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Government of India

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RABRI PROCESSING

AATMANIRBHAR BHARAT

PM Formalisation of Micro Food Processing Enterprises Scheme (PM FME Scheme)

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INTRODUCTION

- ✓ Indian traditional sweetmeats (sweets / mithai) are very popular in our country and worldwide.
- ✓ Around 50% milk produced in India is converted to traditional Indian dairy products.
- ✓ Mostly, condensed milk and coagulated milk products are used for the preparation of sweets, cereal based sweets, and others.
- ✓ Condensed milk-based sweets are rabri, peda, burfi, kalakand, milk cake etc.
- ✓ Coagulated milk-based products are Channa, Rasogolla, Rasmalai, Sandesh etc

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INTRODUCTION

Rabri is a heat desiccated products mixed with sugar, cardamom, kesar and flavour etc. and is widely consumed in our country. As per Food Safety and Standards Regulations (FSSR), 2011 Rabdi/Rabri is a sweetened concentrated whole milk product with thickened malai layer obtained by evaporation and concentration of milk.

It shall be free from added starch and blotting paper. The extracted fat from rabri shall meet the standards for Reichert Meissl value, Polenske value and Butyro-refractometer reading as prescribed for ghee.

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COMPOSITIONAL SPECIFICATIONS OF RABRI (FSSR), 2011

S. No.	Parameter	Rabri (range)
1.	Moisture, %,	45.0 – 59.30
2.	Fat	10.0 – 19.80
3.	Protein	3 - 9.5
4.	Lactose	10.15 – 13.70
5.	Sucrose	10.50 – 14.00
6.	Ash	Nil

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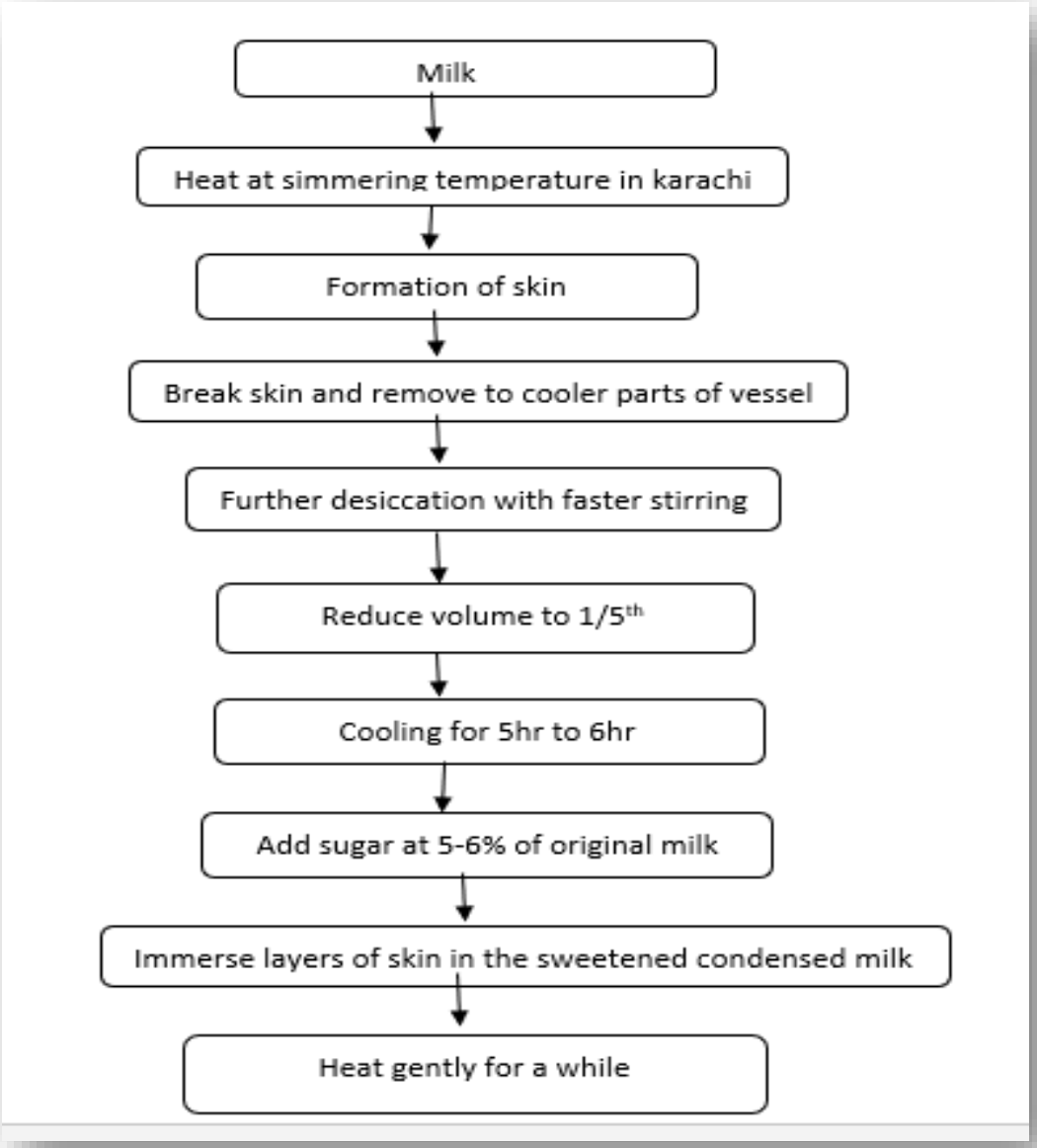
TRADITIONAL METHOD OF RABRI

