

**MINISTRY OF SCIENTIFIC  
RESEARCH AND INNOVATION**

**REPUBLIC OF CAMEROON  
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**NORD WEST REGIONAL CENTER**

**INTERNATIONAL LABOUR OFFICE**

**TRAINING OF WOMEN INVOLVED IN MILK  
PRODUCTION ON THE TECHNIQUES OF  
EXTRACTION, PRESERVATION, TRANSPORTATION  
AND PROCESSING OF MILK IN BALI AND WUM**



**Report of Training 2010**

**By**

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## CHAPTER ONE

### 1. INTRODUCTION:

International Labour Office (Cameroon) in technical collaboration with the Ministry of Scientific Research and Innovation (MINRESI), North West Regional Center, has organized a transfer of technology to Mbororro women involved in milk production. The beneficiaries of this training were Mbororro women from Bali and Wum of the North West Region of Cameroon.

The training for 13 days were planned and realized. The training took place in Bali on the 15 February 2010. 25 Women's participated in this training: 9 from Wum and 16 from Bali (Annex 1).

### 2. OBJECTIVES:

The main objective of this activity is to build the capacities of milk producers in Bali and Wum on the production, preservation and processing of milk.

The specifics objectives of the training are as follow:

- Train Mbororro women of Bali and Wum on the transformation techniques of milk to produce yoghurt, cheese, butter and alaska.
- Train participants on preparation of starter culture from the powder stock.
- Introduce the test of milk quality control and hygiene.
- Train participants on skimming of milk
- Provide the necessary support on utilization and maintenance of cheese equipment, milk skimming separator and other materials.

## CHAPTER TWO

### 1. TRAINING PROGRAM:

#### Day1:

- Presentation of the Training Programme
- Presentation, preparation and using of training materials
- Milk composition and handling, hygiene during production and processing
- Milk preservation and transportation
- Quality control
- Preparation of yoghurt mother culture by Trainer (T)

#### Day 2:

- Summary of previous day by Farmers (F)
- Quality control
- Culture Preparation: 1-st laboratory yoghurt culture by T
- Preparation of cheese mother culture by F
- Preparation of salt solution for cheese
- Preparation of material for cheese making

#### Day 3:

- Summary of previous day by Farmers
- Quality control
- 2-end laboratory yoghurt culture by T
- 1-st laboratory cheese culture by Farmers
- Preparation of Dairy products (theory)
- Cheese making by T (using medium moulds)

#### Day 4:

- Summary of previous day by Farmers
- Quality control
- Cheese making (cont)
- Culture preparation: 3-t laboratory yoghurt culture by T  
2 -end laboratory cheese culture by Farmers
- Whey transformation

#### Day 5:

- Summary of previous day by Farmers
- Quality control
- Cheese making by F (using medium moulds)
- Culture preparation: 3-t laboratory cheese culture by F
- Whey transformation

#### Day 6:

- Summary of previous day by Farmers
- Quality control
- Cheese making (cont)
- Cheese making by F (using small moulds)
- Whey transformation
- Evaluation of cheese technology

**Day 7:**

- Summary of previous day by Farmers
- Quality control
- Using of milk skimming machine
- Milk skimming by T
- Yoghurt making by T

**Day 8:**

- Summary of previous day by Farmers
- Quality control
- Milk skimming by T and F
- Yoghurt making by F
- Packaging of yoghurt

**Day 9:**

- Summary of previous day by Farmers
- Quality control
- Milk skimming by F
- Flavour yoghurt making by T
- Packaging of yoghurt

**Day 10:**

- Summary of previous day by Farmers
- Quality control
- Milk skimming by F
- Flavour yoghurt making by F
- Packaging of yoghurt

**Day 11:**

- Summary of previous day by Farmers
- Quality control
- Production of plain yoghurt and/or with powder milk by F
- Butter making and packaging

**Day 12:**

- Summary of previous day by Farmers
- Evaluation of Yoghurt Technology
- Sensory evaluation of Yoghurt technologies by T, F and ILO staff
- General Evaluation of the Training.

**Day 13:**

- Care during the cheese maturation
- Waxing of cheese and storage

**2. TRAINING MATERIALS:**

- Milk:** The fresh milk for the training practice was supplied by the farmers.
- Starter Culture and Rennet:** The yoghurt, cheese, starter cultures and also the rennet were supplied by the Trainer (T) for the training.
- Equipments and Utensils:** The equipment, materials and utensils were supplied by International Labour Office. The list of the training materials presented in Annex 2.

### **3. METHODOLOGIES:**

The training methodologies contain 2 sessions: theoretical course and practical. The practical is based on:

- a) The demonstration which consists to manufacture milk products by the Trainer explaining all steps to participants.
- b) The exercise consists to rotate by women (group work) the preparation of milk products under the supervision of the Trainer.
- c) The practice – manufacture of dairy products by participants (group work) under supervision of one Women and evaluation by the Trainer.

