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Exchanging emulsifying salt with dairy-based ingredients in cheese powder production

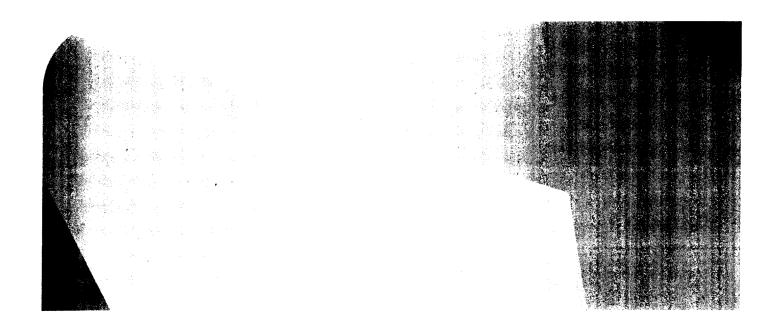Hougaard, Anni Bygvrå; Varming, Camilla; Ardö, Ylva Margareta; Ipsen, Richard

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Exchanging emulsifying salt with dairy-based ingredients in cheese powder production

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Notes

Recent focus on reduction of food additives has created a need for investigation of the possibilities for production of cheese powder and processed cheese without emulsifying salts. The aim of this study was to evaluate dairy-based ingredients as substitutes for emulsifying salt in the melted cheese emulsion, feed, used for production of cheese powder. Feed stability was strongly reduced when removing emulsifying salt, but was partly reestablished by addition of sodium caseinate or buttermilk powder. Analysis of the rheological properties also indicated improvement by using dairy derived ingredients compared to feeds without emulsifying salt. Confocal laser scanning microscopy showed that sodium caseinate caused fat to be more dispersed on the protein particles, and that buttermilk powder imparted a more continuous protein network than feed without emulsifying salt. Addition of sodium caseinate or buttermilk powder show potentials as parts of a strategy for omission of emulsifying salt in cheese powder production.