Milk with high fat percentage were evaporated in a shallow karahi

When the amount of milk is concentrated to about 3-4 folds, sugar is added.

Finally the malai, which was collected on cooler side of the karahi is remixed with concentrated sweetened milk.

TRADITIONAL METHOD OF RABRI



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TRADITIONAL METHOD OF RABRI

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LIMITATION OF TRADITIONAL PROCESS

Several limitations of this method such as

1) Time and labor consuming

2) Large variation in quality

3) Poor keeping quality

4) Small scale production

5) Smoky smell

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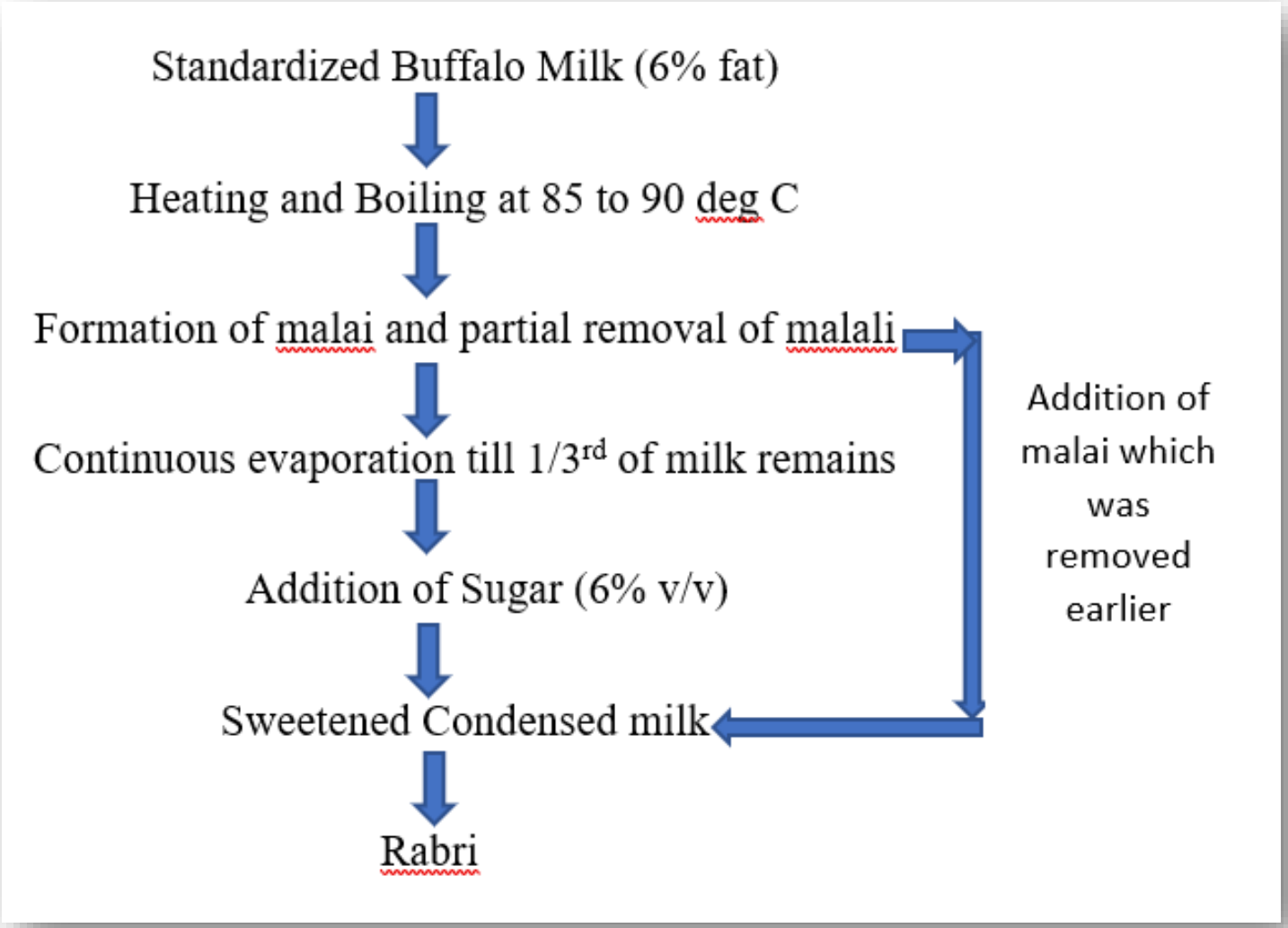
IMPROVED METHOD FOR RABRI



