



Purple on Purpose

By Martin Král



Purple Tomato

At a dahlia show last year, as is common at such events, one of the exhibitors brought some home-grown tomatoes to share with others. One variety she mentioned was a new purple cherry “that cost me \$3 a seed,” she noted. I ate just one, noted its thicker skin and purple flesh throughout and then resolved to take another to collect seed from this oddball.

The Purple Tomato - actually, it's indigo and dark purple - was introduced in 2024 as a result of a 20-year hybridization effort by British biochemist Cathie Martin. Seeds sold by a small US firm took the tomato growers by storm, but that also engendered some controversy. This trade-marked cross was determined to be a GMO (genetically modified) tomato created from genetic isolation of dark tomato and purple snapdragon genes. Martin sought to develop a healthier tomato with great anthocyanin content. Such plant pigments hold considerable promise as having anti-oxidant and anti-inflammatory properties that also are useful in cancer prevention. Curious? [Learn more here.](#)

The seeds I planted this year developed into sturdy, heavily foliated plants bearing many clusters of indigo cherries that held their shape in storage but had soft purple fruit flesh. Tomato varieties are constantly being hybridized as their chromosome number ($2n=12$) favors that, much as polyploidy also has benefited dahlias. But this Purple is self-fertile, so its seeds remain truly inbred. Moreover, we already have several GMO crops in general marketplace distribution: some corn, potatoes, apples, squash, and pineapple varieties are GMO, with cornstarch, canola oil, and most soybean products listed as being modified. For a presentation of biofortified produce like Purple Tomato, [select this link](#)

“How does all this matter to dahlia growers,” you may ask. After all, we have great diversity in form and color already, with more being developed every season. The diploid nature of hybrid dahlias favors the kaleidoscope of flowers we encounter in gardens and in shows. Our testing and judging rigor selects the most promising candidates, and this selective breeding anoints varieties that meet the criteria. Yes, there are calls from growers for better tuber production, disease resistance, heavier blooming, longer vase life, and even sturdier stems. “Blue” and “black” dahlias are touted in catalogs, but none meet the eyeball test. Some want scented dahlias, then others bypass the panoply of bloom colors by still obsessing over blue flowers, perhaps with allusion to the 1946 film noir *The Blue Dahlia*.



Hollyhill Black Beauty



Blue Bayou

Oh well. Selective breeding won't get us there: The dahlia's anthocyanin pathway lacks the delphinidin compounds required for blue coloration but found in red or purple produce and fruits like blueberries. You must remember that all hybrid dahlias have their origins in just two of the 42+ wild dahlia species. I raise several of these; each has distinctive attributes. While the Dahlia Section with more than two dozen species is that dahlia genus' largest, after 240 years we are still at the beginning of our exploration. The section has a genetically complex identity with diploids of 32, 36, and even 64 chromosomes, so there is gene wealth galore. Only *D. merckii* is self-compatible, but getting its seed is a challenge. All commercial seed sellers need to make buyers aware of the dahlia's genetic peculiarity. Presently, vegetative propagation through tubers or cuttings is the only method of ensuring that treasured varieties truly continue in the marketplace. Genetic variation and inconsistent fidelity still can take place — demonstrably our experience with variegated and bicolored dahlias.

Our challenge for the next decades is to explore the compatibility of all Dahlia Section species with one another and with our garden hybrids. Who knows, maybe we can find disease- or virus-resistant ones! Species seeds need to be made more available for genetic experimentation. Maybe the ADS can oblige by contacting our Mexican dahlia friends engaged in scientific research. As genetic research pursues other avenues in the effort to meet our goals, maybe we find compatible genes in other plant classes for a specific outcome. Like a more fragrant blossom. Or a dahlia with true substance for days of indoor splendor. You still hanker for a blue dahlia? There you go: For more blue talk, [visit here](#).



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