

Calcium in whey processes. Technology and products

Period: January 2013 - December 2015
Budget: 5.015.000 DKK
Funding: The Danish Milk Levy Fund (Mælkeafgiftsfonden)
Project manager: Professor Leif Skibsted
Institution: University of Copenhagen, Dept. of Food Science
Collaborators:

Aim and Description:

Calcium is essential and milk important for human calcium intake. Utilization of calcium from whey will be optimized for development of new products through an understanding of binding of calcium to proteins and anions based on physico-chemical principles and through simultaneous measurement of total calcium, calcium-ion concentration and calcium-ion activity. Protection against unwanted precipitation of slightly soluble calcium salts such as lactates, phosphates and citrates during processing of whey will be obtained through investigations of the capability of calcium salts to form supersaturated solutions under conditions relevant for whey fractions. An understanding of the kinetics of precipitation of calcium salts in presence of natural ligands and chelators present in whey will diminish loss of calcium and phosphate to waste water and ensure a high content of available calcium in fractions suitable for calcium fortification of foods and beverages.