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Optimization of stevia concentration in Rasgulla (sweet syrup cheese ball) based on quantity

Gurveer Kaur and **Goswami T K**
Indian Institute of Technology, Kharagpur, India

Rasgulla (a sweet syrup cheese ball), a sweet spongy dessert represents traditional sweet dish of an Indian subcontinent prepared by chhana. India had 69.2 million people living with diabetes (8.7%) as per the 2015 data. Asia accounts for 60% of world diabetic population. World over more than 64.67% people is obese. 100 g of Rasgulla contains 186 calories and so it is a driving force behind obesity and diabetes. To reduce Rasgulla's energy value sucrose mainly should be minimized, so instead of sucrose, stevia (zero calorie natural sweeteners) is used to prepare Rasgulla. The study is conducted to optimize stevia concentration in Rasgulla based on quality and consumer demand (sensory evaluation). In this study three samples were prepared with sucrose to stevia ratio taking 100:0 (as control sample), (i) 50:50 (T1), (ii) 25:75 (T2), and (iii) 0:100 (T3) from 4% fat milk (standardized). It was found that as the sucrose concentration decreases the percentage of fat increase in the Rasgulla slightly. Sample T2 showed <0.1% (±0.06) sucrose content. But there was no significant difference in protein and ash content of the samples. Whitening index was highest (78.0±0.13) for T2 and lowest (65.7±0.21) for the control sample since less sucrose in syrup reduces the browning of the sample (T2). According to optimization study, the preferred (high quality and excellent sensory score by fuzzy logic) order of samples was as follows: T2>T1>control>T3. Low sugar content Rasgulla with acceptable quality can be prepared with 25:75 ratio of sucrose to stevia.

Biography

Gurveer Kaur is a Research Scholar in Food Process Engineering since 2015 at Agricultural and Food Engineering Department in IIT Kharagpur. She did MTech in Food Process Engineering from IIT Kharagpur. Her research interest is mainly on development of low calories dairy products for diabetic and health conscious persons.

kaurgurveer91@iitkgp.ac.in

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