

Low-calorie creams based on fresh milk cream

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Low-calorie creams based on fresh milk cream have structure like emulsion and jelly-foam. For their making process was using whipping process of fresh milk cream, sugar and gelatin. During cooling process gelatin solution makes jelly structure, which help to avoid system separation process, increase cream stabilization and minimize fat effect in making structure process.

However, big defect of this system is starting forming process just after making cream process. For expansion series range of hydrocolloids for this type of cream and regulation making structure process it was researched carbohydrates influence: sodium alginate, carrageenan, agar-agar, which can use for stabilization food systems, including emulsion and foam system.

Determined hydromodulus of additives, their solubility and swelling in water and fresh milk cream (20% fat). So hydromodulus, where polycarbohydrates have maximum swelling and solubility in water, to have colloidal solution for easy to add into emulsion-foam system: for sodium alginate 1:40, j-carrageenan 1:40, agar-agar 1:30.

Also determined, maximum swelling degree in water and fresh milk cream has sodium alginate, which has most molecular weight, comparing other tested polycarbohydrates and a lot hydrophilic groups in molecular chain. Confirmed that the polycarbohydrates critical swelling degree is going down, when the temperature going up.

Using polycarbohydrates can change structurally mechanical system properties. Determined, that analyzed cream samples have less elasticity value, more flexibility, do not make jelly-fix structure after cooling, than control sample based on gelatin. So its possible to use a large temperature interval for decoration process of ready products and prolong the time decoration process.

Based on determined results of organoleptic and physicochemical properties, was determined rational concentrations of sodium alginate, j-carageenan and agar-agar.