

# Understanding the beneficial effects of using designer lipids in the formulation of bakery products.

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## Abstract:

The designer lipids (DL) synthesized using enzymatic acidolysis were used as a potential substitute for palm oil shortening (POS) in cookies. DL showed higher oxidative stability than POS and there was no trans-fat found in the case of DL, offering an advantage as compared to significant trans-fat in POS. The unique fatty acid profile of DL containing about  $62.9 \pm 0.1\%$  caprylic acid and  $28.3 \pm 0.0\%$  linolenic acid enhanced the nutritional properties of DL and thus the cookies. The DL-based cookies showed a higher spread ratio, higher set time, and quick spreadability which are highly desirable. Due to the lower aeration properties of DL, the cookies were harder than POS-based cookies. The overall acceptability in terms of sensory attributes evaluated for 28 days was higher for DL-based cookies. The DL proved to be a potential healthy replacement for commonly applied bakery POS having various health issues.

## **Biography:**

Harsh B. Jadhav is a DST INSPIRE Doctoral Research Fellow working in the Department of Food Engineering and Technology at the Institute of Chemical Technology, Mumbai, India whose doctoral research is focused on the areas of nutraceuticals, non-thermal processing, replacement of saturated fat, enzymatic lipid synthesis, etc. He is an experienced researcher with a demonstrated history of working in Research and Development (R&D). Extensively worked on fabrication of designer lipids with the purpose to improve nutritional and functional properties of traditional fat/oil. These new-generation custom-made nutraceutical lipids with their purported health benefits were used as nutraceuticals in food formulations. They were extensively used for frying, baking, and formulation of O/W emulsion and demonstrated superior physicochemical, textural, and oxidative stability in comparison with traditional fats. Further work on the development of a potential substitute for saturated fat mainly focused on bakery applications. He was a university topper in M. Tech at the Institute of Chemical Technology, Mumbai, India with a CGPA of 9.61, and during his master's thesis focused on the utilization of nutraceutical lipids in the formulation of food products. He received his Bachelor's degree in B. Tech Food Technology from Laxminarayan Institute of Technology, Nagpur, India, and had a work experience of more than 5 years in the dairy industry and as a technical advisor in the bakery processing sector. His doctoral research is supported by the Department of Science and Technology, Ministry of Science and Technology, Government of India. He can be contacted at [harshjadhav.ict@gmail.com](mailto:harshjadhav.ict@gmail.com).