#### **Emphasize was made on:**

- Introduction of tests on quality and hygiene of milk
- Introduction of milk skimming
- Introduction of starter culture preparation
- Introduction of Yoghurt , Cheese and Butter making
- Utilization and the maintenance of cheese equipment, milk skimming separator and other materials

## CHAPTER THREE

### 3. MILK AS FOOD

#### 3.1 Milk Composition

Milk contains proteins, carbohydrates, fat, vitamins, minerals and water. General composition of cow's milk:

Milk	Percentage (%)
Water	87.3%
Protein	3.3%
Milk sugar (lactose)	4.6%
Milk fat (butter fat)	3.9%
Milk salt	0.9%

An important protein in milk is casein (2,8%); albumin and globulin. Milk fat is present in the form of small fat globules which are lighter than the other constituents of milk. When cow milk is allowed to stand, these globules gather on top of the milk and form a layer of cream. Milk sugar gives milk its sweet taste. The lactose ferments by the influence of micro organism (sour milk). Milk is also an important source of vitamins: A; B1; B2; B3; B9; B12; D; E; vitamin C is little in milk. Milk contains also the minerals salt: calcium, phosphorus, sodium, magnesium, iron, etc.

Composition of various types of milk

Milk	Fat %	Protein %	Lactose %	Calcium %	Energy (Cal/100g)
Mother's milk	4,6	1,2	7,0	0	73
Friesian cow's	3,5	3,3	4,6	0.1	62
White Fulani cows*	3,9	3,3			
Goat	4,5	3,3	4,4	0,1	71
Sheep	7,5	5,6	4,4	0,2	105

(Source FAO Nutritional studies 27)

\*Source IRAD Bambui.

#### 3.2 Nutritional Value

Milk is very important food in human alimentation. Milk contained substances which are essential for man such as proteins, fat, carbohydrates, vitamins and minerals. Milk protein is of a high quality, meaning that, a large part of the protein can be used efficiently by human body.

Milk sugar is a carbohydrate, a substance necessary to keep the body going. Our bodies burn carbohydrates in the same way an oven burn wood; through this combustion, energy is released which is used by our bodies for many other kinds of activities.

Milk fat is easy to digest. The body uses fat as a fuel or stores it as fat reserves. Milk is also an important source of vitamins and minerals. It contains large quantities of calcium (120-130mg/ %), which can easily be absorbed by the body after digestion. It is also important for the formation of bones. Milk is especially desirable for vulnerable groups: babies, children, pregnant and nursing mothers; toddlers.

### **3.3 Milk Handling, preservation and transportation**

Milk is a perishable product. Milk should be handled with care. There are several factors that can make milk go off and unsuitable for further consumption. These include:

- the presence of many micro – organisms in the milk;
- contamination by sick animals (tuberculosis, udder infection) and or people;
- bacteria and/or chemical conservation of milk
- an unusual flavour or smell due to absorption of substances which do not normally occur in milk (cleaning products, disinfectants, antibiotics, species).

The above mentioned factors always cause some deterioration of milk. Once milk has been contaminated by micro organisms, they multiply very rapidly. Temperature plays an important role during the development of micro organism. It is very important to store milk or milk products below 4<sup>o</sup>C, otherwise deterioration will take place rapidly. Bacteria found in milk can be divided into 2 groups:

- useful and harmful
- lactic acid bacteria are useful bacteria's
- harmful (pathogenic) bacteria can cause deterioration of milk and certain diseases.

Properly pasteurized and cooled milk can be kept for a few days, even in a warm climate. If you are not able to cool milk below 10 <sup>o</sup>C, then do not mix different batches.

Use clean and adequate materials for transportation and storage of milk, for example for milk transportation appropriate plastic or stainless gallons. The milk arrives at the processing unit in the shortest possible time after milking.

### **3.4 Hygiene during production, storage and processing**

Infection occurs when harmful micro organisms enter milk.

- a) Possible sources of infection during production, processing and storage are:
- the milking cow
  - conditions in the milking place
  - the person milking
  - utensils and equipment used during processing
  - when a cow has udder infection (mastitis) it's milk will be contaminated and contain pus and some times blood. Milk from these animals should not be used in any way.

b) Bacteria can also enter milk via the air. See to it that the floor is clean. A clean milking place and fresh surrounding are essential to maintaining good hygiene.

c) All persons handling milk should pay strict attention to good hygiene; he/she should have clean hands and wear clean clothes. If the milkier suffers from tuberculosis, dysentery or some other diseases, the risk of infection become very high; it will be wise to have somebody else to take over.

d) All milking equipment should be cleaned with clean water immediately after each use. The milking utensils can also be disinfected by rinsing them in boiling water for 10mm or addition of chlorine ("eau de javel"). It is therefore advisable to use stainless steel equipment, cheese cloth and wooden utensils. After milking you should know that milk should be processed as quickly as possible:

