

## Effect of inulin and oat flour on viability of probiotics and physicochemical properties of reduced fat synbiotic ice cream

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### Abstract:

**Purpose** – The purpose of this study is to investigate the viability of probiotics, physicochemical and sensory properties of reduced fat synbiotic ice cream.

**Design/methodology/approach** – The treatments were as follows: control was made by the addition of *Lactobacillus salivarius* NBIMCC 1589 and *Lactobacillus crispatus* NBIMCC 2451 (1:1). The treatments (T1, T2 and T3) were made with the addition of *L. salivarius* NBIMCC 1589 and *L. crispatus* NBIMCC 2451 (1:1) 2% oat flour, 2% inulin and 4% oat flour inulin (1:1). Physicochemical parameters (pH, moisture, fat, protein, fibre, ash, overrun, first dripping time and melting rate) were determined.

**Findings** – The ice cream with inulin and oat flour had lower moisture content, which was recorded 70.41, 69.88 and 68.82% for T1, T2 and T3, respectively. While the protein, fat and ash content of treated samples increased. The highest acidity (0.43%) was recorded in T3. The overrun increased by around 43% in T3 compared with control. The viable counts of probiotics were significantly ( $p \leq 0.05$ ) decreased by two or three log cycles. Finally, T3 received the highest sensory score, which could be due to the combination between oat flour and inulin.

**Originality/value** – A novel ice cream was produced using a combination of inulin and oat flour, which enhanced the viability of added probiotics. Reduced fat synbiotic ice cream was a good carrier for probiotics, which facilitates the production of healthy dairy products.

**Keywords:** Reduced fat synbiotic ice cream, Oat flour, Inulin, Probiotics, Synbiotic

