

The Future of Natural Flavor Materials

Cargill Alfrebro marks its 30th anniversary

Over the course of the last 30 years, the evolution of Alfrebro and its activities have tracked advances in flavor ingredient chemistry. Founded in 1981 in the Cincinnati area, today Alfrebro is a product brand of Cargill's flavor business, with a dedicated facility located in Monroe, Ohio.

"The acquisition of Alfrebro as part of Degussa in 2006 by Cargill supplemented our existing flavor business," says Nachi Adaikalavan, global flavor ingredients director for Cargill. "We became a global player in the market rather than just regional. It gave us breadth and depth within this industry. Alfrebro brought along a lot of captive aroma molecules that facilitated us being set apart from some of our competition. Cargill offers a large product portfolio. Our customers can select the ingredients or the total solution at their convenience. Where we come into play is we understand the interactions among many of the ingredients in the final product. So it was a good fit for us."

Since 1996, Alfrebro has narrowed its focus from various chemistries in which it had expertise to the production of aroma molecules for flavors.

"This allowed us great flexibility," says Charles Gibson, site manager for the Monroe facility. "The focus really became on the product line side."

Today, about 98 percent of the molecules produced by Gibson's team are natural.

"The driver for us is natural aroma molecules," says Adaikalavan. "Though there are some large-volume products, there are a lot of other products within this space that are high-impact, medium-volume, and that's what the industry is looking for today."

The Cargill Alfrebro product line breaks down into three segments—natural molecules for the market, molecules for Cargill captive use and molecules produced for the captive demands of external customers. To keep up with evolving industry demands, Gibson explains that Cargill chemists are involved in biochemistry activities, including fermentation.

"Historically, Alfrebro was mainly focusing on beverage application," says Frederic Madelaine, global product line manager, Cargill Alfrebro aroma molecules. "The reason was that the demand for natural flavors was mainly on beverages and sweetness. Now, with the health and wellness trend, the demand for natural products, flavors and aroma molecules has spread into other segments."

"These natural molecules today, besides just performing an aromatic function, also offer masking capabilities," says Adaikalavan, noting the off notes associated with formulations incorporating vitamins, artificial sweeteners and other ingredients. "It has more potential than what is



Cargill Alfrebro's distillation facility in Monroe, Ohio.

[currently] being seen; there is a lot of work being done in this space. Sometimes the palette of natural chemicals is very limited, and so those segments are more demanding for new FEMA GRAS products.

"The industry is definitely moving more towards the natural arena," Adaikalavan continues. "I think the growth that's taking place in this space is faster than the synthetic space, despite the volumes being relatively high in the synthetic space. I think the value you get from a natural molecule is definitely more significant when you look at it from a percentage point of view."

Today, with about a dozen chemists backed by R&D activities in Minneapolis and Grasse, France, the aroma molecules site features expertise in distillation processes, purifications and biochemistry. And, since 1999, the facility has served as a center both for domestically produced



Cargill Alfrebro's site includes warehousing space for materials produced there and in Grasse, France.

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A view of Cargill Alfrebro's reaction capabilities.

natural aroma molecules and the extracts produced at Cargill's Grasse site, which also gives Cargill access to isotopic testing for authentication of the natural products.

"Being in the United States, we are close to our customers for speed-to-market, which is very important in our industry," says Madeleine.