

R&D:

The challenges of adding heat

by Stephanie DeCamp

When it comes to the R&D challenges of adding heat to your recipes as the spicy trend continues to grow, two concerns tend to rise to the surface: availability of sources and consistency of product.

This is largely due to the fact that spiciness is derived from chilies and hot peppers, which can vary in their heat from month to month according to environmental and other changes. This requires multiple vendors to ensure a year-round supply of those you're using, and vigilance in keeping your product's level of spiciness as consistent as possible.

"As anyone who's ever eaten a plate of shishito peppers knows, it's a little bit like Russian roulette," says Noah Michaels, team leader of culinary applications at Symrise. "They're mostly friendly and approachable, and then you get one that bites back. All chilies are like that and vary in flavor and heat. We control this through tight QC analysis and then using flavor and Capsicum (a natural pepper extract) to produce a standardized product."

As for sourcing, it becomes an international necessity, no matter which peppers you're working with.

"Fresh pepper crops rotate around the world based on their growing season," says Guy Meikle, corporate chef for Mizkan America, another manufacturer of condiments and ingredients. "That is why Mizkan contracts with the same farms every year, and then we pick only one time a year to hit the fields at the peak of their freshness. We specifically

pick green chilies from the Hatch Valley in New Mexico, and jalapeños from the area surrounding the Hatch Valley all the way into organic fields in Mexico. We also process IQF product in many forms every year, as well as cure and process the peppers. That way people can use our preserved products to create consistency in their manufactured products all year round."

Wixon, another company that produces spices and flavorings, also has longterm relationships with multiple vendors to address this concern, says Ralph Krawczyk, meat protein food technologist for the company. "In addition," he says, "our sourcing and quality teams work diligently with our suppliers to certify consistency in flavor, color, and heat. In order to achieve this, some producers will comingle peppers and/or blend in carryover from one year to the next, to avoid too much variance."

That variance is measured on the Scoville scale, a chart invented by pharmacist Wilbur Scoville that assigns measurable units of heat to the pepper or ingredient in question. If a supplier sends peppers that don't match up to where they should be on that scale to maintain consistency, then adjustments like those of Symrise's must be made.

"The heat of a pepper can vary widely geographically, seasonally, even on the same plant sometimes," agrees Maggie Harvey, new product development manager for Mizkan. "So we test all of our peppers with a heat specification on a regular basis against the Scoville scale, and then adjust using Capsicum in some of our products."

It's because of these variances that taking extra measures may be necessary. Colleen McDonald, marketing manager at Wixon, says that the company also "plans regular visits to our vendors to ensure they continue to meet the standards and guidelines for partnership." Harvey says that Mizkan also makes these visits, and has supplier contracts that range everywhere from company farms to individual farmers. "Mizkan actually supports some of the farmers through contracting in advance," she says, "while also providing seeds and knowledge."

The other aspects of hot peppers

Even if the demand for added heat were to fade away tomorrow, the diverse array of foods it can enhance may ensure that it stays on your ingredients lists.

"In a commissary application, people expect these on-trend flavor profiles and touches," Chef Meikle of Mizkan notes. "The goal in developing any product is enhanced crave-ability. Heat is used as a flavor enhancer or main ingredient in dipping sauces, and translates well to season ceviche and marinades, or add a zing to glazes, savory and sweet sauces, and syrups. We've even used them to put a twist of spice into beverages and drive complexity into bakery items."

Bringing out those subtleties in such a wide array of formulations can require technology as well.

"Through advanced analytical techniques, we're able to separate the flavor attributes from the heat, which allows us to add a small percentage of it to a formula and then a flavor to bring out those other characteristics," says Noah Michaels, team leader at Symrise.