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## **Beyond the vine: Breeding better grapes**

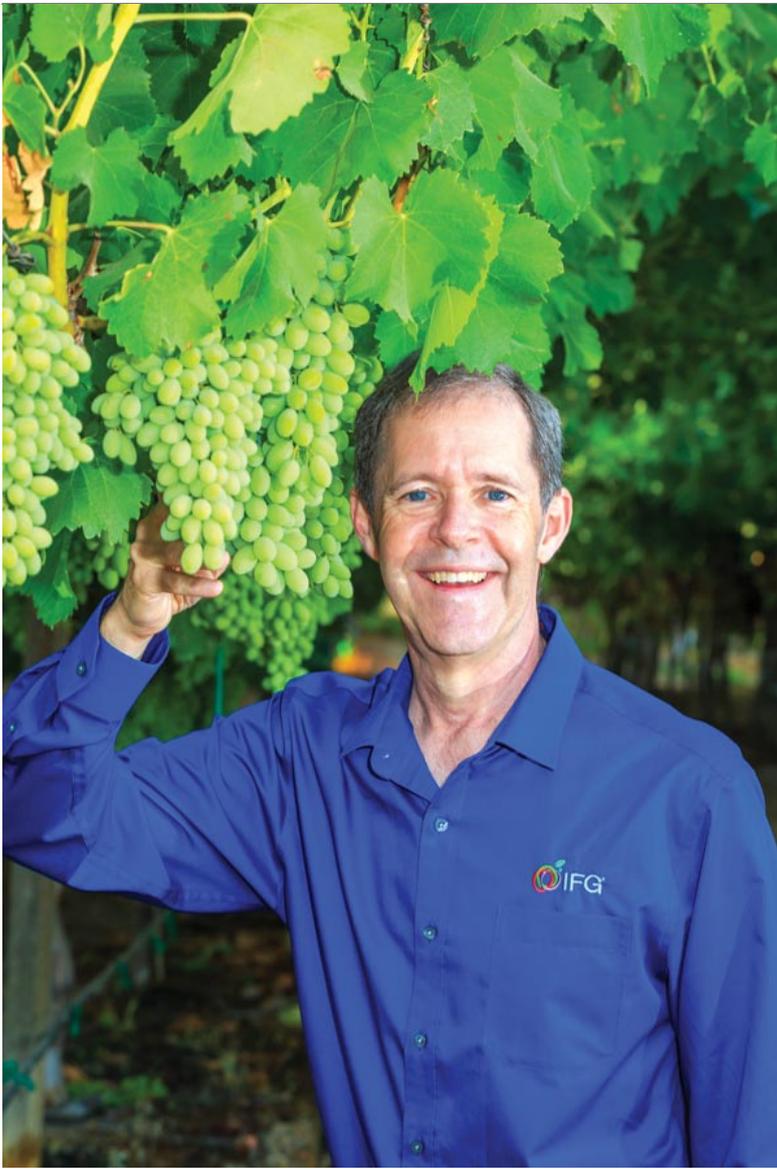
By

Andy Higgins, CEO of IFG

August 19, 2021

Last year, Mintel released its robust market research report on how today's consumers approach nutrition. Among various diet assessments, eating habits and affordability, the findings revealed that even the most discerning consumers valued taste above all. Providing consumers with an incredible eating experience is IFG's mission statement, which proves that we as innovative breeders are on the right path, based on Mintel's report.

With so many options in supermarkets today, most consumers have multiple brands to choose from that meet their nutritional and budgetary requirements. What Mintel's report does for us, however, is give consumer insight that supports why many fruit-breeding companies focus more on innovating new and diverse flavors to appeal to consumers' preferences. Buying fresh produce is high on the demand for consumers. Most importantly, the produce section provides consumers with more choices and inspiration to be creative by trying new textures, flavors, or recipes to feed themselves or their families. As a breeding company, we are focused on taking our consumers on that creative culinary journey, so they return to the store for more.



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Let's look at the table grape variety. The genera of grapes have tremendous genetic potential, even more so than many other classifications of fruits. They can be green, red, purple, white or black, and their taste profile can be endless. They can be eaten fresh off the vine, dried into raisins, or bought as fresh grapes from farm to table for lunch, snacks, or dessert every day of the year. Table grapes are grown in a multitude of regions globally and are typically seen in drier, warmer climates. Many growers are now growing grapes in regions that allow for 52-week production and providing consumers with a 52-week supply.

Natural, non-GMO breeding companies like IFG are on a quest to make fruit more flavorful, focusing on improving consumer experience and easing grower production. IFG's core values align with the other breeding companies. We aspire to create varieties with an explosion of flavor that enhances the consumer eating experience and embraces a passion for flavor with our growers and marketers. This harmonized approach to grape production means combining two other variables — the science of growing and using natural breeding practices, in addition to using art to create something unique and special.

IFG performs its work through natural practices but also includes modern techniques, such as embryo rescue. This is a highly specialized technique that involves pollinating an emasculated flower, then placing the immature seed in a special growing media and allowing the new embryo to grow. This is not genetic engineering, but simply a way breeders can ensure the table grape's seedless

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aspect. That does not make the process any less complicated. From germination to grocery-ready, naturally bred table grapes can take anywhere from eight to 12 years per variety. In a labor-intensive procedure, breeders take out baby embryos, place them in specialized cultures, then into a nursery, and then finally plant into a field. It is here in the lab where the real work begins. Through careful examination, breeders select the best blossoms and pollinate them with genetically desirable traits, such as color and texture. When the ideal creation has been fashioned, it is time to plant.

Of course, this experimentation results in some casualties. Fewer than 1 percent of the crosses that a breeder might make would result in a variety that would be interesting to the grower or consumers. Suppose a selection from that batch is desirable. In that case, the breeder will propagate it and plant several vines, testing out different pruning and growing methods to ensure the grapes develop in the most productive environment. In a few years, the vines will have produced enough fruit for evaluation. Breeders finally have an opportunity to taste these new adaptations and see if the new selections are up to the mark. The worthy ones are then run through rigorous trials, including testing of shipping and cold storage, shelf life, and of course, the ultimate test: desirability for the consumer. Much like a dating show, even the promising ones may not make it to the finale. Table grape varieties that pass all these tests and receive consumer favorability are most likely to be planted on a larger scale and distributed to more retailers.

Such an intensive process begs the question, "What is the perfect grape?" With so much category diversity, it is impossible to answer. Most breeders aim to create a table grape variety that fills a gap in the marketplace. For example, in the early 2000s, IFG began breeding for an ultra-sweet table grape variety, one that would rival a confectionary treat. By 2011, they launched the Cotton Candy table grape, a melt-in-your-mouth variety that tastes of toffee, with almost no tartness. This unique variety was a hit among consumers by allowing them to relive childhood days at the fair or circus.

Table grape breeding is not just about achieving new varieties and flavors. There are already dozens of table grape varieties, each with its own distinctive taste, aromas, texture, and nutritional characteristics. Natural breeding, at its purest, has the potential to reinvigorate the entire eating experience. Our emotional connection to food is deep and multifaceted. The human instinct to consume purely for fuel has long been phased out in favor of consuming for pleasure. Unexpected flavors, even in fruits as simple as the grape, have the potential to turn a simple meal into a powerful memory.

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