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RABRI PREPARATION METHOD (STEP BY STEP)

a) Test milk for organoleptic quality, fat, SNF and acidity.

b) Standardize milk preferably to 6% fat and 9% SNF.

c) Filter/ strain through a muslin cloth.

d) Transfer milk into a heating kettle/ Karahi.

e) Heat upto 85-90^{o}C and then leave undisturbed.

f) When a layer of malai is formed on the surface of milk, remove it on the cooler side of the kettle/ Karahi. Repeat this process several times until about 1/10th of the initial volume of milk is removed in form of malai. By using a shallow kettle, the surface area is increased and formation of malai will be more and faster.

RABRI PREPARATION METHOD (STEP BY STEP)

g) Transfer all the malai removed as above in a separate container.

h) Start boiling the remaining milk. Scrap and agitate vigorously to prevent burning of milk solids. Condense to about 3 folds (~ 40% total solids).

i) Add sugar @ 6% of initial amount of milk to condensed milk and mix thoroughly by giving one boiling.

j) When still hot, remix malai to sweetened milk. Also add flavourings/ nuts/ cardamom (optional) at this stage.

k) Note the weight of product and draw a representative sample.

RABRI PREPARATION METHOD (STEP BY STEP)

l) Fill the product immediately into PET jars/ glass bottles, which have been previously cleaned and sanitized.

m) Cool the product by placing the containers into chilled water.

n) Store under refrigeration conditions.

o) Analyze the sample for chemical and sensory attributes

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ADVANCE MANUFACTURING METHODS

Scraped surface heat exchangers (SSHE) are presently used for the continuous manufacture of khoa. Since rabri is also a heat-desiccated product like khoa, though to lesser extent, SSHE can be used for pre-concentration of milk to the solids level as of rabri. The flaky texture, which is an integral and desirable attribute of rabri and produced by adding malai, can be simulated by incorporating similar fibrous and flaky material in from of shredded chhana/paneer to this concentrated milk

