# Texas A&M AgriLife turns up heat on hot pepper market

New hot pepper agronomic practices and technologies could help rejuvenate the U.S. market and help reduce production costs for producers.

Kevin Crosby, Ph.D., Texas A&M AgriLife Research professor with Texas A&M College of Agriculture and Life Sciences Department of Horticultural Sciences, Bryan-College Station, is leading a team to make this happen.

The team has received a $450,000 grant from the U.S. Department of Agriculture – Agricultural Marketing Service Specialty Crops Multi-State Program, USDA-AMS-SCMP, to develop novel solutions.

Implementing these solutions could help reverse a downward trend the U.S. hot pepper market has experienced in recent years due to foreign competition and concerns about production costs and food safety.

### REIGNITING THE U.S. HOT PEPPER MARKET

The hot pepper market is volatile, Crosby said. Environmental stressors can have major effects on yield, and Mexico's ability to supply year-round with low labor costs has caused a dependency on imports.

"When the cost of peppers is good, producers love to grow them. When it's bad, they don't. Harvesting is expensive, and producers can't compete with Mexico's prices," he said.

Additionally, food safety continues to be a concern, as peppers are susceptible to carrying and spreading potentially harmful pathogens.

"Produce grown in the U.S. could be unaffected by an outbreak, but bad press on imports or in international markets still affects public perception," Crosby said.

These obstacles have made many U.S. producers apprehensive about growing peppers, despite ideal growing climates in the Southwest and a rise in interest from specialty and niche markets.

But with the support from the USDA-AMS-SCMP, researchers and economists are teaming up to create a solution, identifying target windows in the market for production and sale, and developing new growing practices and cultivars that will give U.S. producers an edge on the competition.

### AG IS THE SOLUTION

Photo of a hand holding three red hot peppersAgriLife Research scientists explore ways to create tiered levels of spiciness in new pepper cultivars. Photo by Kevin Crosby, Ph.D.

To address producers' apprehension, researchers are testing new growing techniques that could help pepper plants withstand extreme heat and changing climates in the Southwest.

They are also developing cultivars with unique traits that will be exclusive to U.S. producers. For instance, they're studying potential for new habanero cultivars with different levels of spiciness and higher amounts of capsiate – a non-spicy, beneficial phytochemical.

"Habanero peppers grow extremely well in Texas, and creating tiered levels of spiciness – mild, medium and hot – will expand the market for consumption and increase consumer acceptance," Crosby said.

Researchers are also experimenting with ways to make pepper plants yield fruit in a shorter time. This would make harvest more cost-effective and could allow producers to harvest mechanically, a cheaper alternative to manual labor.

Additionally, the team is working with a specialist in food safety and processing to better understand and address concerns about food-borne pathogens and viral diseases and to reduce the need for pesticide use.

"Imported peppers are subject to residue contamination, meaning they don't meet U.S. food safety standards for pesticide levels," Crosby said.

"That's why our team is looking at ways we can reduce the need for pesticides. This will be essential to creating a product that's safe for consumption."

### EXPLORING ALTERNATIVE MARKETS

Rather than encouraging producers to only sell directly to larger consumers like salsa plants, this study seeks to identify niche markets needing domestically grown, better quality and unique types of peppers.

They're also looking at expanding into organic markets.

### WHAT'S NEXT?

So far, researchers have seen promising results from initial trials in Uvalde and Weslaco. They continue to collect data on new Texas A&M AgriLife-bred pepper cultivars and commercial ones that meet grower preferences.

The team also has begun polling buyers on how prospective crops are measuring up to imported peppers.

They hope to publish results of its work within the next year.

In addition to Crosby, collaborators from Texas A&M AgriLife contributing to this study are John Jifon, Ph.D., AgriLife Research professor at the center in Weslaco, and Daniel Leskovar, Ph.D., Texas A&M Research and Extension Center director at both Uvalde and Dallas. Collaborators from New Mexico State University include: Soum Sanogo, Ph.D., Willis Fedio, Ph.D., and Ram Acharya, Ph.D. Partner growers include Don Biad, Shane Franzoy, Ed Curry and Sonny Springer.

# Three useful tips to recycle fall leaves

Many people are coming across top-grade fertilizer in their yard, then simply raking it up and tossing it to the curb.

The underappreciated substance is fallen leaves, said Skip Richter, Texas A&M AgriLife Extension Service horticulture agent, Brazos County, and host of Garden Success, KAMU FM/HD-1. Putting raked leaves in a landfill has a long-term cost for a community. Even recycling green waste via community-wide collection, while less problematic than throwing it away, is still not the simplest and most economical use of this gardening treasure.

