Chenchaiah Marella, J Food Process Technol 2013, 4:10
http://dx.doi.org/10.4172/2157-7110.S1.015

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Food Technology, Bioprocess & Cell Culture
October 28-30, 2013 Kansas City Marriott Country Club Plaza, USA

Processing aids for improving heat transfer during drying of granular food materials

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The comparative low price of energy in the past discouraged any emphasis on energy conservation in drying of food stuffs. But under the circumstances of ever increasing energy prices, it is the need of the hour to look for improved energy utilization. In dairy and food industry a large number of products are spray dried. Previously this operation was carried out in a single stage, necessitating the dryer to operate at higher air out let temperatures. To improve this, dryers were developed with two and three stages. Additional stages brought about significant savings in the energy requirements. Fluidized beds have been included as second and third stage dryer in conventional spray dryers. Inclusion of vibrations, centrifugal beds, inclusion of immersion heaters etc. have been tried to improve the heat transfer characteristics of the air - material drying situations. In the present work, various processing aids that improve the heat transfer in drying of granular material will be reviewed.

Biography

Chenchaiah Marella obtained his Ph.D. in Agricultural and Bio-systems engineering. He worked as Assistant and then as Associate Professor of Dairy Engineering for about 15 years, in three agricultural universities in India. He published extensively in peer reviewed journals, presented in international conferences held in Thailand, China and India. He authored several book chapters and presently overseeing the commercialization of research for US dairy and food processors.

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