DEPARTMENT OF LIVESTOCK PRODUCTS TECHNOLOGY

TOPIC: KHOA /MAWA

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Introduction

Define: According to the PFA Rules (1976) khoa is product obtain from cow and buffalo (goat or sheep) milk, or a combination there of, by rapid drying. The milk fat content should not be less then 20 percent of the finished product.

Classification:

- **Pindi**
  - Fat: 21-26
  - Moisture: 31-33
  - Sweets: Burfi, Peda etc.

- **Dhap**
  - Fat: 20-23
  - Moisture: 37-44
  - Sweets: Pantooa, Gulabjamun etc.

- **Dhanedar**
  - Fat:20-25
  - Moisture: 35-40
  - Sweets: kalakand Gourd barfi etc.

Pindi Dhap Dhanedar

Composition of milk for khoa

Composition of khoa	Cattle milk	Buffalo milk
1. Moisture	25.6	19.2
2. Fat	25.7	37.1
3. Protein	19.2	17.8
4. Lactose	25.3	22.1
5. Ash	3.8	3.6
6. Iron (ppm)	103	101

Preparation of khoa:

- Receiving of milk
- Boiled in a karahi over a brisk non smoky fire
- Vigorously stirred or constantly scraped using khoa making machine
- Constant evaporation of moisture take place
- No sugar is added
- Dehydration continues
- Heat coagulation of milk protein
- Abrupt change in color
- Stirring cum scrapping increased
- Khoa prepared

Physical changes in khoa with respect to cow and buffalo milk

Particulars	Cow milk	Buffalo milk
color	Pale yellow, brown tinge	Whitish, brown tinge
Appearance	Moist surface	Slightly oily
Body	Slightly hard	Soft
Texture	Slightly sandy	Smooth, granular
Smell	Rich, nutty	Rich, nutty
Taste	Slightly salted	Slightly sweet
Suitable for sweets	Suitable	High suitable

Yield of khoa:

- **Normally the yield of khoa (with 28 per cent moisture) range from 17 to 19 per cent from cow milk and 21 to 23 percent from buffalo milk.**

- ✓ Type of khoa (higher moisture content is certain to yield higher yield.
- ✓ Type of milk.
- ✓ Quality of milk (total solids content, having high total solids content).
- ✓ Extent of dehydration (more the dehydration less the yield).
- ✓ Losses in handling.

Packaging and Storage:

- **Packaging:** Normally individual khoa-pat are not packaged. However, the following modern packaging materials and forms can be profitably used. (example : Vegetable parchment paper wrappers, polythene film bags, tin-plate etc.

- **Storage :** khoa has a low keeping quality at room temperature, and storage at low temperature(5-10℃).
- Higher the temperature of storage lower is the shelf life.

Defect in khoa, their causes and prevention:

- **Flavour :**

Defect	cause	prevention
Smoky	Smoky fire used for boiling	Using non smoky fire
Sour/Acid	Excessively high acidity milk used	Using fresh sweet milk

- **Body and texture**

Defect	cause	prevention
Hard body	Low fat content milk used, low moisture in khoa,	Using optimum fat content, optimum moisture content
Texture	High acidity milk used, Sand like particles	Used fresh milk, Correct straining of milk

➢ Colour and appearance:

Defect	Cause	Prevention
Dry surface	Excessively low fat content milk	Using milk of optimum fat
Browning and burnt particles	High heating temperature,	Optimum temperature required
Mouldy surface	High moisture in khoa, High humidity in store room	Optimum moisture, Optimum humidity in store room
Water leakage	Incorrect method of manufacture	Correct method of manufacture

THANK YOU