Hybrid Event
26th International Conference on
Food Technology & Processing
17th International Conference on
Microbial Interactions & Microbial Ecology
October 05-06, 2022
Zurich, Switzerland

Evaluating the applicability of enzymatically extracted soluble dietary fibre from de-oiled mustard and sesame meals as a functional food ingredient

Arpita Banerjee[1,2]*, **Niloy Chatterjee**[1], **Trina Das**[1] and **Pubali Dhar**[1]
[1]University of Calcutta, India
[2]Swami Vivekananda University, India

Oil seeds are an extremely important economically viable food crop. Extraction of oil and oil-bearing materials from oilseeds results in generation of large quantity of residual oil meals worldwide, that sums up to 86.24 million ton approximately. These de-oiled counterparts in spite of high protein, dietary fibre and phytochemical content, receive much less importance. Only a minute proportion is used as manure and animal feed while the major portion is disposed of as wastage and dumped in the open spaces due to a lack of proper resources for handling solid wastes. This necessitates an urgent need for development of a suitable technology for conversion of the seed cake into economically viable products. Our study involves extraction of soluble dietary fibre from the de-oiled seed meals namely mustard and sesame by the enzymatic gravimetric method. Following extraction, the anti-oxidative activities like DPPH Radical scavenging activity, FRAP activity and metal chelating activity were estimated and correlated with their phenolic as well as flavonoid profiles. Functional properties such as solubility, water and oil holding capacity, emulsifying activity, glucose and cholesterol adsorption abilities were also quantified. All the tests were performed using commercial inulin as a control. The extracted soluble dietary fibres demonstrated good anti-oxidative as well as functional properties and exhibited immense potential to be used as a cost-effective functional food ingredient. Bioactive dietary fibre prepared from byproducts of the edible oil industry will facilitate waste reduction and valorization.

Keywords: Deoiled meals, soluble dietary fibre, anti-oxidative properties, functional properties, waste reduction.

Biography

Arpita Banerjee is currently working as a Ph.D. Research Scholar in the Laboratory of Food Science and Technology, University of Calcutta, West Bengal, India. She has completed her graduation and post-graduation in Food and Nutrition, from University of Calcutta, West Bengal, India. She has qualified for the National Eligibility Test as a Junior Research Fellow, to avail the fellowship granted by the University Grants Commission, Government of India, to pursue her doctoral degree. Besides, she is also serving as an assistant professor in the Department of Food and Nutrition at Swami Vivekananda University, Barrackpore, West Bengal, India. Her research interests include extraction of dietary fibre followed by assessment of anti-oxidative, biological, and functional properties.

Received: May 04, 2022; **Accepted**: May 06, 2022; **Published**: October 05, 2022