

CHEESECOAT PROJECT

F. Başak Coşkun^{*}, H. Bysell, E. M. Düsterhöft, A. Fureby

SETBİR; Mustafa Kemal Mah. 2125. Sok. No:6 A Blok D:8
Eskişehir Yolu- Ankara/ Turkey

The European food industry is under increasing pressure to improve the nutritional quality of their foods not least in the area of saturated fat and trans fat reduction. The CheeseCoat Project, funded by the EU, started work in 2011 with the aim of developing a Mozzarella-type cheese with less than 3% fat marking a significant improvement on the varieties that are currently available. Researchers at NIZO food research have screened >100 different microbial cultures and combinations, using their efficient MicroCheese (Mozzarella) Model. The cultures were compared for acidification, proteolytic capacity and specificity, EPS formation) and eight strains were selected for up-scaling and pilot production. The results showed that starters had good quality, high viable counts and acceptable activity values. Pilot scale procedures for production of 3% fat Mozzarella-type cheese that comprised a cooking-stretching step, or not, was successfully set up. Most favourable adjustments of processing and culture choice resulted in 3% fat cheeses with a moisture/protein ratio closely matching a full fat Mozzarella. The cheeses attained acceptable cold and hot functionality within storage times as short as 4 weeks. The further optimize the low fat cheese's functionality, a technology for coating the shredded cheese is developed. The oil coating is applied to enhance the melting properties of the mozzarella cheese on e.g. pizza, while adding a minimal amount of fat. Research at SP has demonstrated that the most promising solution is a complex oil-in-water emulsion which has provided positive results on improving the melting quality of the low fat cheese.

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* Corresponding author: setbir@setbir.org.tr