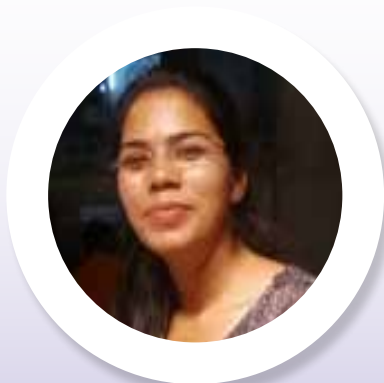


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Process optimization for herbal yogurt preparation incorporated with encapsulated *Caesalpinia bonducella* seed extract

The present study was conducted to optimize the process for the preparation of herbal yogurt incorporated with encapsulated and non-encapsulated *Caesalpinia bonducella* seeds extract. Yogurt is considered a highly valuable food product which is produced by the symbiotic association between the culture of *Lactobacillus bulgaricus* and *Streptococcus thermophilus*. The process of ultrasonication was used for extraction followed by encapsulation using a spray drier. Extracts were encapsulated (to enhance their endurance and hydrophilicity) by spray-drying (at optimized 160 °C inlet and 80 °C outlet temperatures), using an optimized 1:2 ratio of sodium alginate cross linked with inulin as wall material (coating material). The optimized aqueous encapsulated and non-encapsulated extract were used for incorporation into yogurt and then optimization of yogurt based on antioxidant activity, total phenolic contents, sensory and texture analysis. The sample of herbal yogurt with 3% fat and 2% aqueous extract had highest values of % DPPH inhibition (88.82%), ABTS inhibition activity (93.23%), SOSA (85.54%) and TPC (25.77 mg GA eq./g) among other variants. Employment of encapsulated *C. bonducella* seed extract in yogurts enhanced their textural characteristics. Sensorial evaluation of yogurts with encapsulated extract had an enhanced body, appearance, and smoother texture than yogurts with non-encapsulated extract. Although the antioxidant activity and phenolic contents of yogurt containing non encapsulated extract are higher the sensorial evaluations of the 3% fat yogurt with 2% encapsulated extract was best among all. The total polyphenolic contents increased proportionally with increasing levels of encapsulated as well as non-encapsulated extract.



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Biography

Sadhna Mishra has completed her Doctor of Philosophy (PhD) degree in Plant Biotechnology (Title of thesis: Development of Herbal Yogurt Incorporated with Encapsulated *Caesalpinia bonducella* Seed Extract) from the Department of Dairy Science and Food Technology, Banaras Hindu University, Varanasi, India. She has been working with Faculty of Agricultural Sciences, GLA University, Mathura since August 2021. She has published 17 publications till now and also working as a subject matter specialist at Chegg.com. The present research criteria on which she is working are -Green nanotechnology, Encapsulation technology, mycotoxins, Diabetics, Plant growth hormones etc. She has been serving as a annual member of AFST.

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