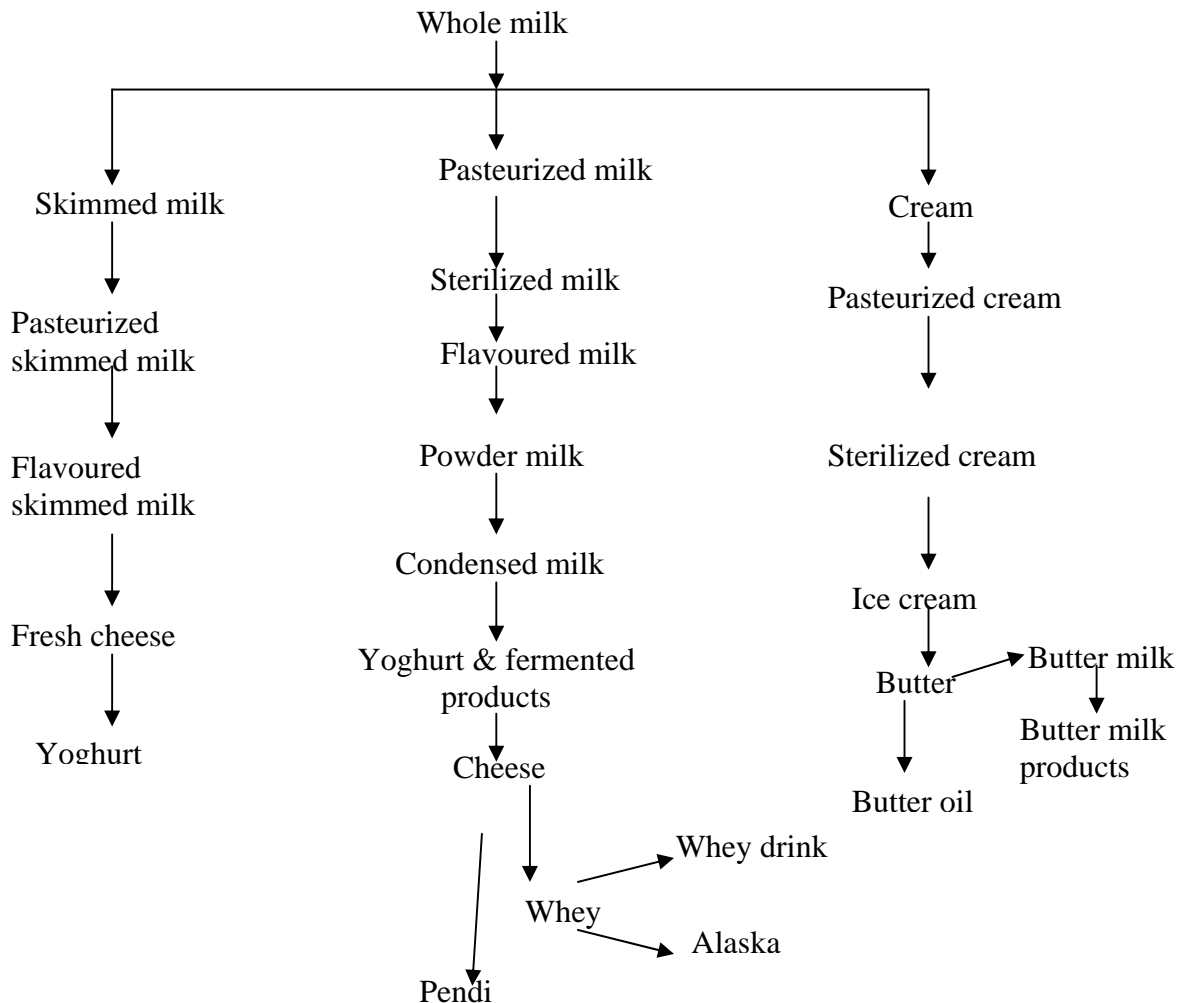
- filter fresh milk on a clean cloth
- pasteurized and cooled the milk to a temperature of 4°C, to minimize it chances of spoiling.

## CHAPTER FOUR

### 4. PREPARATION OF DAIRY PRODUCTS

#### 4.1 Milk Products

Milk can be stored longer if it has been processed. Different dairy products can be made from fresh whole milk, skimmed milk, butter milk and whey.



#### 4.2 Quality Control of Milk

There are simple tests for milk quality at collecting points

a) Sensory Tests: The milk in each transport vessel is assessed with regard to appearance, colour, cleanliness and smell. Deviation from the normal colour indicates damage to the udder; reddish-blood; or yellow-pus. In case where the smell is not normal, test and flavour should also be checked. If the smell and taste are slightly sour, milk should not be accepted.

b) Clot-on-boiling test: This means that a small volume of milk is heated to boiling point to check whether it clots or not. If it clots, it is sour and cannot be heat-treated any more and must be rejected.

c) Density of milk: The density of milk can be measured by means of the lactometer, which is a special hydrometer calibrated over the range from 0-40. For the determination, the milk should be fresh \*gently mixed, avoiding incorporation of air (\*more than an hour after milking, when all air bubbles have disappeared). The normal density of milk range between: 26 – 33. The change of density has been attributed by adulteration of milk:

- addition of water: density decreased
- skimming of milk: density increased

**Note:** If you don't have a lactometer, drop small quantity of milk on the flour and observe; good milk, none adulterated remain together.