"Leaves contain a wonderful blend of nutrients that a tree needed to grow those leaves in your yard in the first place," Richter said. Getting rid of fallen leaves "doesn't make any sense from an environmental standpoint, economic standpoint or just the standpoint of how nature grows leaves."

Employing fallen leaves is easy. Richter explains three simple ways to use this bounty.

Mow the leaves into the lawn to recycle their nutrients

The simplest, easiest way to use the leaves, Richter said, is to mow over them with a mulching mower so that the leaf pieces can fall down between the grass blades. The leaf pieces will release nutrients as they decompose.

"Most people have a St. Augustine lawn, which tends to be coarse," he said. "If you had a golf-course green, you wouldn't be able to mow the leaves into it. But for most lawns, it's easy. It requires no extra work because you're mowing anyway."

### COLLECT AND MULCH THE FALLEN LEAVES

The next-simplest alternative is to collect the leaves and spread them around shrubs, trees or vegetables so they can work as mulch.

"I run over the leaves a few times with my mower to try to break them down," Richter said. "When you grind them up a little bit, it gives them a nicer look, and they're less likely to blow away."

Mulch moderates soil temperature, prevents erosion and evaporation, greatly reduces weed problems, and provides nutrients for plant roots as it decomposes over time.

### USE THE LEAVES AS COMPOST

A third option for using falling leaves is to compost them, Richter said, pointing out that AgriLife Extension has plenty of information on how to compost at home. He has even created an online resource on composting for kids.

Composting leaves takes more commitment than mulching them, but it creates a nutrient-rich mix that can be mixed with soil to help plants thrive.

"Think about it like what happens in a coffee pot," he said. "When water goes on top of the composted leaves, what comes out is nutrient-rich water that roots can use."

"Most people don't think of dead leaves as useful," Richter added. "They think it's a mess, but it's not a mess. It's nature's own, free, slow-release, plant-based fertilizer."

The leaves have so many uses in the garden, Richter said, that he sometimes stockpiles them during "leaf season."



# Texas A&M AgriLife goes to State Fair with exhibits

Texas A&M AgriLife Extension Service personnel will be on hand at the State Fair of Texas from Sept. 24 to Oct. 17 with teaching installations on food production systems, natural resource conservation, nutritious eating and youth education to improve Texans' health, organizers said.

Larry Pierce, AgriLife Extension regional program leader, Overton, said the agency's presence at the fair provides a great opportunity for outreach and to introduce Texans to the everyday solutions AgriLife Extension can provide.

"The theme for this year is focused on the people at AgriLife Extension and humanizing the agency as the front-line service provider to educate Texans, whether it is agriculture or lawn care, 4-H youth development or family and community health," he said. "AgriLife Extension works daily in every county in the state, and residents need to be aware of the services, assistance and advice our experts provide."

### VISIT EXHIBIT

It will be AgriLife Extension's fifth year exhibiting inside the Texas Department of Agriculture's Go Texan pavilion at the State Fairgrounds. The Go Texan pavilion is designed to showcase Texas-made products and introduce people to the many ways that Texas agriculture is used by companies to produce food and beverages.

The pavilion, and being surrounded by Texas agriculture products, is an ideal setting for AgriLife Extension to interact with the public, Pierce said.

AgriLife Extension personnel, along with volunteers from the agency's Texas Master Gardeners and Texas Master Naturalists, will be on hand to meet visitors, he said. Fairgoers can stop in and ask questions or receive information on a wide range of topics including the agency's Path to the Plate program, healthy recipes, tips on vegetable gardening, or how to be involved in 4-H programs.

"This year's exhibit includes educational videos and other media to help us connect with people at the fair," he said. "We will showcase our specialists and agents and how they work with the public to meet the range of needs we service."

Videos will focus on topics ranging from healthy meal preparation and 4-H successes to the connections between agriculture, food and health, Pierce said.

### WORKING FOR PEOPLE

AgriLife Extension works for the people of Texas, but many Texans are not aware of the breadth of the agency's services, he said. The exhibit is part of the outreach that connects agency personnel with the public, companies like HEB and other professionals, helping build relationships that ultimately enhance Texas communities.

"People come from all over the world and visit the pavilion, so it's fun," he said.

"Over 250,000 people usually come by the exhibit, so it's a great opportunity for us to interact with people and let them know who we are and what we do."