

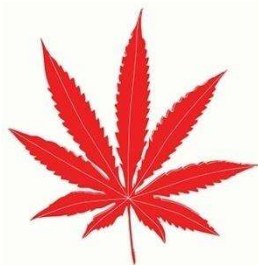


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Conference Abstract

MICROENCAPSULATION OF OMEGA-3 OILS A WAY FOR ENHANCING THE STORAGE STABILITY OF UNSATURATED OILS

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Abstract

The novel foods enriched with bioactive components have shown promising efficiency in mitigating health disorders. In the current study, microencapsulation of Ω -3 fatty acids was carried out for the preservation followed by their incorporation in dietary regimen as bakery bars and further assessment over storage in terms of physicochemical and sensorial attributes. Microencapsulation has emerged as a promising technique attracting immense attention of people to cope with challenges faced by food professionals regarding encapsulation and shielding of sensitive moieties from undesirable surroundings, as well as permitting a controlled release of encapsulated ingredient. Keeping in view the above-mentioned facts, the research work was designed for microencapsulation of two Ω -3 rich oils i.e. fish oil and flaxseed oil from animal and plant sources, respectively. The resultant microcapsules were assessed through various physicochemical tests to evaluate the effectiveness of the microencapsulated powdered oils, in addition storage study of these encapsulated oils was also conducted. Alongside, Ω -3 enriched nutritional food bars were prepared using different formulations of the encapsulated oils. The resultant microcapsules revealed better performance in terms of stability and efficiency that was significant for gum arabic

The authors declare no competing interests

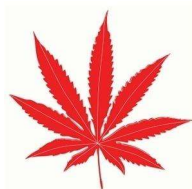
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encapsulated powder in both oils. The combination of gum arabic and maltodextrin imparted compatible results, therefore, gum arabic can be replaced effectively with maltodextrin. Due to powdered nature of resultant oils these can be processed, handled and kept quite easily with long shelf life. The inclusion of this powder in bakery product especially bars can be a good initiative to enhance the Ω -3 intake. The formulation with 5% concentration of both powders i.e. fish and flaxseed encapsulate imparts higher stability and sensory score. For future exploration it is recommended that resultant product must be analyzed for nutrkinetic, bioavailability and efficacy trial. Moreover, it suggests an opportunity for food professionals to boost encapsulated foods in Pakistan with acceptable sensory attributes.

Keywords: Microencapsulation, Omega-3 Oils,

Declaration

The abstract is reviewed and accepted by the Conference Organization Committee of 11th Pak Pharma Healthcare Expo. The presenter was permitted to share his research after final approval of the committee. The scientific research information was presented at 3rd Pakistan Food -Nutrition International Summit 2022 held on December 21-22, 2022 at Pak-China Friendship Centre, Garden Avenue, Islamabad, Pakistan. Hence, the journal is publishing this abstract on behalf of the aforesaid Conference Organization Committee.



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