J Food Process Technol 2012, 3:10
http://dx.doi.org/10.4172/2157-7110.S1.010

OMICS Group Conferences
Accelerating Scientific Discovery

International Conference and Exhibition on
Food Processing & Technology

November 22-24, 2012 Hyderabad International Convention Centre, India

Application of ultrasound in dairy industry

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In the 21st century, innovation in the dairy industry will be essential in enhancing international competiveness in a truly global market. Such innovation will also be critical in meeting consumer demands for 'miracle foods' that are not only safe and nutritious, but also natural, economical to manufacture, great tasting, environmentally-friendly and enhance health and well-being quite a challenge. Ultrasonic cavitation is a new powerful processing technology that can be applied safely, environmentally-friendly, efficiently and economically. Ultrasonic cavitation generates physical effects, including agitation, microstreaming, and enhanced mass transport. In some conditions near adiabatic, collapse generates very high temperatures and pressures within the cavitation bubbles leading to the formation of reactive radicals that can be managed or used for desired chemical transformations. Laboratory studies determined that ultrasound can be effective in reducing microbial counts in milk, inhibiting or enhancing enzymic activity, improving the quality of cheeses and yoghurts, incorporating nutraceuticals, enhancing whey ultrafiltration, extracting functional foods, reducing product viscosity, homogenizing milk fat globules, enhancing crystallization of ice and lactose, cutting of cheese blocks and reducing fouling of heated surfaces. The ultrasonic energy required for above applications is low and scaling upto production scale with significant savings in processing cost is feasible.

Biography

Santosh Chopde has completed M.Tech (Dairy Engineering) from NDRI, Karnal (INDIA) and presently he is working as an assistant professor at College of Dairy Technology, Udgir.

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Evaluation of chemical quality of plain pedha sold in selected market of Latur District

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Pedha has a unique important in the market because it is liked by all classes of the people and popular in various celebration like wedding, inaugural functions, to celebrate success in examination or other events. Therefore, the demand for this product is constant throughout the year. The investigation was carried out to evaluate the sensory as well as chemical quality of Latur, Udgir and Chakur *pedha* samples compared with laboratory made plain *pedha*. Variations in composition of *pedha* sample might be due to uncontrolled heating as well as rate of concentration of milk, highest level of sugar addition and quality of milk used for preparation of this product. Therefore, an attempt was made to evaluation of chemical quality of plain *pedha* sold in market of Latur district.

For the qualitative preparation of plain *pedha*, the comparison made between Laboratory made plain *pedha* (T_0) with Market plain *pedha* of Latur (T_1), Market plain *pedha* of Udgir (T_2) and Market plain *pedha* of Chakur (T_3) with addition of 30% sugar. The highest score was found for sensory evaluation of laboratory made plain *pedha* but higher score for chemical evaluation to market *pedha* of Latur, Udgir and Chakur. The finished product was subjected to sensory evaluation by panel of judges. The overall acceptability score for different treatment of plain *pedha* ranged from 7.5 (T_0), 7.3 (T_1), 7.1 (T_2) and 6.2 (T_3). The laboratory made plain *pedha* contains moisture (13.50%), fat (23.76%), protein (15.50%), lactose (15.52%), sucrose (29.45%) and ash (2.27%) which lower than other treatments.

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