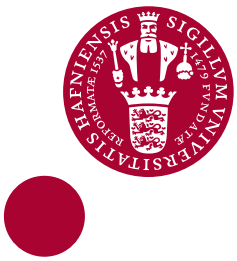

Could the addition of sugars boost bacterial interaction and accelerate cheese ripening time?

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[P12] COULD THE ADDITION OF SUGARS BOOST BACTERIAL INTERACTION AND ACCELERATE CHEESE RIPENING TIME?

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The dynamics involved in bacterial interaction during cheese ripening is not fully understood. The complexity as well as the variability related to cheese production are challenges witch need to be investigated by researchers and industry. Significant cost saving could be achieved by accelerating the lysis of the starter lactic acid bacteria (SLAB) and by increasing the growth of non-SLAB. This study, using broth models and cheese trials, was performed to investigate the growth of non-SLAB in presence of added N-acetylglucosamine, Ribose or N-acetylgalactosamine with or without amino acids addition. The eight produced cheeses were analyzed using standard methods for salt-in-moisture, sugars and lysed cells concentration as well as pH, water activity and microbial counts throughout ripening at 10 °C for six months. Sensory analysis and sequencing of DNA from microbial colonies were performed in ripened cheeses. Results indicated no differences in bacterial interaction between the cheeses with addition of sugars and/or amino acids compared to control cheese. Despite the levels of salt-in-moisture and pH being within the range for high quality cheese, sensory analysis indicated that all ripened cheeses were not harmonious. Non-SLAB were under the detection limit of the applied method (2 $\log_{10}$ cfu g^{-1}) throughout the whole ripening period. In the broth model, SLAB were not able to use the tested sugars as source of energy. However, in the cheese matrix SLAB were able to utilize some of the added sugars, N-acetylglucosamine was firstly depleted while N-acetylgalactosamine was less preferable source of energy. The nature of non-SLAB is speculated to be an important factor and its concomitant use as adjunct culture is suggested, especially when cheeses are manufactured with pasteurized milk.

[P13] ABSTRACT WITHDRAWN