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EFFECTS OF REFRIGERATION, DEEP FREEZING-SPRAY DRYING AND PASTEURIZATION ON IGG BUFFALOCOLOSTRUM PRESERVATION

S. BHAVANI RAMYA[1], D. RAMASAMY[2] & DHINESHKUMAR. V[3]

[1]M. Tech Scholar, College of Food and Dairy Technology, Tanuvas, Chennai

[2]Professor and Head, Department of Food Science and Technology, CFDT, Tanuvas, Chennai

[3]Research Scholar, College of Food and Dairy Technology, Tanuvas, Chennai

ABSTRACT

The aim of this paper was to evaluate the effects of refrigeration, several different methods of thawing, and pasteurization on the concentration of IgG in buffalo colostrum. Four different experiments were designed to analyse these effects. In the first of these, 50 samples of buffalo colostrum were stored in a cold-storage room at a temperature of 4 ◦C for a 3-month period. Nostatistically significant effects were observed within this time, although there was a reduction in IgG concentrations (51.05and 25.11 mg/ml IgG at day 0 and 91, respectively). In the second experiment, 20 samples of buffalo colostrum were frozenand subsequently thawed using four different methods: spray drying (60 ◦C), refrigeration (4 ◦C), deep freezing (-20°C) and freeze drying (55 ◦C). The process was carried out seven times for each of the four methods. The method of thawing did notaffect the colostrum IgG concentration. However, the repetition of freezing and thawing tended to reduce IgG concentrations; albeit to no significant degree (15.50 and 10.73 mg/ml IgG at cycle 0 and 7, respectively). In the third experiment, 30 buffalocolostrum samples were used and a reduction ofapproximately 35% of IgG concentration after pasteurization was observed. Refrigeration, freezing and pasteurization are suitable methods for conserving buffallo colostrum.

KEYWORDS: Colostrum, Buffalo, Refrigeration, Thawing, Pasteurization