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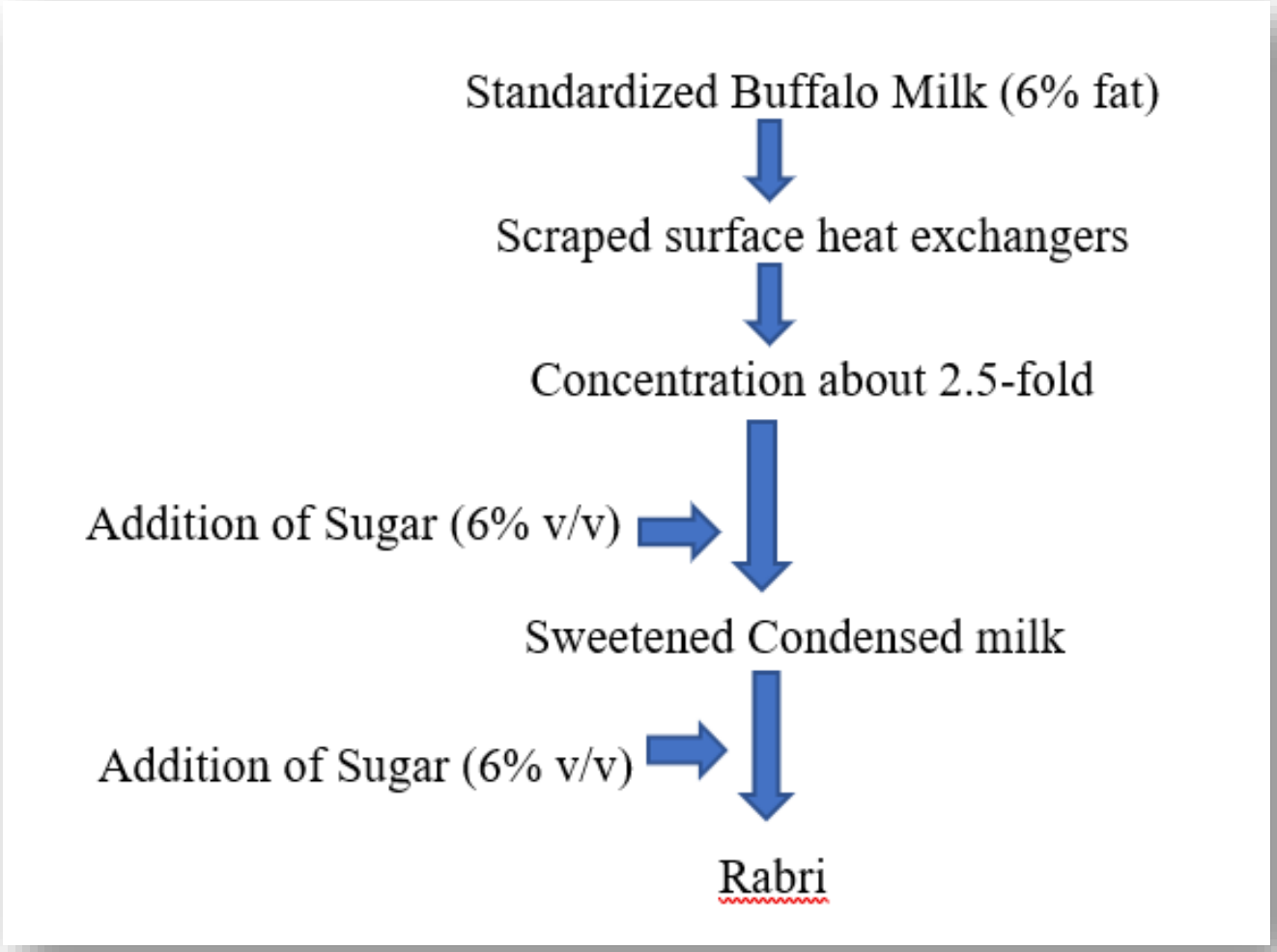
LARGE SCALE PRODUCTION FOR RABRI



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RABRI PRODUCTION-MACHINERIES

Steam jacketed kettle

Multipurpose VAT
(Rotating type / rotary scrapper)

