

搅打稀奶油的搅打充气机理

赵强忠, 赵谋明, 苏国万, 罗东辉

华南理工大学 轻工与食品学院, 广州 510640

收稿日期 2008-1-29 修回日期 网络版发布日期 2009-1-15 接受日期

摘要 通过分析搅打稀奶油在搅打过程中, 脂肪部分聚结率、液相中蛋白质质量比变化、搅打起泡率、质构特性和亚微观结构随搅打时间的变化规律, 探讨了搅打充气与搅打稀奶油品质变化之间的内在关系。研究表明: 搅打充气过程大致可分为迅速充气、大气泡破裂成小气泡和小气泡合并成大气泡3个阶段。第一阶段, 搅打起泡率、脂肪部分聚结速度、脂肪球粒径增加速度相对较慢, 且泡沫结构的稳定性差, 以大气泡居多; 第二阶段, 搅打起泡率、脂肪部分聚结率、质构特性值均迅速增加, 气泡稳定性较好, 体系中的气泡较小; 第三阶段, 搅打起泡率开始下降, 脂肪部分聚结速度缓慢, 质构特性值和脂肪球粒径仍然保持较快速度增加, 脂肪球已经聚结形成较大块状的聚结体, 并包裹着大气泡。

关键词 [食品科学与工程](#), [搅打稀奶油](#), [搅打充气](#), [脂肪球部分聚结](#)

分类号 [TS201.2](#)

Mechanism of whipping process of whipped cream

ZHAO Qiang-zhong, ZHAO Mou-ming, SU Guo-wan, LUO Dong-hui

South China University of Technology Department of Light Industry and Food, Guangzhou 510640, China

Abstract During whipping process of whipped cream the changes of partial coalescence rate of fat globules, protein concentration in serum, overrun, textural properties, and the relationship between the submicroscopical structure and whipping time were analyzed. The effect of the whipping process on the quality of the whipped cream was investigated. Results show that the whipping process is composed of three steps, including rapid puffing step, big air bubble breaking up step, and coalescence step of small air bubbles. In the first step, the overrun, the partial coalescence rate of fat globules and the growth of fat globule size are relatively slow, and most of the air bubbles are the big ones, so the structure of the bubbles is unstable. In the second step, the overrun, the partial coalescence rate of fat globules and the textural properties of the whipped cream rapidly increase, and the structure of the bubbles is stable. In the third step, the overrun of the whipped cream decreases, the partial coalescence rate of fat globules is slow, while the textural properties and the fat globule size continuously increase, and the fat globules start to gather into polymers that wrap the big bubbles.

Key words [food science and technology](#) [whipped cream](#) [whipping](#) [fat globules partial coalescence](#)

DOI:

通讯作者 赵谋明 femmzhao@scut.edu.cn

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