

Growing with the Flow: A World of New Tomato Options

AS THE EDIBLE TREND CONTINUES TO GROW, SO DO THE DEMANDS ON A BACKYARD FAVORITE: THE TOMATO.

By Carly Scaduto

It seems home gardeners want everything out of their home-grown tomato that their typical grocery tomato lacks – different colors, funky shapes and amazing taste, basically everything homegrown heirloom tomatoes are known for.

Today's tomato breeders often joke that you can't ship heirloom tomatoes from your backyard to your back door. That's because the unique taste is often genetically associated with poor shelf life. While the taste may be the biggest selling point of heirloom tomatoes, the poor disease resistance and plant durability pose challenges for the average home gardener.

For more than a decade, Monsanto's tomato breeders have worked to bring the home gardener the best of both worlds — the taste, shape and color appeal of heirloom tomatoes combined with the disease resistance and plant durability required to make them a success in the garden.

"What a lot of home gardeners don't know is that the funky colors and shapes that heirlooms are known for are actually natural genetic mutations," says Robbie Johnson, Seminis Home Garden business lead. "Some of our newer tomato hybrids with heirloom-like colors are actually derived from heirlooms, bringing in those natural mutations such as a bi-color yellow-orange flesh with a red inside."

'Tye-Dye' is one such tomato hybrid from Seminis Home Garden. The tomato breeder who developed it kept it very true to the heirloom rainbow it was derived from. "In addition to its unique color, it is a mildly sweet, very low acid round tomato," adds Johnson.

Seminis Home Garden is Monsanto's home garden seed brand. With 19 tomato breeders globally, Seminis Home Garden commercial tomato varieties

are available around the world for home gardeners. Monsanto tomato breeders also develop new hybrids to specifically meet the needs of home garden market.

But because these new heirloom-like tomatoes aren't actually heirlooms, some home gardeners are quick to turn a blind eye to them without even giving them a chance in their garden. For some, the idea of unchanged seeds that have been passed down from generation to generation is romantic. For others, the nostalgic taste isn't worth the growing challenges.

"We know the top thing home gardeners are looking for are plants that are easy to grow," says Johnson. "But that doesn't mean other important factors such as taste, color and shape have to be compromised." And thanks to a significantly improved breeding toolbox, today's tomato breeders can bring together many of the qualities home gardeners are looking for into the same tomato plant.

Better Breeding = Better Tomatoes

In the past, plant breeders were essentially blind to the inner workings of plants. To understand how desirable traits such as color were passed along from plant to plant, they used two parent plants to create an offspring plant. They then grew the seeds from the fruit of this plant and waited to see the results — a very time-consuming process. Today, breeders can now "see" inside the plants they intend to breed.

"Using a technique called marker-assisted breeding, our tomato breeders can examine the DNA of seeds to find the ones that have the desirable characteristics — such as disease resistance and color — that they are looking for," explains Johnson.

First, genetic markers are identified in plants'



DNA that are linked to important traits such as disease resistance, color, yield and taste. The markers are then used like a test to screen all of the parent plants available for breeding and accurately select and breed only the seeds that will produce plants with the desirable traits.

"This helps our plant breeders target several in-demand characteristics all at once, enabling us to bring new, unique tomato seeds to the home garden market faster," explains Johnson. "With these tools, our tomato breeders have the ability to make tomatoes that are both easy-to-grow and great tasting."

Unique-looking, great-tasting tomatoes that are easy to grow are sure to be quickly adopted, right? Unfortunately, this isn't always the case. "There is a lot of confusion over heirlooms, hybrids and even GMOs in the garden," says Johnson. "All the misinformation on the Web can detract home gardeners from being open-minded to new hybrids."

The industry needs to help the average home gardener better understand the benefits of hybrid tomatoes vs. heirlooms as well as correct the misconception that a hybrid is the same as a GMO. "There's been an increase in marketing non-GMO garden plants, which is a big reason why there is so much confusion," says Johnson. "Why not market the benefits of hybrid plants instead?"

A Flavorful Future

Monsanto recently collaborated with the University of Florida to profile the flavor for 150 different heirloom tomatoes and then understand what the genetic sources of those flavors were. "Through our research, we've learned that tomato flavor is a very complex thing. Sugars, acids and over 400 volatiles blend together to form unique tomato flavors," explains Johnson. "Our researchers are using that information to breed what we hope will be tomatoes that are as flavorful as or even more flavorful than the heirlooms profiled."

The Next Better Boy

Nostalgia for tomatoes grows beyond heirlooms. It's no surprise that many home gardeners plant the same classic varieties year after year. "Our top-selling home garden tomato seeds are 'Better Boy', 'Big Beef', 'Celeb-

rity', Burpee's 'Big Boy' and 'Beefmaster'," explains Johnson. "These are all classic choices that have been around for a while."

While these tomato varieties have proven successful in home gardens across the United States, there are new diseases that these varieties aren't

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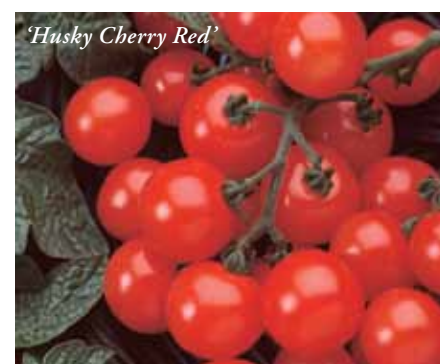
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protected against. “That’s why we are taking a close look at making these classic varieties even easier to grow,” says Johnson. “We see grafting as a great option for keeping these classic varieties true to their original form while improving their disease resistance.”

Compact Tomatoes: No Garden Required

Container gardening has been on the uptrend over the past five years and continues to grow in popularity, especially in urban areas where green space can be limited. Another focus for



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Seminis Home Garden is developing and offering compact tomato plants. “Just because they are using a smaller space to grow the plant doesn’t mean the fruit has to be small too,” explains Johnson. “For example, if container gardeners are looking for a compact plant that produces large and tasty tomatoes, they should try a new hybrid tomato variety called ‘Debut.’”

Container gardeners don’t have to sacrifice flavor for a more conveniently-grown plant either. “‘Husky Red’ is a medium-sized tomato hybrid that has great flavor. We have also developed a cherry tomato hybrid version called ‘Husky Cherry Red’ that has the potential to set lots of sweet, flavorful fruit,” adds Johnson.

Other compact hybrid tomato varieties include ‘Patio’, which produces about a 4-ounce tomato and a saladette tomato variety called ‘Yaqui’ that produces large-sized fruit. ☒

Carly Scaduto is vegetable communications manager with Seminis Home Garden. She can be reached at carly.a.scaduto@monsanto.com.

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