

DUPONT

Danisco



Meet the Taste Makers

## Using neuroscience to discover the next plant-based blockbuster

*A sensory analysis briefing by Taste Makers Stine Moeller and Camilla Arndal Andersen*

*You'd like to know in advance if consumers are going to love your latest plant-based food or beverage product (who wouldn't?). And all the research tells you that taste and texture are key to brand love. But what you really want to know is: which taste and texture?*

Some really interesting answers are coming out of our sensory labs where Taste Makers Stine and Camilla are helping customers create new kinds of plant-based deliciousness.

Sensory analysis is about identifying a product's sensory characteristics—its sensory *fingerprint*. Our trained descriptive panels don't tell us if they like a product. They simply focus on what they taste or sense, and how intense that flavor or sensation is.

**What does it feel like?**

**How does it break down?**

**What are the flavor components?**

**What does it smell of?**

All this helps us define the product and precisely analyze the differences between products.

Once we have that sensory fingerprint, we test the product with consumers. Do they like it? What do they think is missing?

Finally, we correlate the results from the descriptive panel with those from the consumer panel to uncover the real drivers of liking. The better our descriptive panel is at pinpointing the various intensities of sensory properties, the easier it becomes to uncover the

most significant properties and—this is the really exciting part—create a profile of your consumers' ideal product.

**Would they lie to you? Kind of...**

Ever wondered why some new plant-based food and beverage products end up in the new product graveyard—even after extensive consumer testing?

Part of the answer lies with those consumers.

They're *human*.

Which means they come with certain quirks you need to be aware of. Like wanting people to have a good opinion of them. (Which is one of the reasons plant-based offerings are often eaten *outside* the home.)

Or wanting to have a good opinion of themselves. ("I'm the kind of person who looks after her health and the health of the planet.")

So when you give people three different meat or dairy alternatives to taste and ask what they think, they're not just thinking about your product. They're thinking about themselves and what the product says about them. And they're thinking about what you, the researcher, might think about them.

Plantit

Your recipe for success in plant-based



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For all these reasons, they'll be inclined to say they like your product, even if they don't.

There's a name for this phenomenon: it's called *the halo effect*.

There's another: *the courtesy effect* where people say they like something in order to be "nice".

And it doesn't stop here. There are a huge range of unconscious biases that affect responses to any taste test or product research. And risk the future profitability of your products.

As you can imagine, these unconscious biases make it difficult to get accurate feedback. Which in turn makes it difficult to formulate products that consumers love. (Anyone remember the New Coke fiasco back in 1985?)

*After all, how do you make plant-based offerings irresistible if you can't rely on people reporting the undistorted truth?*

Our breakthrough came when Camilla took our research past all those unconscious biases and straight into the human brain.

#### **The neuroscience that's helping create plant-based deliciousness**

500 milliseconds before you're even aware of it, your brain has decided if you like the taste of something—or not.

That information is gold dust. Gold dust we can mine with 128 electrodes strategically placed on a subject's head.

Using electroencephalography (EEG), we've been measuring people's first response to plant-based food—the true response that occurs before their conscious mind (with all its biases) can form an opinion.

The potential is huge. EEG and other physiological measures, such as sweat and pupil size, give us new gateways to the brain. Gateways that are helping us remove the distortions of the conscious mind to capture subconscious responses to differences in taste.

We can [measure people's facial expressions](#), where they're looking and their sweat response—as well as their brain waves. And with all these measures, we'll finally know whether people actually like that sugar-reduced oatmilk beverage. (Better still, once we figure out how our brain recognizes fat and sugar, a non-dairy shake with zero calories that tastes just like the real deal could be closer than your nearest McD.)

Our conscious experience of food is just one small part of the total sensation. By studying the entire experience—conscious and subconscious—we're discovering how to make tastier, healthier food for everyone.

#### **Check out the other articles in the Taste Makers series:**

Meet the Taste Makers: [Introducing the DuPont sensory scientists cracking the code of plant-based success](#)

Creating the perfect plant-based product: [A greenfield briefing by Taste Maker Kimberly Hogan](#)

The science of product formulation for plant-based profitability: [A business briefing by Taste Maker Rosa Sanchez](#)

Or if you think there's something the Taste Makers could help you with, [get in touch](#).



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