New hybrid plants could prompt more prodigious pepper production in Southwest

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By themselves or as an ingredient in a variety of foods, including salsa, America's top-selling condiment, peppers have found a warm spot in the hearts and stomachs of U.S. consumers.

But while U.S. Department of Agriculture figures show consumption of fresh peppers at an all-time high, only a fraction of these are grown domestically.

Currently more than 70 percent of all fresh peppers consumed in the U.S. are imported from Mexico, and another 18 percent are imported from Canada, according to USDA data.

"Ironically, our domestic fresh pepper production has been declining steadily in a region renowned for its love of peppers – the American Southwest," said Dr. Daniel Leskovar, a vegetable physiologist with Texas AgriLife Research.

To help Southwestern pepper producers perk up pepper production, Leskovar and other Texas A&M System scientists and agriculture experts have teamed up to develop several new adapted pepper plant hybrids.

Leskovar said U.S. fresh pepper production has declined significantly in the past decade due to global competition, labor issues, inconsistent market prices and inefficient agricultural practices.

"These factors, along with drought, plant disease and other challenges that are prevalent in the Southwest, have made it difficult for producers in Texas, Oklahoma, New Mexico and Arizona to grow peppers profitably," he said.

"Pepper production in the Southwest is often marred by drought, heat and plant diseases, which cause severe plant stress and reduce marketable yields by up to 50 percent," said Leskovar, who works at the Texas AgriLife Research and Extension Center in Uvalde.

Leskovar said that the objective of this research is to "maximize pepper production efficiency and improve the quality of specialty peppers so producers in these four states can increase their profitability."

"We developed several new cultivars that were more well adapted to climatic conditions and plant diseases of the Southwest and to U.S. consumer preferences," he said.

The team has already bred several new cultivars of jalapeno, serrano, Habanero, poblano ancho, bell and other fresh pepper plants.

"Most of the breeding and selection of these new pepper hybrids has been done in test plots at the Uvalde center," Leskovar said. "Uvalde is a good test area because the soil and climate are similar to many other parts of Texas and the Southwestern U.S. where peppers are now being grown."

"At the same time, we've been developing these cultivars to produce higher yields of peppers with the size, shape, color, capsaicin (the active "heat" ingredient) level and nutritional content American consumers want," said Dr. Kevin Crosby, a plant breeding expert with AgriLife Research in College Station and key team member.

Leskovar and Crosby are both affiliated with the Texas A&M Vegetable and Fruit Improvement Center, part of the university's department of horticultural sciences.

Crosby, who received national attention by developing a milder version of the notoriously hot Habanero pepper, said the new hybrids are meeting or exceeding expectations for appearance, yield and quality.

"These peppers not only look good, they taste great and the plants produce impressive amounts of fruit, all of which should please both the producer and the consumer," he said.

The team has established the first-known poblano pepper production in Texas through a partnership with San Antonio-based Constanzo Farms and is collaborating with other large producers in New Mexico and Arizona.

They have licensed two hot pepper cultivars in the past three years and have provided stock seed for commercial production, as well as providing large quantities of trial seed to pepper growers in Texas, New Mexico and Arizona.

Though some of the team's efforts began as far back as three years ago, "results have had to be replicable and it has taken time to conduct trials, collaborate with growers, packers and processors and retailers, and get their feedback," Leskovar said.

Along with cultivar development, the team also is investigating strategies for overcoming other challenges to Southwestern pepper production. Some of these include working with regional producers on more efficient irrigation and cropping techniques, and developing a cropping system more suitable to machine harvesting.

"After drought and disease, probably the biggest obstacle to pepper production in the Southwest is labor," Leskovar said. "Pepper harvesting is very labor-intensive because it's done almost exclusively by hand. And it's also difficult for producers to find adequate labor when it's needed."

The team already has tested numerous jalapeno, green chile and Habanero lines in Texas and New Mexico to determine suitability for machine harvesting."We've developed pepper plants that have less foliage, bear more fruit and require less labor-intensive harvest," Leskovar said.

He added that the new cultivars also are being bred for higher amounts of vitamin C, phytochemicals and antioxidants.

"Peppers are a good source of dietary fiber and contain a number of vitamins, minerals and other nutrients that are known to promote human health," Leskovar said. "And research on capsaicin, the ingredient that makes peppers hot, has shown it has some positive uses for human health and wellness."

According to the Agricultural Marketing Resource Center, capsaicin is already used as a "topical anti-arthritic and anti-inflammatory agent" and is "generally recognized as a powerful local stimulant with no narcotic effect."

Crosby added that increased domestic production of fresh peppers might help address another "health" issue – consumer concerns about product safety.

"Between high U.S. standards relating to product safety and the closer proximity of production to the point of use, consumers will be able to feel more secure about the fresh pepper product they're buying," he said.

"We're hoping our efforts will lead to a reduction in cost of production and an increase in the yield and quality of peppers so growers in the Southwest can remain competitive," Leskovar said. "Since people in the Southwestern U.S. consume such significant quantities of peppers, it seems only right that producers in the region should derive an economic benefit from supplying them."

Source: Texas A&M AgriLife Communications