Quality control of milk

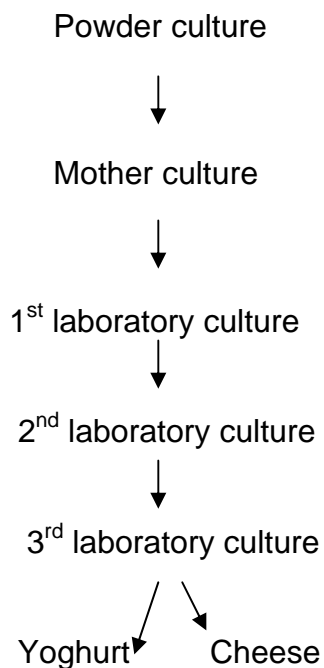
#### 4.3 Pasteurization of Milk

Pasteurization of milk improves the safety and storage life of a product. Another way of increasing the shelf-life of milk is to process into sour milk products. The milk can be left to sour spontaneously, but then you cannot control which bacteria go to work. It is better to sour the milk with the help of specific mild bacteria (starter culture) after it has been pasteurized. Quality and taste of the final product are influenced by the different by-products that the different bacteria produce.

#### 4.4 Starter Culture

In tropical countries it is often difficult to keep milk from spoiling before consumption. One method to avoid this is to make sour milk by adding certain bacterial to the fresh milk. Different kinds of bacteria produce different kinds of sour milk. For the production of sour milk you use **starter culture** that contains the appropriate bacteria

### Preparation of yoghurt or cheese culture:



### Preparation of mother culture:

1. Boil the milk (10-20 minutes)
2. Cool the milk to the inoculation temperature of 45<sup>0</sup>C
3. Add powder starter culture (mix with little quantity of milk)
4. Mixing and incubation (6 – 12 hours for yoghurt and 12-24 hours for cheese)
5. Cooling and storage (maximum 2 days in the refrigerator often in the deep freezer).

### Multiplication of Yoghurt culture: (1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> laboratory culture)

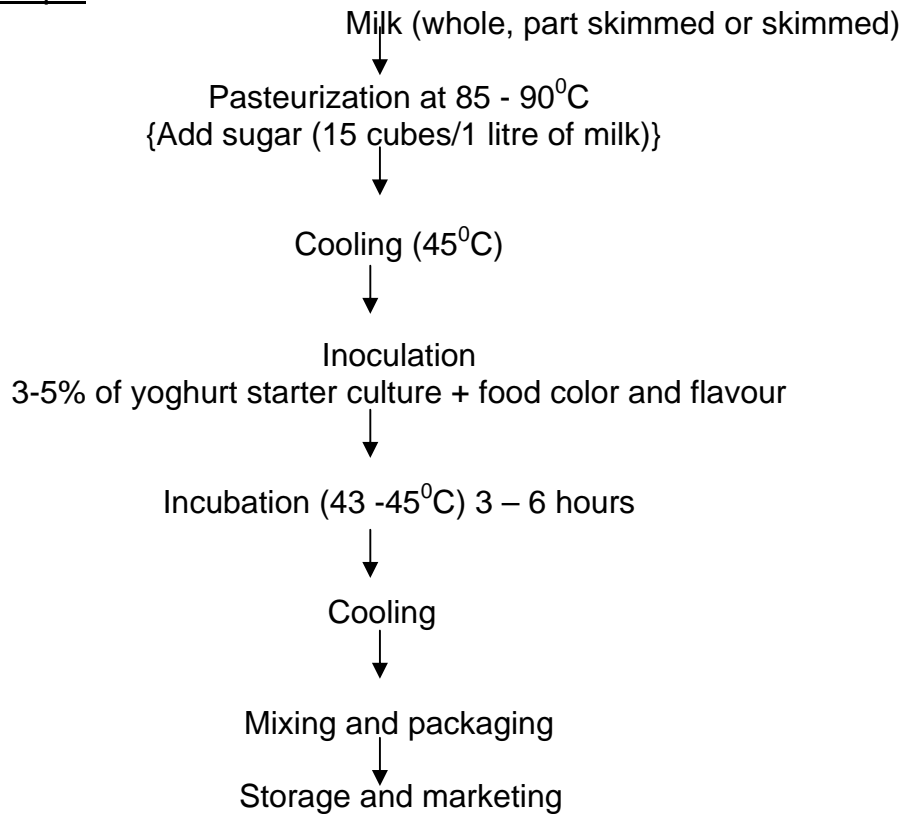
1. Pasteurized the milk (85 - 95<sup>0</sup>C during 20 – 30 minutes)
2. Cool the milk to the inoculation temperature (43 - 45<sup>0</sup>C)
3. Add to prepare:
  - 1<sup>st</sup> laboratory culture 2% of mother culture
  - 2<sup>nd</sup> laboratory culture 3% of 1<sup>st</sup> lab. culture
  - 3<sup>rd</sup> laboratory culture 3% of 2<sup>nd</sup> lab. culture
4. Mixing and incubation 3 – 6 hours at 43 45<sup>0</sup>C
5. Cooling and storage

The culture can be kept in small sterilized pot/plastic containers. The activity of the culture is declining after the time, the culture may become less active or its quality may decline because it may not have the desirable fresh, sour flavor.