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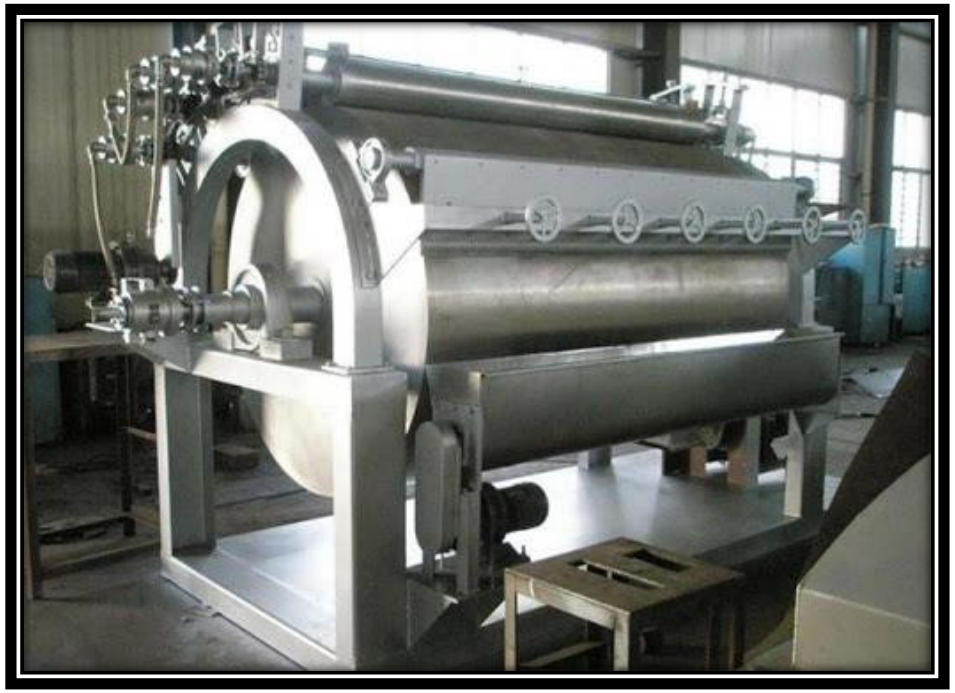
RABRI PRODUCTION- ADVANCE MACHINERIES



Roller dryer machine

Scraped surface conical vat

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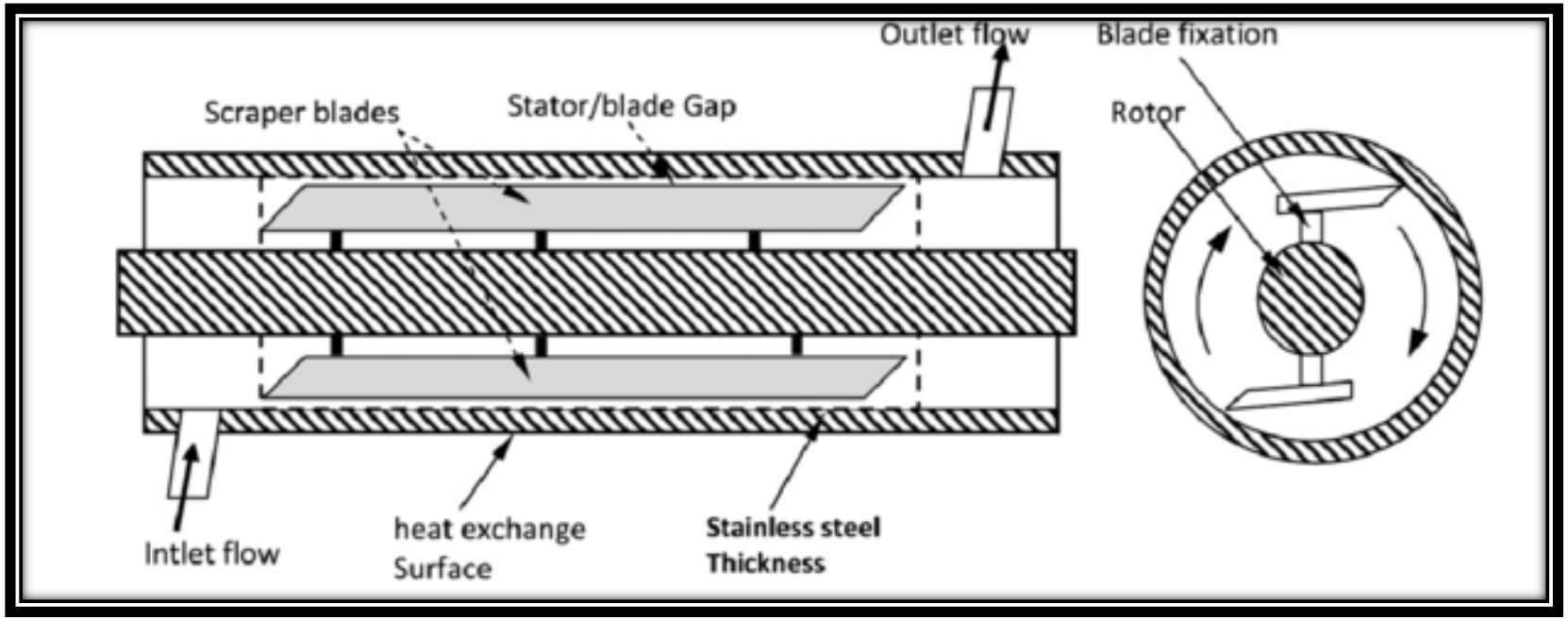
RABRI PRODUCTION-ADVANCE MACHINERIES



