

Chile Pepper Institute studies what's hot

By Monika Joshi, USA TODAY

John Hard, owner of CaJohn Fiery Foods, was not expecting to strike any deals when he visited New Mexico State University's Chile Pepper Institute six years ago.

But what started as a kind gesture — creating a hot sauce and donating some proceeds to the institute — turned into a collaboration that is a key ingredient in his company's success.

Located in Las Cruces, the Chile Pepper Institute is a non-profit, science-based organization dedicated to everything chile pepper. It conducts research on disease resistance, higher yield and better flavor of the crop. It also fields hundreds of questions a week from growers, producers, researchers and home gardeners.

"We get a huge range of questions, from fertilizer for a specific variety to culinary questions about what type of chile pepper is used in what dish," says Danise Coon, senior research specialist.

In 2007, the institute declared the Bhut Jolokia the world's hottest pepper, and Guinness World Records certified it. Upon hearing the news, a few others claimed there was an even hotter chile, prompting many in the spice industry to ask the institute to settle the dispute.

"I received at least 500 e-mails about this alone," says institute director Paul Bosland, a renowned pepper expert and professor at New Mexico State.

New champion declared

In February, the institute proclaimed the Moruga Scorpion the hottest chile pepper in the world, and already, the title has proven a draw for chile enthusiasts and the spice industry. Hard has created a salsa and hot sauce using the pepper, and the institute has sold out of seeds.

For the study, Bosland and his team planted several super-hot varieties of chile peppers, including the Moruga Scorpion and Scorpion, native to Trinidad; the 7 Pot and the Chocolate 7 Pot, hailing from Tobago; and the Bhut Jolokia, found in Assam, India. Ground-up samples of each variety were run through a high-performance liquid chromatography machine that counted capsaicinoids, the heat-causing chemical compound unique to chile peppers. A mathematical formula was then used to generate a number in Scoville heat units (SHU), which translates to heat intensity.

The Moruga Scorpion rated up to 2 million SHU, unseating Bhut Jolokia, which can be as hot as 1.58 million SHU.

During handling, researchers wore gas masks, goggles, full-body Tyvek suits and two layers of latex gloves. Still, the Moruga Scorpion's heat seeped through to their hands, says graduate student Gregory Reeves, who was a part of the study.

For most chile lovers, including Bosland, a small sampling of the Moruga Scorpion was all they needed.

"There's two ways of trying it," Bosland says. "We tasted it just to see what kind of flavor and aroma it has, but then there's the folks you'll see on YouTube — who I'd say are a tad crazy — who'll eat the whole thing. They'll break out in a sweat, get red in the face, and some will even throw up."

A bite that lasts

Hard says he has a good tolerance for spice, but even he can get through only seven or eight chips with his Moruga-based salsa before calling it quits. The heat builds after the initial bite, resulting in an all-over-the-mouth-and-throat burn that lasts at least eight minutes, he says.

"We have people saying, 'Well, I like hot,' but they're talking about Frank's RedHot hot sauce," Hard says. "This is a thousand times hotter from a Scoville rating standpoint."

When the institute declared Bhut Jolokia the hottest pepper, Hard came out with the Holy Jolokia hot sauce, which he says is the best-selling product in his line of more than 100 varieties.

He says the demand for hot products has skyrocketed in the past decade.

But there is more to the Moruga Scorpion than just its excruciating heat, according to those who have tried it. It has a fruitlike flavor, which makes it a unique sweet-hot combination.

"Chile is probably as complex as wine grapes," Bosland says. "It's like learning to taste wine. You can learn all the different flavors and aroma."

For those not daring enough to try the pepper alone, food and consumer science students at New Mexico State University created a brownie mix using the Moruga Scorpion, and the resulting recipe (sold on campus) has been a hit, Bosland says.

Mona Nelson, a home grower in Las Cruces who buys seeds from the institute, says "the institute is a big thing" but "it's something not a lot of people know about."

Bosland founded it in 1992 when he realized he was spending a significant amount of time as a horticulturist answering questions about peppers. He says he is fascinated by the crop because it is not just a vegetable but a spice, an ornamental and a medicinal plant.

The institute houses two farms equaling 300 acres where chiles are grown and tended by researchers, a 3,000-square-foot greenhouse for making hybrids, and laboratory space where testing is done.

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