### **4.5 Preparation of Yoghurt:**

Yoghurt is cultured milk. The flavor and texture of yoghurt is impaired by a culture which consists of *Lactobacillus bulgaricus* and *Streptococcus thermophilus*. Yoghurt is easily digested and very suitable for children and for old people.

Technological steps:



Yoghurt is ready for consumption after 6-12 hours once the incubation period is finish. If cooled, yoghurt can be kept for one week or 2 weeks in freezer.



Preparation of drinking yoghurt

**4.6 Cheese:**

a) Cheese Varieties

There are many hundreds of varieties of cheese made throughout the world. These varieties can be grouped into various types according to their method of manufacturing and ripening and their physical properties. Cheese can be prepare from cows, goats, sheep and buffalo milk

b) Nutritional Value of Cheese

Cheese has an excellent nutritional value; all the nutrients present in milk are concentrated in cheese. Cheese is one of the best protein foods, and a very good source of calcium. It is therefore an important food for children. But cheese can play an essential part in the diet of the whole family, both young and old. It is extremely versatile and can be eaten at any meal of the day including breakfast, or as a snack, cooked or raw.

Nutritional Value of different food:

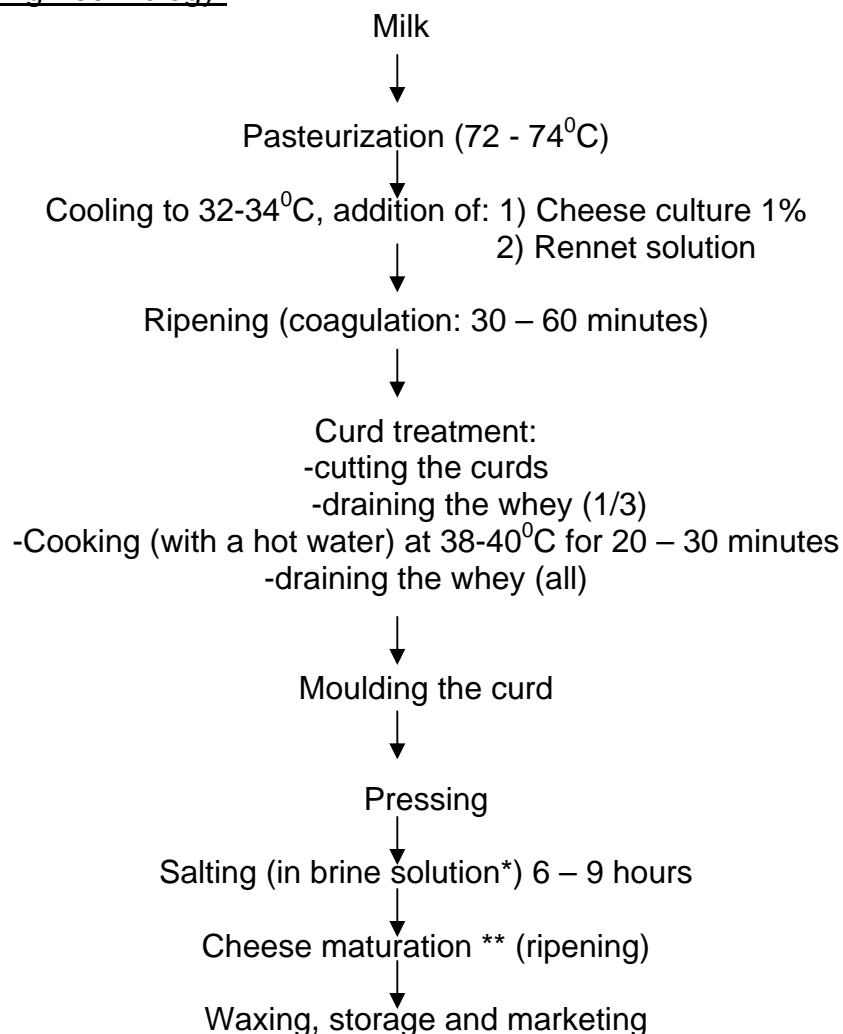
Foods	Composition , %			
	Water	Protein	Fat	Carbohydrates
Cheese	40	25	29	2
Beef meat	60	14	9	0
Fish	40	10	0,5	0
Bread	37	8	0,8	53

Sources: Tverdohle et al., 197

**4.7 Bambui Cheese making**

Bambui cheese is a local type of semi-hard cheese. The technology of this cheese adopted for the rural conditions of the North West Region of Cameroon.

Cheese Making Technology:



\*Preparation of brine solution: 200g of salt per 1 liter of water to boil and cool.

\*\*Maturation of cheese in the cheese maturation cupboard during 2 – 4 weeks depends of the cheese size. Before the cheese matures, it needs to be turned on both sides every day. During ripening various chemical changes occur which provide the flavour and texture of mature cheese. These result from the action of bacteria and enzymes in the curd. The cheese becomes firm and the rind more definite. If mould grows on the cheese, it can be removed with vinegar or sunflower oil.



