out there know there isn’t just one right way to grow.

Over the centuries spanning the seed industry’s entire history, the most successful seed breeders have known this, too. In fact, the earliest seed variety developers were originally growers in and of themselves—whether of food, flowers, grasses, and much more.

*Thriving and diverse seed industries today—both domestic and international—have built their very foundations on this universal fact known among farmers: that successful growing on many different treks requires many different approaches.*

We here at Westar take pride in this knowledge and history ourselves. Whether you’re a large-scale conventional grower or a small organic gardener, you know your path to a successful season will likely be different from others in your field.

That even goes from large grower to grower, and small gardener to gardener. It also applies to every tiny aspect of one’s business—including what types of seeds you use.

DIFFERENT SEED TYPES FOR DIFFERENT WAYS TO GROW

To match the farming world’s versatile ways of growing, the seed industry has developed many varieties of seed to match. These types range from all-natural, pure-bred pedigreed heirloom varieties to amazing cross-breeds and hybrids.

Desirable traits for beauty, color, rigor, and adaptability have been captured in some of today’s most well-loved seed strains. Yet the way that these traits are refined and ensured in commercial seed can involve very different techniques in and of themselves.

Though there’s many ways to develop and save new seeds, two of the most common types of seed breeding techniques—and the two major seed types we have here at Westar—are open pollinated seeds and F1 hybrids.

OPEN POLLINATED SEEDS

Long considered the most natural type of seed on the market, open pollinated varieties are comprised of seeds developed through their natural breeding processes—and with minimal interference from breeders.

Being called “open” means these varieties openly receive pollen from other compatible varieties nearby, or which can self-seed of their own accord if self-pollinating. Breeders may step in and choose which plants their stock can cross-breed with to obtain certain traits, as is the case with certain cross-pollinated open varieties.

*These open pollinated strains, for the most part, are purebred—and some even have a pedigree going way back, which can make some of these breeds “heirloom” varieties.*
All strains considered heirloom varieties are open pollinated varieties, though not all open pollinated varieties can be called heirlooms.

**F1 HYBRID SEEDS**

F1 hybrids are more artificially-bred seed strains compared to open pollinated seeds.

“F1” describes the first generation of offspring and seed from two individuals of two very different plant varieties, or even plant species. In some cases, these might be two breeds of plants that wouldn’t have crossed otherwise.

*The result: a new generation of seeds featuring very specialized traits, hand-picked through careful selection by the seed breeder.*

Beyond the advantages of more “control” over the bred-in traits, F1 hybrid seeds—as the result of the cross—typically yield plants that are almost identical, with very little genetic variation and a lot of predictability.

The result: very specific and very advantageous traits that could not be possible in open pollinated varieties. What’s more, there’s a much smaller chance of getting weak or unsuccessful individuals from F1’s, since the cross breeds an almost entirely genetically similar seed generation.

**WHY DO WE HAVE DIFFERENT VARIETIES OF SEEDS?**

Both open pollinated and F1 hybrids are great separate approaches to developing new, robust, and highly adaptable seed strains.

*But the real question is: why do we need two separate ways to come up with great new seeds?*

*The answer ultimately comes down to the grower and their needs.*

While both approaches to seed-breeding clearly have their advantages, there can also be disadvantages to either seed type when you move beyond its theory to the actual practice of growing it. Heirloom and open pollinated seeds may work for certain growers, for example, but not for others—and vice versa with F1 hybrids.

That’s why it can’t truly be said that one type is better than the other. It really depends on how you grow, and the nature of your business and needs—and especially your growing techniques and the markets you are trying to reach.

**OPEN POLLINATED: MEETING NEEDS OF SMALLER MARKETS**

What instances better call for open pollinated seed varieties?

Open pollinated seeds—including heirloom varieties—tend to have a better appeal to small farmers and gardeners due to their genetic diversity, though not always.
For that matter too, some signature open pollinated traits simply can’t be captured by hybrid crossings, and thus retain special charm and significance for growers. The fact that they’re quite “natural” lends them quite a bit of popularity, too.

While growing actual open pollinated seeds and heirlooms poses challenges for growers meeting large market demands, they nonetheless are enduring favorites among home gardeners and small farmers.

Their genetic variability, which can create some degree of unpredictability through the growing season, are still a huge draw for growers who want to stick to the classic, time-honored tradition of saving seed from one’s crop the year previous—and perhaps even come up with new varieties of their very own.

Here are the pros and cons of open pollinated varieties:

**Pros:**

- More natural method of seed breeding
- Maintains heirloom varieties that have significant cultural or other value
- More genetic diversity in each seed
- Seed from these varieties can be saved and replanted by growers, and can even lead to new desirable varieties

**Cons:**

- More diversity means less predictable seed—different sizes and maturity times
- Yields both strong and weak individuals from seed stock
- Process of coming up with specific strong or new varieties takes more time
- Controlling genetics when producing open pollinated seed is more challenging

**F1 HYBRIDS: FOR LARGER OPERATIONS AND MECHANIZATION**

On the other hand, F1 hybrids may have a wider appeal—and particularly for large market farmers and operators aiming to produce as much crop as efficiently and successfully as they possibly can.

