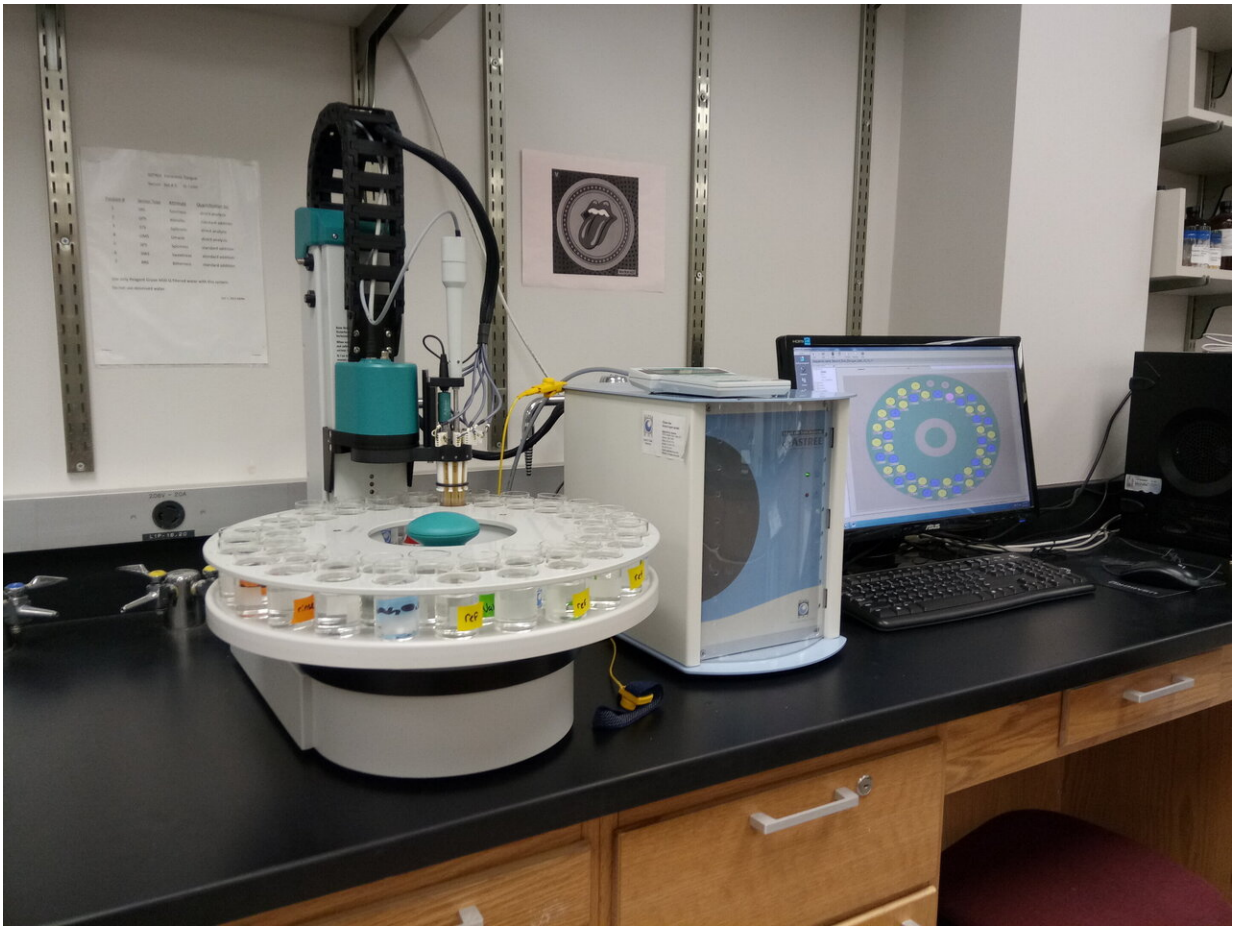
An electric tongue can handle more spicy foods than you can

May 9 2019



WSU has an electronic tongue (or e-tongue) that is very accurate at telling the difference of spiciness between samples of the same food. Credit: WSU

Thousands of new spicy products hit supermarket shelves every year. Some people crave the heat, some fear the burn. But if you enjoy it, spicy food wears out taste buds quickly.

This can be a problem for people who make and sell spicy food.

"At low concentrations, or low spiciness, it's hard to discriminate between two samples," said Courtney Schlossareck, a recent graduate student in the WSU/UI School of Food Science. "It's also hard to tell a difference between two samples at high concentrations."

Luckily, WSU has an electronic tongue (or e-tongue), which can measure those differences. In a new paper in the *Journal of Food Science*, Schlossareck and her advisor, Carolyn Ross, found that the e-tongue is very accurate at telling the difference of spiciness between all samples.

That could come in handy for industry, or even the WSU Creamery, which makes Crimson Fire cheese.

"Spicy cheese is really popular," said Schlossareck, who just graduated with a master's degree from WSU this weekend. "So helping cheese-makers dial in the optimum level of spiciness would be even more helpful."

Another problem with testing spicy foods is that people can only test a few samples before their taste buds give out. After a few bites, taste buds can't distinguish differences in taste at all. But the e-tongue can handle as much heat as any scientist can throw at it and maintain accuracy.

Two of the WSU Creamery's spicy cheeses: Crimson Fire and Ghost Pepper cheese. Credit: WSU

"This would allow testers to narrow a selection down to two or three samples for a human tasting panel if they start from 20 different formulations," Schlossareck said. "That would take days to do with people tasting them."

That's because real people need to wait at least five minutes between samples. And even then, only a few samples can be tested because the spiciness lingers and can throw off results, she said.

So next time you crack open a case of Crimson Fire, give thanks to the taste testers who suffered. Now the e-tongue can bring more refined

options to their taste buds.

More information: Courtney Schlossareck et al, Electronic Tongue and Consumer Sensory Evaluation of Spicy Paneer Cheese, *Journal of Food Science* (2019). DOI: 10.1111/1750-3841.14604

Provided by Washington State University