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Physico-chemical Changes in Khoa Prepared from Low Lactose Milk

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Abstract—*Lactose is a disaccharide consisting of glucose and galactose linked by β 1- 4 glycosidic linkages. It is a major carbohydrate present in milk (45-50 g/litre). High lactose content in dairy products leads to lactose crystallization resulting in sandy or gritty texture in dairy products. More than 70% of the world population suffers from lactose intolerance mainly due to absence of intestinal β-galactosidase enzyme and thus find difficulty in consuming milk and milk products. High lactose concentration in the large intestine of human can lead to tissue dehydration, poor calcium absorption and fermentation of lactose by intestinal micro-flora resulting in vomiting, diarrhoea, bloating and flatulence. In present investigation, attempts were made to study the physico-chemical changes in khoa using lactose hydrolyzed milk. Buffalo milk was used for lactose hydrolysis using commercial preparation of β-galactosidase at different levels i.e. 0.5ml/2.5 litre, 1ml/2.5 litre,1.5ml/2.5 litre in milk separately at 5-7ºC for 12 h. It was observed that 95% of lactose in milk was hydrolyzed. The conversion of lactose into glucose and galactose was quantified by HPLC using RI detector. Lactose hydrolyzed milk was further converted into khoa adopting standard procedure and were stored at refrigeration temperature to study the physico-chemical changes. Chemical constituents of lactose hydrolyzed khoa were significant higher in terms of glucose, galactose, HMF, Lightness, redness value and lower in term of acidity, hardness and chewiness. The low lactose khoa had better shelf-life as revealed by microbiological study.*

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