Cheese making



Cheese pressing

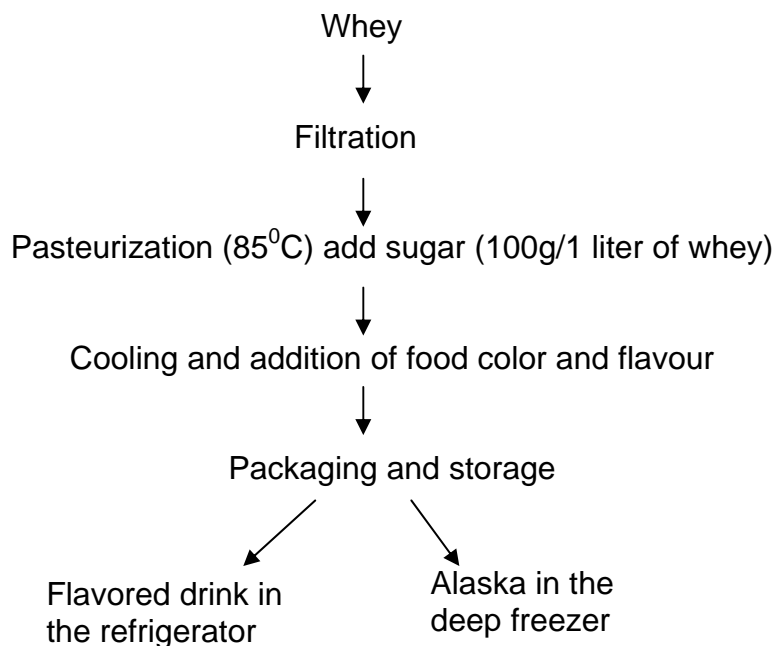
#### 4.8 Whey Transformation:

Whey is a by-product of the cheese making process. The whey contains most of the other milk constituents in a diluted form.

Whey Composition:

Foods	Composition, %			
	Dry matter	Fat	Protein	Lactose
From Bambui cheese	7,0 – 8,2	0,88 – 1,2	1,6 – 2,2	
From industrial manufacture cheese	6,5	0,4	0,7	4,5

### Preparation of Whey drink and Alaska:



When making cheese you will find that you have large quantities of whey left over. Do collect this – it can be used to prepare a cool refreshing drink or Alaska.



Preparation of Alaska from whey

## 4.9 Butter making

### a) Skimming of milk

Cream is made from the fat floats on the surface of milk. A layer of fat forms on the surface of the milk after it has been allowed to stand for a while. The simplest way of collecting it is by skimming it off the top of the milk – manually or by using a skimming machine (milk separator or creamer) to obtain good results.

### b) Butter making

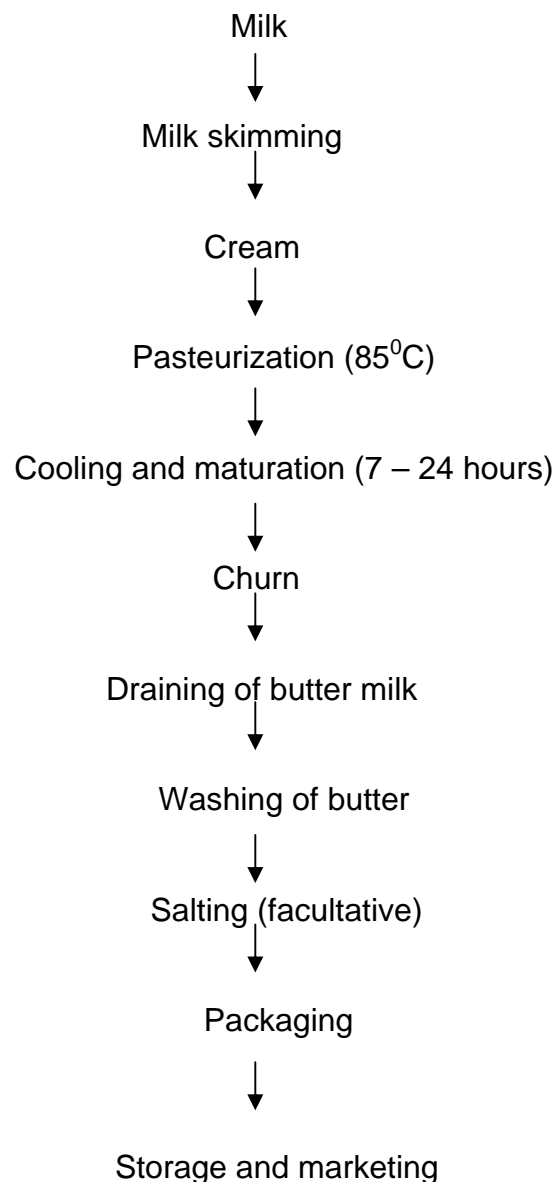
Butter is made by churning on the following products: cream, sour milk or sour cream. The churn action causes the fat globules to merge and form bigger granules,

producing butter and butter milk. Using of ripened (sour) cream for butter making does give better results and specific flavor and taste. The quantity of butter increases especially when a hand creamer (milk skimming machine) has been used. Pour the pasteurized cream into the bowl or churn. Wisk or churn the cream until it thickens and begins to separate into butter grains and butter milk; if you use electric beater, set it at a slow speed.

