

Travel Notes: Natural Aroma Chemicals

Axxence expands its ingredient range.

Axxence has invested heavily in new product development, noted founder Joost van Neck during a recent visit to the company's Emmerich, Germany, headquarters.

Axxence develops and produces European natural aroma chemicals—including isolates and sulfur compounds—at its R&D hub in Bratislava, Slovak Republic. There, a 10-person R&D staff focuses on the development of natural products such as pyrazines isolated from fusel oils^a. Other isolations include rose oxide from geranium oil, notes technical director Peter van der Schaft. This process requires several isolation steps.

The company cultivates plant materials such as plantains in Slovakia, which are subjected to biotechnology processes. These processes employ the plants as an enzyme source to convert natural precursors—unsaturated fatty acids—into natural materials such as *trans*-2-hexenal, 2-4-decadienal (from potato), 2,6-nonadienal (from cucumber), styrallyl alcohol (from a root vegetable) or 1-octen-3-ol (from mushrooms). These products are isolated from the crude materials by filtering out water and impurities using a.o. spinning cone technology.

“We are trying to extend that type of processing technology to other plants and products,” notes van der Schaft.

He adds that the company also uses kitchen chemistry, or “traditional food preparation processes,” in the parlance of EU flavor regulations. The company's R&D staff aims at several other natural products via kitchen chemistry conversion of a natural precursor, such as indole from amino acids.

Axxence operates a research program for each ingredient production technology, says van der Schaft. Part of this work involves kitchen chemistry for sulfur compounds. Research in isolation technology, meanwhile, has led to the launch of natural lactones and pyrazines.

The company pursues high- and low-risk R&D projects simultaneously as it builds its portfolio. These include materials that are already on the market, which have a short market-introduction cycle, as well as those projects requested by customers. Axxence is also developing products that are not already on the market as EU naturals. The speed of ingredient adoption is of course limited by the level of difficulty when moving from lab- to pilot- to manufacturing scale, and by customer companies' desire to



Plant harvesting in Slovakia.

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limit the total size of their flavorists' palettes. To be added to an ingredient portfolio requires an ingredient to display superior performance or even be featured in a significant new win. This cycle can stretch as much as several years, depending on the project. This process is further complicated by the fragmentary flavor market, in which various niches must be targeted.

Despite these complications, the market for natural aroma chemicals is expanding. In response, Axxence is investing in a new manufacturing facility in Bratislava, Slovak Republic. Equipment and staff should be in place by this summer, according to van Neck. The new site will host biotechnology, isolation technology and kitchen chemistry, as well as laboratories and offices, servicing an expanding palette.

^a For a sampling of these and other materials presented during the meeting of the British Society of Flavourists, turn to Page 18.

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