

Managing complexity in sensorial evaluations

Chr. Hansen's TasteIT Tool powered by Flavorwiki



Marlene Boiesen,
Commercial Development
Manager Food Cultures
& Enzymes, Chr. Hansen:
Cheese sales depend on the
right sensorial properties of
the products in offer



Sensorial evaluations tend to get quite complex the more product samples and panelists are included and the more questions are being asked. It gets even more complicated if you are to bring results in accordance with existing trend in the food markets, i.e. if you are up to evaluate how and to what degree a certain product fulfils expectations associated with such trends. Chr. Hansen has introduced a new solution to tackle with such difficulties based on artificial intelligence.

Shifts in market trends create new opportunities

Marlene Boiesen, Commercial Development Manager Food Cultures & Enzymes, Chr. Hansen, Hoersholm, Denmark explains: „Shifts in market trends create new opportunities for cheesemakers for sure. But if they want to benefit from new niches opening in the market, they need to adapt their products to consumer expectations. We know that taste, flavour and texture are exactly the parameters that make people eat and love cheese. So in the end, sales depend on the right sensorial properties of the cheeses in offer. Here's where we developed a new structured approach to sensorial evaluation with our customers using the TasteIT Tool powered by FlavorWiki“.

FlavorWiki is a digital company that aims at revolutionising the way the food industry collects, analyses and interacts with consumer, sales and R&D related data. The FlavorWiki Platform combines advanced data and machine learning techniques with easy-to-use features that facilitate digital communication with consumers, colleagues, customers and suppliers around the world. The company counts major CPG and ingredient suppliers such as Chr. Hansen amongst its clients, and conducts research around the world in more than 14 languages.

Standardised and structured sensorial evaluation

In a 6-months project, Chr. Hansen and FlavorWiki jointly developed a system that allows for standardised and structured sensorial evaluation. It went online in September 2020 and has, since then, found enthusiastic acceptance. Customers even asked to adapt the solution for their B2C market analysis. Amongst the many mega

**Introducing Chr. Hansen's Ripening Solutions
Targeting the 3 parameters of cheese ripening**

Flavor perfection 	Improved surface and appearance 	Controlled ripening speed 
<p>3 flavor segments for new as well as traditional flavor:</p> <ul style="list-style-type: none"> Core - for everyone: clean, creamy, buttery and fresh Character - for explorers: fruity, nutty, savory and roasted Connoisseur - for experienced: farmhouse, sulfur, piquant and earthy 	<p>Customized solutions for diverse texture, surface and appearance needs:</p> <ul style="list-style-type: none"> Surface coating: White mold, yeast and aerobic bacteria Veins formation: Blue mold Eye formation: Propionic bacteria 	<p>Solutions to optimize the cheese life cycle:</p> <ul style="list-style-type: none"> Accelerated ripening: Take products faster to market by reducing ripening time and saving costs Extension of shelf-life: Reduce waste by increasing the sales window. Increase export opportunities

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**Three flavor segments: CORE, CHARACTER & CONNOISSEUR
Select the flavor segment that best fits your needs**

CORE - for everyone Flavor matching mild cheese for any occasion	CHARACTER - for explorers Solutions that add character to your cheese	CONNOISSEUR - for experienced Intense flavors for discerning consumers
  <p>CLEAN CREAMY</p>	  <p>FRUITY NUTTY</p>	  <p>FARMHOUSE SULFUR</p>
  <p>BUTTERY FRESH</p>	  <p>SAVORY ROASTED</p>	  <p>PIQUANT EARTHY</p>

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trends that characterise today's market environment there are several that allow food manufacturers necessary differentiation. Most important in this context are snackification and individualisation. Foods need to fit to individual life and consumption patterns and those patterns produce fragmentation and diversity.

As consumers are becoming food explorers who are willing to experiment and try foods and flavors which are new and different they open up opportunities to differentiate the taste and fill the growing gaps in the market. Industrial-made foods are moving away from 'one size fits all,' instead catering to more diverse emotional and cultural needs that comes into the focus. Chr. Hansen, says Boiesen, has a wide portfolio of cheese ripening solutions that allow cheese makers to produce cheese in virtually any desired quality in terms of flavour, texture and taste. The TastelT Tool is being used to explore new cheeses and creating opportunities with our customers.

Core, Character and Connoisseur

To exactly evaluate these key criteria in sensory panels, Chr. Hansen has defined three main flavour segments: Core, Character and Connoisseur. Core, destined for all consumer types, stands for mild an creamy cheeses. Character is the area for the explorers that seek exciting flavours and Connoisseur covers those consumers that prefer the classic distinct flavours ranging from piquant to sharp. Each of the three key criteria is subdivided into four sub-flavour characteristics (see graph) for best possible description of sensorial experience. And all this was transferred into the TastelT Tool.

The TastelT Tool is basically a web-based solution into which the panelists can express their judgements by simply clicking a box. Panelists are asked about their opinion of certain cheese samples, in a number of subsequent steps these opinions are being tested and questioned. The result is a thorough insight into how the samples fulfil any given expectation. Of course, the TastelT Tool can also be used to evaluate how reduced ripening times really influence product characteristics.

Paired rating

At the core of the TastelT Tool stands paired rating and forced choice. These are quite simple „yes or no“ questions that allow untrained, non-professional tasters to map their individual flavor perception in an objective and intuitive manner.

The paired rating is based on consumers (or cheese makers!) being able to distinguish difference between intensities of flavors, textures and products. To capture this, FlavorWiki gathers this data with their patented "Paired Question" process. In this method, par-

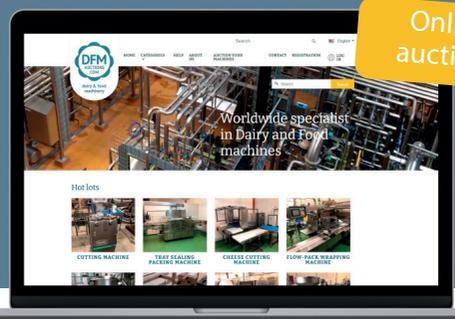
ticipants are asked to choose between sensoric attributes in a paired fashion by comparing Attribute A vs. Attribute B. A number of pairs are shown to the taster, the choices are processed by the patented algorithm into a mathematical value and presented on graphs.

The TastelT Tool performs on smart devices and computers alike. In Chr. Hansen tests can be made in physical or virtual groups or even by individuals. The digital tool shows real time response and allows discussion and easy share of the results of tasting. All in all, overall preference of cheeses compared to each other can be evaluated. The TastelT Tool can also be used for other product development than „just“ of cheese. Chr. Hansen will expand the use of the tool to other business areas i.e. the fresh dairy.



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