

Researchers optimize cocoa fermentation process

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The Barry Callebaut Group, VIB (Flanders Institute for Biotechnology) and KU Leuven (University of Leuven), with the support of IWT (Agency for Innovation by Science and Technology-Flanders), managed to improve the process of cocoa fermentation. Building on techniques inspired by Belgian brewers, the researchers developed a special yeast that unlocks the flavor and aroma precursors in cocoa beans and enriches the chocolate's full flavor development. With the new yeast Barry Callebaut will now be able to customize the flavor development of cocoa to the specific needs and wants of its customers more than ever.

Improved, superior tasting chocolate

For the past three years, Professor Kevin Verstrepen and his team at VIB and KU Leuven isolated hundreds of different yeasts from cocoa fermentation processes on various pilot sites of the Barry Callebaut Group in Africa and Asia Pacific. These yeasts were then examined in labs to determine which characteristics yielded superior chocolate. Based on the results, the research team developed a new [yeast](#) strain combining all the desirable traits. "When this 'new yeast' is added while the cocoa is fermented in the bush, the process becomes faster and more consistent. Moreover, the new yeast strain produces more desirable aroma compounds and hampers the growth of unwanted yeast. The result is even tastier chocolate", elaborated Professor Verstrepen.

From beer to cocoa

The whole process of cocoa fermentation is based on *Saccharomyces cerevisiae* or the yeast used to brew beer. "A completely natural process - refined during a hundred years of winemaking and beer brewing - now makes it possible to unlock the flavor and aroma precursors in the [cocoa beans](#). A Belgian artisan product will now contribute to a new national pride. We could not make this story any more Belgian", said Gino Vrancken, Global R&D Program Manager at the Cocoa Science Team at the Barry Callebaut Group.

10 years of research on fermentation

The Barry Callebaut Group has two fermentation research facilities dedicated to finding ways to optimize the natural fermentation processes and to develop insights in creating exciting new flavors. For nearly ten years, the Barry Callebaut Group has been a pioneer in the field of controlled cocoa fermentation, a 100% percent natural process. Experiments were conducted with several microorganisms in a microbial starter [process](#). Today, Barry Callebaut is the first, in collaboration with the Verstrepen Lab (VIB / KU Leuven), to craft yeast starter cultures that enrich the full flavor development of the end product, chocolate with a more intense flavor.

Provided by VIB (the Flanders Institute for Biotechnology)

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