

Innovation for increased safety of production

CONDETTA SECOA

Cocoa is the world's most popular taste in flavoured milk drinks and their plant-based alternatives. However, heat-resistant spores can survive in the manufacturing process and cause major product damage in the final product. With CONDETTA SECOA cocoa, CONDETTA has achieved a breakthrough for low-germ products, offering increased product safety and quality. "CONDETTA SECOA is a real product innovation," highlights Dr. Wolfgang Weber, Managing Director of the independent ifp (Institut für Produktqualität GmbH), CONDETTA's newly developed cocoa powder.

"This powder mixture has an unprecedented level of quality." What excites him so much about the concept is the solution to a recurring problem in the cocoa processing industry: the sensitive raw material cocoa is a natural product that is not free of microorganisms such as certain *Bacillus* species. These in turn form spores that can survive the industrial production process – with the unpleasant consequence that the quality level of the end products decreases and spoilage processes can occur. To prevent this, food companies have so far used, among other things, the energy-intensive process of preheating to allow

spores to germinate and transform them into their vegetative and thus thermosensitive form. Now, after two years of development, the CONDETTA has achieved a milestone to overcome the problem.

More robust and safer

CONDETTA has developed proven low-germ cocoa powder. The powder mixture CONDETTA SECOA offers the opportunity to question the energy intensive preheating. Dairies and the export business are exposed to fewer risks: the produced milk drinks are more robust against fluctuating ambient temperatures during transport. This is all the

more attractive for export-oriented companies. The team led by Karsten Stieg, Head of Product Development and Quality Assurance, has brought CONDETTA SECOA to market maturity: "We want to offer a higher level of vertical manufacture and react even more flexibly to market trends," says Stieg. That's why he is putting more of the department's resources into research and development to optimise the product and its quality as part of the development process, with the "strategic goal of generating more added value for the customer."

As a result, almost sterile products have been created in the portfolio around CONDETTA's high-quality cocoa powders, which comply in every respect with the European Directive 2000/36/EC on cocoa and chocolate products. Following testing by comprehensive qualification and validation processes, there are three new products in the range: CONDETTA SECOA Coat for the confectionery and coating industry, CONDETTA SECOA Sweet for the ice cream, baking, instant and preparation industry and CONDETTA SECOA Drink for the dairy industry. CONDETTA SECOA achieves the desired colour values and germ contents through an adapted production process.

Convincing results

The ifp in Berlin has analysed various standard qualities of cocoa powders in comparison with the new CONDETTA SECOA. The result: although low microbiological contamination (<300 CFU/g) was detected in various standard qualities, a significant increase and thus high germ counts of mesophilic and thermophilic spore formers were achieved in enrichments. In addition, growth of spore-forming organisms such as *Bacillus subtilis* and *Bacillus circulans* was again detected. Currently, spores are only insufficiently specified, and experts also argue about the effects of different strains and their effects on the end product.

Qualified evidence of the achieved spore reduction:

Sample name	Mesophilic total germ count, aerobic	Thermophilic total germ count, aerobic	Spores aerobic spore formers, mesophilic	Spores aerobic spore formers, thermophilic	thermorensistant spores, aerobic spore former, mesophilic	thermorensistant spores, aerobic spore former, thermophilic	aerobic mesophilic growth	aerobic thermophilic growth
	[CFU/g]	[CFU/g]	10min 80°C [CFU/g]	10min 80°C [CFU/g]	30min 100°C [CFU/g]	30min 100°C [CFU/g]	3 days, 30 ± 1°C (per 10g)	3 days, 55 ± 1°C (per 10g)
Cocoa standard quality								
Immediate prepared samples	1,0 x 10 ²	< 10	1,8 x 10 ²	< 10	< 10	< 10	-	-
2 h room temperature	1,5 x 10 ²	< 10	3,9 x 10 ²	< 10	< 10	< 10	-	-
24 h at 30°C	-	-	1,9 x 10 ³	6,0 x 10 ²	< 10	< 10	not detectable	not detectable
48 h at 30°C	-	-	5,3 x 10 ⁴	3,0 x 10 ⁴	< 10	< 10	detectable	detectable
7 d at 30°C	-	-	3,0 x 10 ⁶	3,0 x 10 ⁶	< 10	< 10	detectable	detectable
CONDETTA SECOA Coat								
Immediate prepared samples	< 10	< 10	< 10	< 10	< 10	< 10	-	-
2 h room temperature	< 10	< 10	< 10	< 10	< 10	< 10	-	-
24 h at 30°C	-	-	< 10	< 10	< 10	< 10	not detectable	not detectable
48 h at 30°C	-	-	< 10	< 10	< 10	< 10	not detectable	not detectable
7 d at 30°C	-	-	< 10	< 10	< 10	< 10	not detectable	not detectable

Source: Extract from ifp test reports dated 29th May 2020 and 10th July 2020
CONDETTA goes to a quality level with CONDETTA SECOA Coat where spore growth is not detectable.

In contrast, CONDETTA SECOA showed extremely low initial germ counts of <10 CFU/g in the studies. Even after 24 to 48 hours of incubation under ideal conditions, no growth of spore formers or heat-resistant spore formers was detected in a large number of enrichments. Accredited methods for germ and spore count, dilution, heat treatment, microbial counting and identification (MALDI Biotyper) were applied and additional enrichment approaches were performed to detect the growth capacity of existing spores. For the industry-renowned food chemist Dr. Wolfgang Weber, this is a "gamechanger" because CONDETTA has achieved a significant reduction in thermo-resistant spores. CONDETTA thus meets the spirit of the times. The international market research company Innova Market Insights emphasises that new launches of milk-based drinks containing cocoa and their plant-based alternatives are

enjoying great popularity worldwide. Cocoa, for example, has an index-related growth of approx. 7% in the period from 2015 to 2020. CONDETTA thus offers the right product in the No. 1 taste.

Individual customer service

The taste profile, described in internal sensory tests as chocolatey and rounded, makes Managing Director Jan Herbert very proud and convinces him of the new development CONDETTA SECOA to better manage an immanent risk in the future: "We want to contribute to consumer protection, brand trust and image with a high level of product safety for our customers." No matter where the low-germ powder mixture is used, CONDETTA does not only supplies a valuable raw material, but also accompanies the customer with individual solutions – as a partner at eye level.



CONDETTA

Dairy products, baked goods, sweet desserts or ice cream: CONDETTA base mixes are found in numerous food products. The subsidiary of confectionery manufacturer August Storck KG, headquartered in Halle (Westphalia, Germany), produces powdered components that provide taste, colour, sweetening and consistency. Customers from the food industry in over 50 countries trust in the know-how gained from over 70 years of experience in the cocoa-processing food industry. CONDETTA distributes many thousands of tonnes of compounds every year and is also certified for the manufacture of products in organic, halal, kosher and VLOG quality. condetta.com