Thin film scraped surface heat exchanger (TSSHE)

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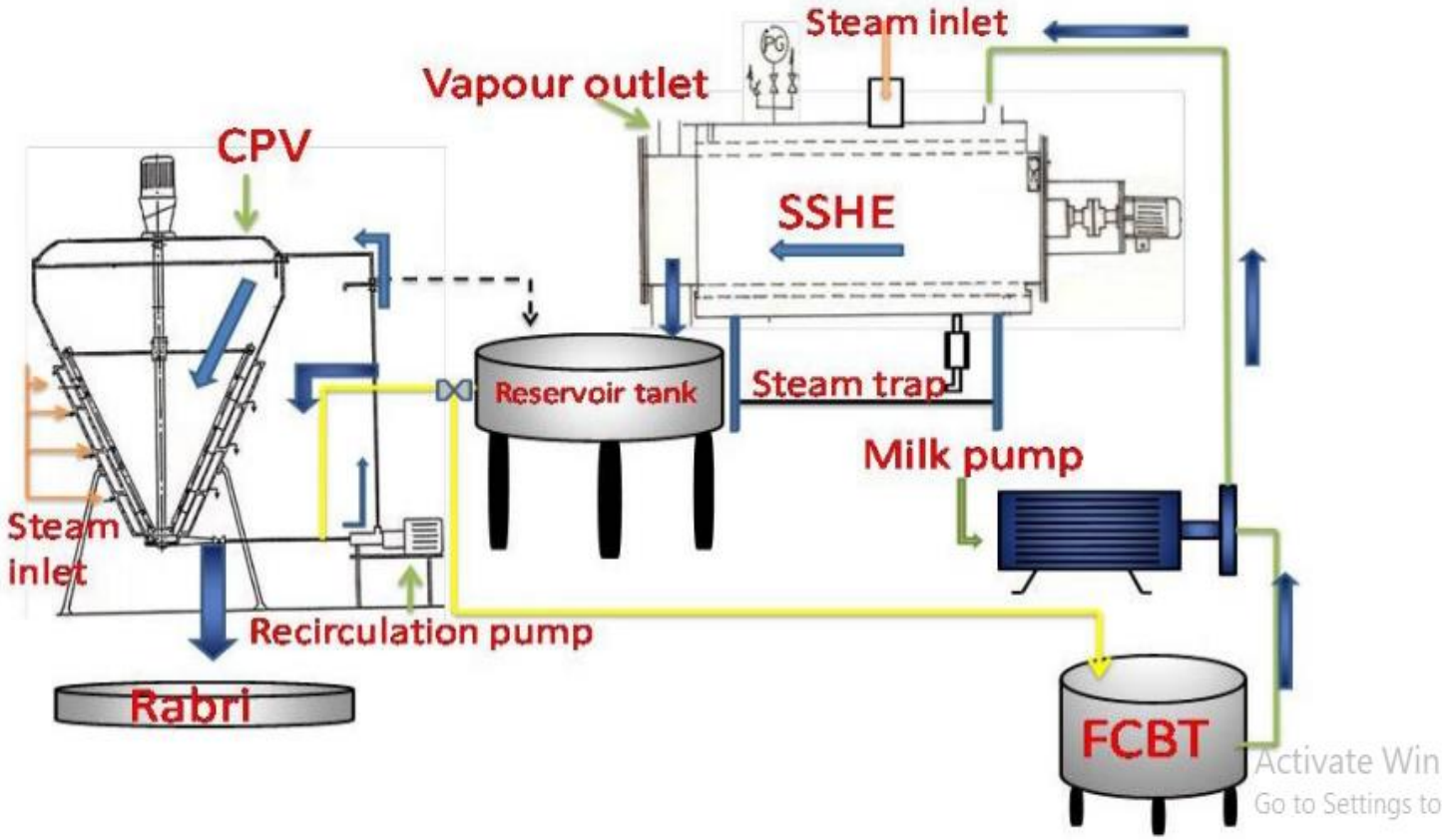
RABRI PRODUCTION-ADVANCE MACHINERIES



