

Meat Processing for Profitable Entrepreneurship



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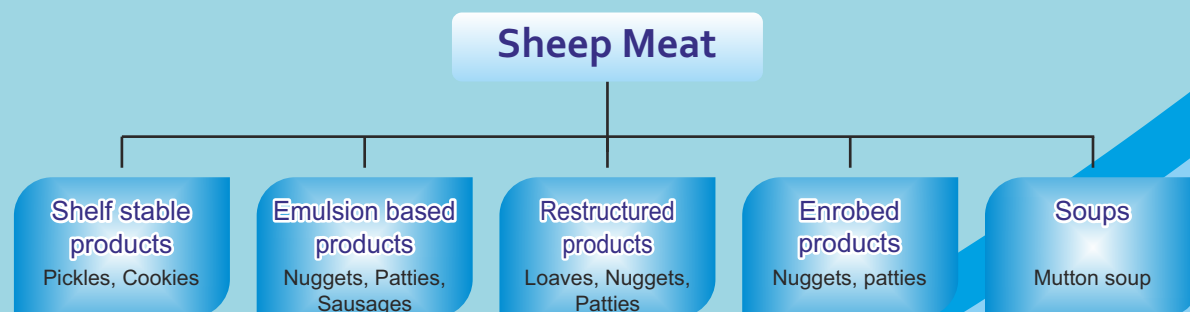


Value Addition of Meat

- ❑ Meat : Nutritious food, rich in proteins of high biological value
- ❑ Rising demand of meat with changing socio-economic status and education
- ❑ Indian sheep meat production: 556 million kg annually
- ❑ Meat processing creates avenue for value addition
- ❑ Several value added and convenience meat products can be developed
- ❑ Value addition of meat doubles the returns
- ❑ Efficient utilization of slaughter byproducts
- ❑ Enhanced shelf life nearly twice

Processes for Value Addition of Meat

Diversified and value added meat products can be developed through emulsification, restructuring, fortification, enrobing processes.



How to Make Value Added Meat Products ?

Mutton Pickle

- ❑ Traditional, shelf stable and ready to eat product
- ❑ Stable at room temperature up-to 100 days
- ❑ Meat from spent/aged animals can be utilized effectively
- ❑ Meat chunks (2.5-3cm) – Acidifiers (Acetic acid) – Steam cooking – Frying with other ingredients – Cooling and packaging – Storage at room temperature
- ❑ Cost of production : Rs 280/kg



Components	Nuggets	Bhujiya	Pickle
Moisture (%)	61.72	6.72	54.23
Protein (%)	17.23	19.78	26.82
Fat (%)	12.35	24.97	11.68
Ash (%)	2.37	4.06	4.71
Gross Energy (Kcal/100g)	205	482	212

Meat Cookies



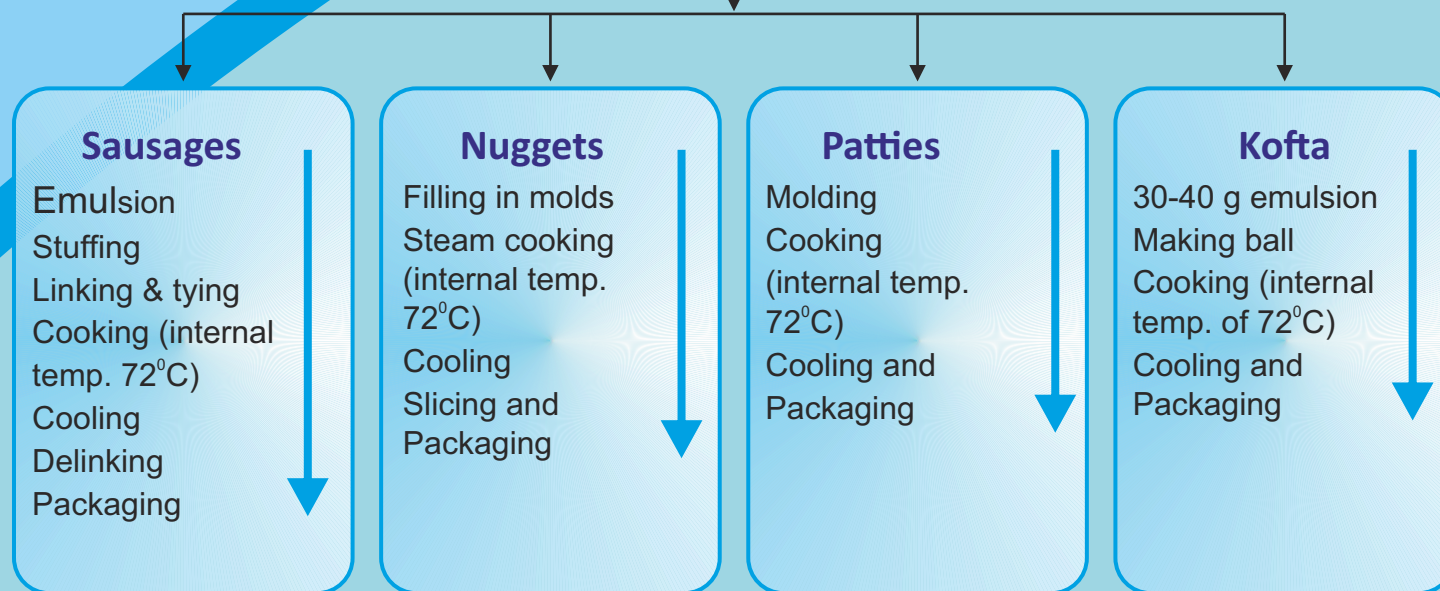
- ❑ Ready to eat, convenience product and shelf-stable up to 90 days at room temperature
- ❑ Minced meat – Steam cooking – Dough making –molding – Baking at 180°C – Cooling and packaging
- ❑ It contained 26% protein, 32% fat and 528 Kcal /100g gross energy
- ❑ Cost of production: Rs 340/kg

