ONLINE ISSN : 1881-3984
PRINT ISSN : 1344-6606

Food Science and Technology Research
Vol. 10 (2004) , No. 2 pp.103-110

[PDF (1041K)] [References]

Nutritional Characteristics and Health Benefits of Diacylglycerol in Foods

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(Received: February 20, 2004)
(Accepted: April 27, 2004)

In this review nutritional characteristics and the health benefits of dietary diacylglycerol are summarized. The global obesity epidemic and our knowledge of its relation to human health have increased research on dietary fat control. Among several approaches, we have focused on the structure of acylglycerols and have studied nutritional functions of diacylglycerol oil in comparison with conventional triacylglycerol oil with the same fatty acid composition. A cooking oil product containing 80% (w/w) or more diacylglycerol has been used in Japan since 1999 as a "Food for Specified Health Use" approved by the Ministry of Health, Labour and Welfare. The approved claims are: (i) Less increase in postprandial triacylglycerol concentrations in the blood and (ii) Less likelihood of being stored as body fat. These effects are probably the result of the unique metabolic characteristics of diacylglycerol because its bioavailability is practically the same as that of triacylglycerol oil. Although studies of its digestion, absorption and metabolic processes are yet to be completed, the ingestion of diacylglycerol oil has been shown to be beneficial in reducing risk factors for life-style related diseases.

Keywords: diacylglycerol, triacylglycerol, body weight, body fat, lifestyle-related disease, health benefit, risk factor

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