*But why would F1’s be more advantageous in those settings? It’s because F1’s, due to their almost identical genetics in one single generation, produce almost completely identical plants.*

For small farmers and gardeners, the advantages to this might not seem obvious. Plants of different sizes, and which reach harvest point at different times as well, don’t create challenges—and in fact, can make desirable harvests possible for longer throughout the season.
For much larger growers however—and especially those who employ mechanized agriculture—the attractiveness of seed that grows plants of the exact same size, and which all mature at the exact same time, holds a lot more promise for productivity and profit.

*Why? Because the plant uniformity of F1 hybrids means minimization of crop loss and damage, while improving efficiency and boosting profit without any more work.*

It’s true that seed from F1’s cannot be saved or used to get those crops again, nor do F1’s hold the appeal of being natural of culturally significant.

Regardless, they are one of the most natural seed strain development methods that can better serve larger agricultural operations and maximize their profits, and without being genetically modified at all.

**Pros:**

- More predictable seed due to genetic similarity from seed to seed
- Yields only strong individuals with desired traits due to similar seeds
- F1’s yield immediate improvements in their first generation
- Controlling F1’s genetics, in most cases, can be easier and less costly

**Cons:**

- Less natural method of seed breeding
- Seed breeds many not have significant cultural value, aren’t heirlooms
- No genetic diversity in seed, all seeds mostly the same
- Saving seed from these types (especially self-pollinators) not strong or reliable

**WHICH VARIETY SHOULD YOU CHOOSE?**

The pros and cons of open pollinated vs. F1 hybrid seeds suit certain growers, while they may not favor others.

With the advantages and disadvantages of both laid side-by-side, which type of seed will you choose to grow? If you’re not sure, answering the following questions may be a big help to you before you decide your purchase and seed orders.

**SAVING YOUR OWN SEED? GO OPEN POLLINATED**

Small gardeners might show more favor towards open pollinated and even heirloom seeds for a few reasons.

*For one, you can save the seeds from these varieties and plant them again next year in your garden.*

You can also count on the fact that most of the seed saved will breed true, and yield strong plants again and again, season after season. Some very popular garden varieties are open pollinated or heirlooms, with very trademark appearances, sizes, and growing patterns.
Small farmers who also want to grow special diverse vegetable varieties, and who aren’t as focused on productivity and mechanization, may be drawn to open pollinated seeds to meet special market demands, too.

**NEED UNIFORMITY FOR MECHANIZATION? TRY F1 HYBRIDS**

For growers with a focus on optimum productivity, uniformity, and profits, F1 hybrids may have more allure.

Because F1 seeds tend to produce almost completely identical plants, harvesters and cultivators on tractors and other machinery are less likely to damage or mishandle crops. For that matter too, F1’s also all reach maturity and harvest peak at the same time, making them an excellent match for mechanization and rapid harvest all at once.

*While seed cannot be saved from these varieties, this is probably not a priority for larger growers and operators.*

Additionally, F1 hybrids may also contain traits that open pollinated varieties could not develop: such as chemical resistance, pest resistance, seedlessness, and more.

**SHOULD YOU CHOOSE PRICIER F1 SEEDS OVER OPEN POLLINATED?**

In some cases, F1 varieties are more expensive than open pollinated, though in other instances the inverse may be true.

If you’re trying to save money with the upcoming season’s seed order, which types of seed are truly worth the price? Is it more worth it to get the higher valued F1’s?

*Make sure to take a closer look at your growing needs. F1’s produce wonderful strains and are greatly matched to larger growing operations, though their higher price doesn’t necessarily translate to better value for small gardeners and market farmers.*

Then again, F1’s can competitively provide traits that open pollinated seeds cannot—though you won’t be able to save seed from them again year after year (thus why open pollinated seeds tend to be less expensive).

**ARE F1 HYBRIDS STRONGER & MORE RIGOROUS THAN HEIRLOOMS?**

Though F1 strains are priced higher on average than heirlooms, for some growers that doesn’t automatically mean you have stronger, better-matched plants for every situation.

In fact, F1 hybrids—especially if they are seed from self-pollinating plants, like and tomatoes and peas—are not necessarily more stronger and more adaptable than others of their species or variety. Rather, they have a very rigid set of characteristics that you can more reliably count on in any F1 hybrid seed stock you will buy.

*On the other hand, F1 hybrids among cross-pollinating plants can and do exhibit more adaptability and resilience, even in comparison to open pollinated plants of the same species or breed.*
This is due to “hybrid vigour,” a genetic occurrence that happens among cross-pollinating plants. This genetic phenomenon makes hybrid descendants in cross-pollinators much more robust when they’re allowed to have completely new genetics introduced into their lines.

**HOW WILL YOU GROW?**

F1 hybrids could prove to be well worth the higher price and more successful than open pollinated types. Then again, you’re not likely to get strong seed from F1’s, even when produced from cross-pollinators.

Or, you can pay much less for an open pollinated or heirloom seed variety, on the other hand, and get a more natural type of seed with stronger historical and cultural value—along with highly unique traits.

However, the genetics of the open pollinated seed you get may be less uniform and reliable. Still, this may not be an advantage that some gardeners and small farmers require.

*What you choose to grow depends on your priorities. Here at Westar, we honor every priority—and we know that the priorities of any one grower is hardly ever the same as another.*

We strive to provide all the very best choices of both open pollinated and F1 hybrid varieties, so we can best serve even the most unique needs of every grower, one customer at a time.