Churn until the granules reach the size of nut grains. Pour off the butter milk and pour cool water (boiled) over butter grains to wash them, repeat the washing until the water runs off as a clear liquid. It is important that all the butter milk is drained out of the butter; otherwise the butter will not keep and may go rancid. You can wash the butter also with a salted water to obtain a salted butter or use the dry salt (1 teaspoon/ 500g of butter, according to taste).

Finally, pat butter into shape and wrap it in aluminum foil or greaseproof paper. Keep in the refrigerator or deep freezer for long conservation.

#### Technological Steps:





Skimming of Milk



Packaging of Butter

**c) Butter Milk**

Butter Milk It is a by-product of the butter making process

**Composition of butter milk**

	<b>Dry matter %</b>	<b>Fat %</b>	<b>Protein %</b>	<b>Lactose %</b>	<b>Mineral salt %</b>
Butter milk	9.1	0,5	3,2	4,5	0,7

## CHAPTER FIVE

### 5. RESULTS

#### 5.1 Milking handling

- a) Self hygiene of the milker (cleaning the face, mouth and body)
- b) Cleaning of the milking place
- c) Sterilization of milking utensils and materials
- d) Cleaning of the cow with warm water (udder and teats)
- e) Verified first milk from all teats
- f) Sieve the milk and measuring
- g) Store the milk in a clean container and store in a cool place
- h) Wash milking materials before keeping
- i) Disinfect materials with "eau de javel"

#### 5.2 Milk Products

The milk products produced during this training is:

- Plain yoghurt
- Flavoured yoghurt with vanilla, strawberry, pineapple and coconut flavors
- Bambui cheese
- Whey drinks and alaska
- Cream and Butter (salted and unsalted)

#### 5.3 Cares during Cheese maturation

- Maturation cupboard should be clean.
- Choose the place where to stand the cupboard preferably in a cool place with a fresh air circulation.
- Place a clean cheese cloth in the cheese cupboard.
- Place the cheese in the cupboard separately.
- Date your cheese according to ages.
- Turn the cheese once a day till consumption.
- Remove the cheese cloth when the cheese has started drying to enable the cheese to have ventilation.
- Wash and disinfect the cheese cloth frequently with "eau de javel" each time you see moulds on it.
- Clean cheese regularly if it has moulds with:
  - a soft sponge
  - salted water and rub vinegar.
- Change the position of the cheese depending on the age: from up to down.
- If cheese expands, use a needle to bring out the air and put a wooden block on it.
- Wax your cheese before it becomes completely dry (mature).
- During the dry season, when relative humidity is very low, use a bowl and stand some water in the cheese. Change this water frequently.

#### 5.4 Sensory Evaluation of milk products

The sensory test of milk product (cheese, different types of yoghurt, Alaska and whey drinks) was made by the participants during training, by the Trainer, by the staff of ILO, by the guest and visitors. The most appreciated product by participants of this training is flavoured yoghurt with the addition of the powder milk.

#### 5.5. Organization of Work and Price determination

The Trainer explain to the participants how organized the work in the Milk Processing Unit after this training. The Milk Processing Unit in Bali and Wum suppose have:

- the registration book for milk reception
- the book for milk transformation into different milk products
- the book for selling of milk product and registration of ingredients used in processing

The Participants of the training with the help of the Trainer determinate the price for various milk products:

- Pasteurized milk 1 liter: 500 – 600FCFA
- Yoghurt 1 liter: 1000 FCFA
- Cheese 1 kg: 5000 FCFA
- Whey drink 1 liter: 300 FCFA
- Alaska: 25 FCFA
- Butter 200g: 600 FCFA

#### 5.6 Evaluation

- Cheese technology
- Yoghurt technology
- General Evaluation of Training

*The evaluation of the training was made in two steps:*

1. Evaluation of the technologies for Cheese and Yoghurt making by Participants
2. General evaluation of this training by the Participants.

#### Evaluation of cheese technology

##### A) **Positive points:**

- All materials for cheese making were available.
- Gain knowledge on cheese and cheese making.
- Full participation during the cheese making process
- Gain knowledge on how to use the cheese press and moulds
- Gain knowledge on cheese care and handling during the maturation period
- Gain knowledge on whey transformation to drinks and Alaska.

