

Press release

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Symrise Research & Technology reveals the multiple facets of science-powered flavor creation.

- Describes the science and human expertise behind the creation of new flavors
- Increases understanding of natural, science-powered flavor creation
- Outlines the processes that enable Symrise to provide customers with solutions for the development of consumer-preferred products

An essay focusing on the Symrise Research & Technology (R&T) department in the Taste, Nutrition & Health segment fosters greater internal and external understanding by explaining the fascinating blend of scientific, technological and human factors that power flavor creation. This addresses Symrise customers wish for understanding how the creating of taste solutions instrumentally adds to the development of consumer-preferred products. This also helps fulfilling consumers' high expectations to the food products they choose.

Symrise supports its customers in delivering consumer-preferred products. This involves proprietary technologies and human skills. To shed light on the secrets behind the creation of taste solutions Symrise has conducted interviews with members of its R&T department. It has summarized its findings in an essay to share with its customers.

The essay explains what defines a 'flavor creation'. It takes a combination of research and technology, as well as raw materials with natural authenticity as an essential factor. This supports today's consumers wish to know what their food and beverages contain, where they come from and how manufacturers produce them.

"The overall process of creating a flavor forms a highly complex task. It involves many different technologies and processes. We like to compare it to the different instruments in an orchestra contributing to an enjoyable piece of music. In this essay, our R&T colleagues explain how they create their own very special harmony. They are revealing some of the secrets behind taste solutions", says Dr. Katharina Reichelt, Director Functional Flavor Solutions, R&T Taste, Nutrition & Health at Symrise.

Combining human senses and science power

"Science-powered flavor creation" begins when the R&T department receives a project brief with defined objectives and characteristics. It then works towards the end goal to provide its customer with a consumer-preferred solution that meets their particular specifications. This may involve creating a completely new solution or reconstructing an existing taste.

"We start the process by decoding the inherent principles of a sample that meets some of the characteristics requested by the customer. This helps us to get to know the taste actives and sensory key drivers. We also learn, which ingredients play a relevant role for the flavor. For this, we use human senses in synergy with technology," explains Dr. Katharina Reichelt.

Creating flavors through science and nature

Key technologies, such as LC-Taste® (liquid chromatography – taste) and GC-O (gas chromatography – olfactometry) combine chemical separation methods with sensory analysis, while trained experts

identify, which ingredients impart the different tastes and smells. Symrise uses Artificial Intelligence to assist flavor creators, with proprietary digital tools like predictive modeling. They help screening the existing Symrise portfolio and find suitable ingredients that the experts can use to create a flavor.

'Real life' behavior also forms an important part in the performance of a flavor. Factors such as saliva and mouth temperature can substantially affect taste. For this reason, R&T uses close-to-nature technologies such as an artificial mouth model to gain important information about how a flavor behaves.

Equipped with an ingredient list created by these chromatographic analyses, sensory, predictive modeling, artificial mouth model and authenticity tests, the flavor creators can start to create the flavor. Finding a 100% match takes some manual fine-tuning of ingredients by flavorists, who can access a library of valuable innovative ingredients that constantly evolves as new natural raw materials are identified.

"Of course, before we can use a newly developed flavor, we need to know how it develops over time and under different environmental influences. We use proprietary technology to conduct accelerated stability tests, predict shelf life and assess behavior under variable conditions such as temperature and humidity. Only after another round of sensory testing, we will incorporate the taste in an end product application. After that, we ask a panel of consumers to test it and to give their own feedback," says Sylvia Barnekow, Director Food & Science Application Technology, R&T Taste, Nutrition & Health at Symrise.

Thanks to the openness of Symrise R&T, this essay clearly shows that it takes a highly specialized blend of science and artistry, proprietary technologies and finely tuned flavor expertise for Symrise to support its customers in creating delicious food and beverage experiences that consumers love.

About Symrise:

Symrise is a global supplier of fragrances, flavors, food, nutrition and cosmetic ingredients. Its clients include manufacturers of perfumes, cosmetics, food and beverages, pharmaceuticals and producers of nutritional supplements and pet food.

Its sales of € 3.8 billion in the 2021 fiscal year make Symrise a leading global provider. Headquartered in Holzminden, Germany, the Group is represented by more than 100 locations in Europe, Africa, the Middle East, Asia, the United States and Latin America.

Symrise works with its clients to develop new ideas and market-ready concepts for products that form an integral part of everyday life. Economic success and corporate responsibility are inextricably linked as part of this process. Symrise – always inspiring more ...

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