Scraped surface heat exchanger (SSHE)

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SENSORY QUALITY OF KHOA

- **FLAVOUR:** A slightly cooked and caramelized flavour along with pleasant sweet creamy taste is acceptable by the consumers.
- **BODY & TEXTURE:** The samples having more layers of malai along with some liquid portion were rated high in market.
- **COLOUR & APPERANCE:** Rabri samples having light yellow and white colour with slight tinge of browning are more preferred by the consumers.

SHELF LIFE AND YIELD OF KHOA

- **Shelf life:** Rabri can keep well for about 2-3 days at room temperature and 10-15 days at refrigeration temperature.

- **Yield:** Yield of rabri depends on total solids of milk, ratio of concentration of milk and amount of sugar added. In general, 25-28 per cent yield can be expected from buffalo milk.

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RABRI PRODUCTION (Defect and Adulteration)

Defect/Adulteration	Solution
Smoky color	Use of LPG cylinder
Sour and Acidic	Use fresh milk
Rancid	Store in refrigerated storage
Brown and burnt particle	Optimum heating temperature
Blotting Paper	Use of hydrochloric acid: Presence of fine fibres to the glass rod

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ADULTERATION IN RABRI

- A layer or flaks of cream or malai in rabri is mostly preferred by the consumers. Blotting paper is generally used for the adulteration in Rabdi.

- Take a teaspoon of rabri in a test tube. Add 3 ml of hydrochloric acid and 3 ml of distilled water. Stir the content with a glass rod. Remove the rod and examine. Presence of fine fibres to the glass rod will indicate the presence of blotting paper in rabri.

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PACKAGING MATERIAL FOR RABRI

- Packaging of rabri is mainly done to protect the products from outside environment especially after the completion of process so that products can retain flavor, freshness for a longer period of time without the oxidation of fat.

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Few manufactures (Machineries) *listed on www.indiamart.com*

- Tirth Engineering, Shivane, Pune, Maharashtra
- Sunshine Industries, Sector 10, Noida, Gautam Budh Nagar, Uttar Pradesh.
- Jackson Machine, Odhav Industrial Estate, Ahmedabad, Gujarat
- Ambica Engineering Works, Bengaluru, Karnataka
- Deokali Engineering Works, Ashok Nagar, New Delhi
- Nexgen (india) Food Machine Industries, Rajpura, Patiala, Punjab
- Indian Machine Mart, Patparganj, New Delhi

For More details Contact:

National Institute of Food Technology and Entrepreneurship and Management
Ministry of Food Processing Industries
Plot No. 97, Sector-56, HSIIDC, Industrial Estate, Kundli, Sonipat, Haryana-131028

Website: http:www.niftem.ac.in

Email: pmfmecell@niftem.ac.in
Call: 0130-2281089