INTRODUCTION

India is a country of vast culture heritage. A major part of population live in villages distributed all over the country having different climatic conditions. Milk is the most important source of the energy in our diet and milk is known as a balanced food. Most of the milk is being produced in villages by individual producers. On account of lack of transport facilities, a major portion of milk is being converted in to various milk products.

The keeping quality of milk is very poor because all suitable conditions are available in milk for the development of the micro-organisms. It is a main problem in India, that no facilities are mentioned at very place to check this problem. Therefore, a large amount of liquid milk is converted in to sweet meat for the long time keeping quality.

India has first position in world in case of milk production, while U.S.A. stands second. The milk production in India during 2000-2001 was 88.6 million tonnes and per capita availability was 231.44 gm per day.

Khoa is an Indigenous milk product of considerable, economic and nutritional importance to the people of this country. This is par-
tially desicated milk product prepared by rapid evaporation of moisture until the total solids content of the product reached to 75 percent. It is extensively used in a variety of sweet and salted preparations. Its consumption is increased to manifold in the festivals and at special occasions.

According to the PFA rules (1976) Khoa is the product obtained from cow or buffalo (goat or sheep) milk or a combination thereof by rapid drying. The milk fat content should not be less than 20% of the finished product.

In India milk production is mostly rural in nature while the consumption is urban. All the milk product in remote country, there having no suitable means of transport, can not reach to the many consumers. Hence it become surplus, thus only alternative each producers is to conserve as many constituents of milk as possible, a or more alike to that of original milk and that is the Khoa making.

Khoa constitutes one of the two chief bases (the other being chhana) for preparing indigenous sweets. The production of khoa in India (1966) was estimated to be about 4.9% of total dairy production and 8.7% of the milk used for manufacture of milk products. Today the total khoa production may be estimated at over 300 million Kg, valued at rupees 300 crores at the present rates. The preparation and use of khoa are confined mostly to the northern and western region of the country. By far the largest amount is contributed by U.P., where nearly 36% of the country's total khoa production takes place.

Khoa is a condensed source of all the nutrients. Its nutritional
significance is by virtue of its high fat content and carbohydrates, that are essential for the successful growth and development of the body. It is 4-6 times more nutritious than milk in terms of unit weight and calorific value. It is an enriched source of energy and its calorific value is ranges between 1800 to 2337 calories per pound (warner, 1953). It has higher content of proteins, like tryptophane and lysine, which are not commonly found in vegetable protein. It is a good source of unsaturated fatty acids of animal origin. Minerals like calcium and phosphorus, fat soluble vitamins A, D, E, and K are found in abundance, Six ounce of khoa is supposed to be sufficient to satisfy an adult's mineral requirement. Like-wise Khoa, the pera is the source of all above nutrients.

Usually Khoa used as a raw material for pera making, may be kept well for 48 hours under ordinary conditions of handling and storage followed by deterioration due to the microbial action (Davis, 1940), Rapid spoilage of khoa is attributed to the contamination of moulds from external sources. Visible signs of deterioration and marked breakdown of the constituents of Khoa have been observed by Ahmad & Ranganathan (1967). It was also noted that deterioration was very rapid at higher temperature due to microbial action, General appearance and organoleptic qualities of Khoa, are also affecte to a great extent. The sugar added in khoa for pera making acts as preservative in increasing keeping quality of pera as compared to khoa.

Both pathogenic and non-pathogenic micro-organism are found in khoa and pera. It serves a suitable medium for growth and transmis-
sion of pathogenic micro organism, thereby it is a potential source of
danger to the public health, if not properly handled. Bacteria enter into
Khoa based pera from two sources, i.e. from raw milk and from con-
tamination during manufacturing and handling processes. Since milk
is treated to a high temperature during Khoa making, most of the bac-
teria present in raw milk are destroyed except few that are spore
formers or heat resistant. Therefore, the chief source of micro organ-
ism in Khoa and pera is the post-preparation contamination. These
sources of contamination are the utensils, sugar content, store rooms,
persons coming in contact of Khoa and pera making and handling and
packing practices. Undoubtedly pera prepared from Khoa is an ideal
nutrient and economic milk product for human consumption but at the
same time it may be harmful also, if not properly prepared and handled
because it provides the same nutrition for the growth of micro-organ-
ism. Therefore the microbiological quality of pera is of importnace to
prolong the life of Khoa based pera as well as to save the lives of
consumers against pathogens.

Lal pera Khoa based sweet-meat which is brown to light brown
in colour with firm body and semi smooth texture. It is prepared by
using technique that are suitable for small scale preparation. Khoa
and sugar mixed in shallow pan with concomitant heating and stirring
to obtain dough. The dough is cooled down, then lal pera is made
either by palm of both hand or by mould. Two types of pera are pre-
pared in the markets.

1. Khoa Pera
2. Doodh Pera

It may be generally stated that food to be really nutritious must contain the protein essential for body building, fat to supply heat (energy), sugar essentially a heat energy producer, mineral matter for growing tissues of the body and for the normal metabolism and vitamins for normal growth and physiological functions. All these essential are found in milk and also in Khoa based lal Pera. Therefore Khoa as well as lal pera may be described as an ideal food if properly prepared and handled.

During preparation of lal pera, as milk is subjected to high heat treatment for Khoa making, majority of micro-organism present in it are destroyed. However, subsequent contamination may take place due to addition of contaminated sugar, improper handling of product and unhygienic surroundings in which it is prepared. It is very easy to transport the lal pera up to any distance, but on the other hand if it is sufficiently moist then it will permit the growth of micro-organisms, moulds and give the visible growth on its surface within few days of storage at room temperature. Usually Khoa used as a raw material for lal pera making may be kept well for 48 hours.

Resultantly, the quality of the product vary from one producer to another. Considering the popularity of the product and aforesaid facts, the present investigation has been taken up with the following objectives:
5. Objectives:

1. To find out the type of milk most suitable for Lal pera making.
2. To ascertain the effect of different sugar levels on the quality of Lal Pera.
3. To ascertain effect of different packaging materials on the quality of Lal Pera.
4. To ascertain shelf life of Lal Pera stored at room temperature for different periods of time.
5. To assess physico-chemical and microbiological qualities of Lal Pera.
6. To assess the cost of production and profits of Lal pera making.