Emulsion Based Meat Products

- ❑ Products are made by mincing boneless meat and emulsion is prepared by using salt, polyphosphates, spices, condiments, binders etc.
- ❑ Tough meat and offal's can be utilized effectively.
- ❑ Ready to eat, heat and serve, traditional convenience products can be prepared.
- ❑ Emulsion based products could be stored at refrigeration (4±1°C) for 15 days and at frozen (-18±1°C) temperature for 3 months.
- ❑ The cost of production of sausages, nuggets and meat balls Rs. 350/kg and patties Rs. 370/kg.

Meat

Meat Emulsion



Restructured Meat Products

- ❑ Restructuring is partial or complete disassembling of meat and reforming into the same or different form
- ❑ Less demanded meat trimmings, cuts etc. can be utilized
- ❑ Meat chunks are massaged and tumbled in the meat tumbler
- ❑ It contained 72.4% moisture, 20.24% protein, 1.36% fat and 2.92% ash
- ❑ Cost of production : Rs 300/kg



Meat Soup



- ❑ Soup prepared from meat broth, salt, spices, condiments and other ingredients
- ❑ Nutritious, contains low fat and easily digested
- ❑ Effectively utilized deboned and other byproducts
- ❑ Shelf life : 9 days at refrigeration (4±1°C) and 90 days at frozen (-18±1°C) temperature
- ❑ It contains 92.90% moisture, 2.68% protein and 1.24% fat
- ❑ Cost of production : Rs 100/L

Equipment for Meat Processing Units

For meat processing, meat mincer, bowl chopper, sausage filler, deep freezer, refrigerator etc. are required.

License

All the meat products should be prepared under standard food safety and hygienic condition and sold as per the norms of Food Safety and Standards Authority of India (FSSAI).

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Value Addition of Sheep Milk



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Sheep Milk

- An excellent source of nutrients
- Rich in proteins, fat, minerals and vitamins compared to milks of other domestic animals
- Small sized fat globules than cow milk
- Contains almost twice as much protein as goat and cow milk
- Highest levels of conjugated linoleic acid and its precursor vaccenic acid
- Enzymatic hydrolysis of k-casein produces peptides with antioxidant activities

Advantages of value addition

1. Creates newer diversified and healthier products
2. Increases profit
3. Enhanced shelf life of the product
4. Convenience to the consumer
5. Effective utilization of surplus milk
6. Improves quality & provide safe food
7. Generates employment

Parameters	Sheep Milk
pH	6.13
Titrateable acidity (%)	0.20
Total solids (%)	16.70
Moisture (%)	83.30
Protein (%)	5.22
Fat (%)	7.26
Lactose (%)	3.09
Ash (%)	1.12

Paneer

- Indian traditional dairy product, similar to unripened variety of soft cheeses
- Preparation is relatively simple
- Minimal investment
- Heat and acid coagulated
- Shelf life: One week at refrigeration temperature (4 ± 1 °C)
- Sheep milk paneer contains 46% moisture, 22% proteins 14% fat and 2.45% ash



How to Make Paneer?

- Fresh milk
- Filtration and clarification
- Heated to 85°C
- Addition of citric/acetic/tartaric acid
- Separation of coagulum
- Molding
- Cooling and packaging



Whey Drink



Flavored Milk



Kulfi



Gulab Jamun



Paneer



Cheese

Kulfi



- Indian traditional product relished by consumers
- Minimal investment

How to Make ?

Fresh milk
 Filtration and clarification
 Continuous heating till half of original quantity of milk
 Addition of sugar and flavours
 Filling in mold
 Freezing

Flavored Milk



- Relished by consumers
- Refreshing and energizing drink
- Minimal Investment

How to Make ?

Fresh milk
 Filtration and clarification
 Heating of milk till boiling
 Addition of sugar and flavours
 Filling in bottles and sealing
 Sterilization
 Cooling and storage

Mozzarella Cheese



- Dairy product widely appreciated in the country
- Originated in Italy
- Soft, white and unripened cheese
- Melting and stretching characteristics are highly desirable
- Belongs to the cheese classified as "Pasta fillata" which refers to the stretching of curd in hot water to get smooth texture and grain
- Cheese made from sheep milk contains: 45% moisture, 28% protein, 22% fat and 4% ash.

How to Make?

Fresh milk
 Filtration and clarification
 Standardization
 Pasteurization
 Chilling
 Acidification
 Rennet addition
 Incubation
 Cutting of coagulum
 Cooking
 Draining
 Stretching under hot water
 Molding
 Brining

Peda

- Khoa based Indian sweet
- Plain (creamy or white colour) and brown (Lal) peda are available in market.

How to Make ?

Khoa
 Heating
 Addition of sugar
 Kneading
 Addition of flavours/Cardamom
 Molding
 Peda



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