

# INFLUENCE OF CAVITATION DISINTEGRATION ON DAIRY FOODS PRODUCTION

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## Abstract

One of the popular trends in dairy industry is final products making without chemical additives using like emulsifying and preserving agents. There are some electro-chemical, physical and acoustical methods that can be used for control and of properties of milk and final products. Cavitation disintegration is the method of acoustical treatment of liquids that can promote physicochemical and structural properties. This article provides an overview of using ultrasonic cavitation in dairy industry.

General task of raw materials processing is to save maximum nutritional value in final products. Currently, acoustic cavitation is used in the dairy industry to perform a large number of processes, which are: pasteurization, homogenization, inactivation of pathogenic microorganisms, emulsification, in the ultrafiltration processes, sonocrystallization. It is used for obtaining lactose-free milk, acceleration of exchange between cells and nutrient medium. At specific parameters of treatment it can reduce duration of enzyme hydrolysis and maintaining activity of certain ferments, which allow stimulating microorganism growth and increase of the biosynthesis rate of biologically active substances. Cavitation treatment is used in biotechnology for accelerating the cells adaptation to the new conditions, and increasing the efficiency of some fermentation processes. At the same time it was noted that modes of cavitation treatment, in which the processed product is exposed to short-term and high-intensity cavitation effects, were not considered and could be one of the aim of future research works as parameters of treatment could provide completely opposite results and effects.

Parameters of cavitation disintegration must be studied, systemized and scientific-based for the needed results providing and should be implemented into industrial scales. At the same time, results of the review can be used for new technology of safety dairy products development.

**Key words:** *Ultrasonic cavitation, Milk, Whey, Inactivation of pathogenic microorganisms, Pasteurization, Sonocrystallization.*