##### B) **Negative points:**

- 2 small Cheeses made by participants is not press well

## **Evaluation of Yoghurt Technology**

### **A) *Positive points:***

- Gain knowledge on yoghurt culture preparation
- Learn on milk pasteurization for yoghurt making
- Gain knowledge on Yoghurt making
- Introduction of food colour and flavour
- Using of powder milk
- Gain knowledge on packaging
- Learn on yoghurt processing: Set and Drinking Yoghurt

### **B) *Negative points:*** No negative points

## **General Evaluation of Training**

### **A) *Positive points:***

- Gain knowledge on quality control milk
- Availability of Yoghurt and Cheese starter culture
- Gain knowledge on the measuring instruments: thermometer and scale
- Learn technologies of: yoghurt, cheese, butter and whey preparation
- Gain knowledge on yoghurt and cheese culture preparation and storage
- Participant discovered a skimming machine and did milk skimming
- Gain knowledge on yoghurt preparation using powder milk, food colour and flavour
- Availability of training materials
- Gain knowledge on milk composition and milk products
- Gain knowledge and utilization of different material and equipments
- Gain knowledge on milk and cream pasteurization
- Gain knowledge on sterilization of materials
- The language of our facilitator is simple and understanding
- Appreciate the methodology of training used by Trainer, the facilitator was friendly to the participants
- Full participation by the women during the training
- Very happy with organization of this training
- Happy to have a person (Mr Buba) in charge of milk supplying for the training and helper to translate to “Fulfulde” some part of training.

### **B) *Negative points:***

- Some time during the training the discipline of participants not very good

## **Recommendations by the Participants**

1. Pleading by Participants for a follow-up by the Trainer at the level of each cooperative (location).
2. Expressed need by the participants that ILO should help them with other materials (table, cupboard, etc..)
3. Participants expressed need of cows feed

## 5.7 Visits

The DO of Bali and some personalities of Bali Council visit the Site of Training; and very appreciate the initiative of ILO to organized this Training for Mbororro community and encourage the Women's to put in practice acquire knowledge.



Visit of DO of Bali

## CHAPTER SIX

### 6. Conclusion and Recommendation

#### 6.1 Conclusion

The technology of the manufacturing of the following milk products have been transferred to the farmers:

- preparation of lactic culture
- sweet yoghurt
- flavoured yoghurt
- Bambui cheese
- Whey drinks and alaska
- Cream and Butter

The utilization of the by-products of cheese making – whey to produce drink and alaska will enable the farmers to increase the supplementary gain. This training has allowed participants (dairy farmers) to acquire:

- more knowledge in milk transformation into various dairy products;
- gain knowledge on milk quality control and hygien

This will enable them to improve the quality of products placed on the market and to diversify the scale of production obtained from the fresh milk and finally hence to increase the revenue of the farmers in the fight against poverty.

#### 6.2 Recommendations

- A follow up by Trainer is very necessary in each locality (Bali and Wum) to be:
  - a) assured that the transformation of milk into dairy products is made in good hygienic conditions.
  - b) assured that there is not relaxation in the research of the perfection in the production of milk products.
- Put in the disposition of each Cooperative the lacking material: lactometer.
- Organization of Refresh Training after 6-12 months

## Annex 1: List of Participants

<b>Serial No.</b>	<b>Name</b>	<b>Village/Council</b>
1	Salamatou Umaru (President)	Wum
2	Aishatu Ladi (Vice - President)	Wum
3	Hasana Musa	Wum
4	Useina Isa	Wum
5.	Haweh Musa	Wum
6.	Adama Haruna	Wum
7.	Useina Musa	Wum
8.	Aishatu Idrissou	Wum
9.	Aishatu Adamu	Wum
10.	Amina Ngomna Mohammadou (President)	Bali
11.	Hawe Alayidi (Vice - President)	Bali
12.	Hawe Velti	Bali
13.	Aishatu Banu	Bali
14.	Diga Sule	Bali
15.	Mairama Dasso	Bali
16.	Aminatou Bobbo	Bali
17.	Mairo Njaja	Bali
18.	Fatou Manga	Bali
19.	Zulanatu Karimou	Bali
20.	Hawe Hamado	Bali
21.	Hurera Ibrahim	Bali
22.	Jenabou Sule	Bali
23.	Baikissou Manu	Bali
24.	Amina Jibbo	Bali
25.	Fadimatu Dudu	Bali

## **Annex 2: Training materials**

1. Didactic materials:
  - Writing paper
  - Marker
  - Cellotape and drawing pins
  - Notebook
2. Ingredients:
  - Yoghurt culture (powder)
  - Yoghurt culture (liquid)
  - Cheese culture (powder)
  - Cheese culture (liquid)
  - Rennet (powder)
  - Sugar
  - Salt
  - Flavour
  - Food colour (red and yellow)
  - Powder milk
3. Equipment and materials:
  - Cheese moulds
  - Cheese press
  - Maturation cheese cupboard
  - Working table
  - Heat (fire)
  - Refrigerator
  - Frezer
  - Milk skimming machine
4. Utensils:
  - Pots
  - Thermometer
  - Sifter
  - Cheese cloth
  - Plastic tray
  - Plastic bucket
  - Plastic basin
  - Cooler
  - Knife
  - Scale
  - Spoons (tea, kitchen, perforated ladle)
5. Cleaning materials:
  - Sponges (soft and metallic)
  - Soap
  - Table napkin
  - "Eau de javel"
6. Packaging materials:
  - Plastic bottles
  - Aluminium paper
  - Alaska packaging paper
  - Wax