

DEVELOPMENT OF MISTI DAHI (SWEETENED YOGHURT) FROM MIXTURE OF GOAT AND COW MILK

ABSTARCT:

Health benefits of goat milk are mainly attributed to the presence of higher mineral content than cow milk and are said to be naturally homogenised and the nutritive value of goat milk is said to have increased during fermentation ,higher content of zinc, iron and magnesium; stronger lactoperoxidase (antimicrobial) system as well as better immunological and antimicrobial characteristics due to which goat milk was choosen for this study. This might increase the viability of goat milk products which are neglected mainly due to goaty flavor. The proximate analysis showed that goat and cow milk contains the same amount of fat, protein, carbohydrate, total solids but was high in minerals. The sugar with mixture of cow and goat milk combinations played an important role in misti dahi formulation. In this study, we investigated the physiochemical properties, texture analysis, syneresis, antioxidant activity, acidification activity measurement and sensory analysis of misti dahi made from mixture of cow and goat milk. The main aim of the study was to optimize the formulation of mixed milk misti dahi using RSM (response surface methodology) and for this a Box-Behken design was adopted for the experimental design and models, taking cow milk volume (60-100), goat milk volume (20–40) and sugar% (8-4) as factors 1, 2 and 3 respectively and using acidity, firmness, overall acceptance, syneresis and whiteness index as responses. Through the response surface analysis, the optimum formulation conditions of mixed milk misti dahi was found to be 73.59 cow milk volume, 18.99 goat milk volume and 14% sugar with 0.819 desireability. Acidity increased significantly ($P \leq 0.05$) upto 0.9 ml with addition of cow milk and sugar, firmness also increased significantly ($P \leq 0.05$) upto 4.134 N with increase in cow milk percentage and sugar, Whiteness index increased significantly ($P \leq 0.01$) with increase of goat milk percentage and overall acceptability ($P \leq 0.001$) increased significantly with addition of sugar and cow milk percentage. With increase of goat milk percentage in the mixture it was observed that antioxidant activity also increased significantly ($P \leq 0.001$). Optimised responses were found to be 0.79 mL acidity, 17.93 % Syneresis, 3.53 N firmness, 76.59 Whiteness index and 7.79 overall acceptability. The predicted values registered no significant ($p < 0.10$) differences from the experimental results.

Keywords: Goat milk , cow milk , RSM , whiteness index, firmness.