CHAPTER 1.0

INTRODUCTION
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The emergence of modern dairy industry in India is one of the most significant developments of the recent time, and a number of dairy plants have been established in Government, private and cooperative sector to manufacture different milk products like skim milk powder, butter and ghee. These products have obvious advantage of longer keeping quality and assured market. At present, a considerable amount of unsalted butter is being manufactured in the country to serve as a source of milk fat to produce reconstituted milk and various food products where milk fat is used as one of the ingredients. The use of unsalted butter/butter oil for recombination in lean season not only helps in augmenting the market milk supply but also improves the processing capacities of the dairy plants which otherwise would be operating at under rated capacities and thus causing loss to the organisation owning these plants.

The process of drying is adopted in the manufacture of dried milks as it reduces the volume of the milk solids to be stored, increases the shelf life and can easily be transported from the place of production to the place of demand. The unsalted butter has the advantages of storage of milk fat in a concentrated form (less volume) and can be used for the production of fluid milk and other products without imparting any objectionable
flavour if stored under normal conditions. Unsalted butter requires the facilities of the expensive cold storage operating at sub-zero temperatures. It is not only inconvenient to handle but also susceptible to mould growth if improperly stored. It also lacks desirable emulsification properties. Limited amount of whole milk powder is also being manufactured in the country to conserve the milk solids.

At present, small quantity of dried cream is being manufactured in the United States of America. Dried cream is a misnomer term. It is rather a high fat milk powder and if reconstituted does not produce cream but high fat milk. The addition of skim milk powder would be necessary to the reconstituted high fat milk to increase its SNF content to the recommended level of recombined milk. The product could also be used in the manufacture of ice-cream, confectionaries, bakery, meat products and a variety of other food products in which milk fat is used as the major ingredient. A good quality cream cheese and Neufachattle cheese has been produced from dried cream. A limited amount of research is reported on the manufacture of dried cream from cows milk whereas no research has been carried out on the product manufactured from buffaloe's milk. There is a large scope of production of dried cream from buffaloe's milk which constitutes about 61.5% of the total milk production in India. The technology of dried cream from cow's milk may have to be altered to adapt buffalo milk in view of the inherent physico-
chemical differences in the two milk systems.

It has been established by an extensive research work that buffaloe's milk has a different composition as compared to cow's milk. The buffalo milk has higher fat content and a higher concentration of larger size fat globules as compared to cow's milk. The differential make up of the fat component of the buffalo milk results into higher free fat content in dried whole milk. The dried cream being a high fat containing product would have higher free fat resulting into comparatively lower keeping quality of the product.

Buffaloe's milk has higher protein content compared to that of cow's milk and especially the casein of buffaloe's milk has different compositional make up. The particle size of the buffaloe's milk casein micelle is larger and has faster settling rate at a lower centrifugal force. The calcium and phosphorus contents of buffaloe's milk are higher as compared to cow's milk. The difference in the compositional make up of the buffalo milk proteins results into its lower heat stability and this factor has significant effect on the dispersion properties of dried milks manufactured from buffaloe's milk.

The present study was therefore planned to investigate the problems associated with the manufacture of dried cream from buffaloe's milk. The manufacturing
procedures were altered to obtain a product of long shelf life. A study of the keeping quality at room temperature under tropical conditions and use of the product was carried out with a view to use the product especially in the production of reconstituted milk and ice-cream.