A

On Job Training Report

On

Dairy and Bakery Industry

Completed at

SHREE HANUMAN SAHAKARI DUDH VYAVSAIK & KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD.

TAL. HATKANANGLE, DIST. KOLHAPUR (MAHARASHTRA)

By

Yash Sanjay Mane

Sakshi Dipak Koli

Galaxy Sunil Pawar

Samruddhi Sudhir Patil

Samruddhi Bhanudas Patil

Prachi Chandrakant Kesarkar

M. Sc. Microbiology

Part I Semester II

PG Department of Microbiology
Vivekanand College

(An Empowered Autonomous Institute)

Kolhapur, 416003

Maharashtra, India

2024-25

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Dissemination of Education for Knowledge, Science and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR

(AN EMPOWERED AUTONOMOUS INSTITUTE)

(स्वायत्त) कोल्हापूर

PG Department of Microbiology

CERTIFICATE

OF

"ON JOB TRAINING"

-

This is to certify that Yash Sanjay Mane. (Exam seat no. 1119115) has satisfactorily carried out the required practical work prescribed by the BoS Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for M.Sc. - Part- I Semester II course in On Job Training (Sub code – OJT20MIC21) and this report represents his/her Bonafide work in the year 2024 - 2025

Place: Kolhapur

Date: 15/04/2025

Examiner

OJT In charge

Head

HC HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Dissemination of Education for Knowledge, Science and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR

(AN EMPOWERED AUTONOMOUS INSTITUTE)

(स्वायत्त) कोल्हापूर

PG Department of Microbiology

CERTIFICATE

OF

"ON JOB TRAINING"

-

This is to certify that Sakshi Dipak Koli. (Exam seat no. 1119116) has satisfactorily carried out the required practical work prescribed by the BoS Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for M.Sc. - Part- I Semester II course in On Job Training (Sub code – OJT20MIC21) and this report represents his/her Bonafide work in the year 2024 - 2025

Place: Kolhapur

Date: 15/04/2025

Examiner

OJT In charge

Head

HC HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE,KOLHAPUR
(EMPOWERED AUTONOMOUS)

Dissemination of Education for Knowledge, Science and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR

(AN EMPOWERED AUTONOMOUS INSTITUTE)

(स्वायत्त) कोल्हापूर

PG Department of Microbiology

CERTIFICATE

OF

"ON JOB TRAINING"

This is to certify that Galaxy Sunil Powar. (Exam seat no. 1119112) has satisfactorily carried out the required practical work prescribed by the BoS Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for M.Sc. - Part- I Semester II course in On Job Training (Sub code – OJT20MIC21) and this report represents his/her Bonafide work in the year 2024 - 2025

Place: Kolhapur

Date: 15/04/2025

Examiner

OJT In charge

Head

HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Dissemination of Education for Knowledge, Science and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR

(AN EMPOWERED AUTONOMOUS INSTITUTE)

(स्वायत्त) कोल्हापूर

PG Department of Microbiology

CERTIFICATE

OF

"ON JOB TRAINING"

-

This is to certify that Samruddhi Sudhir Patil. (Exam seat no. 1119119) has satisfactorily carried out the required practical work prescribed by the BoS Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for M.Sc. - Part- I Semester II course in On Job Training (Sub code – OJT20MIC21) and this report represents his/her Bonafide work in the year 2024 - 2025

Place: Kolhapur

Date: 15/04/2025

Examiner

OJT In charge

Head

HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Dissemination of Education for Knowledge, Science and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR

(AN EMPOWERED AUTONOMOUS INSTITUTE)

(स्वायत्त) कोल्हापूर

PG Department of Microbiology

CERTIFICATE

OF

"ON JOB TRAINING"

-

This is to certify that Samruddhi Bhanudas Patil. (Exam seat no. 1119118) has satisfactorily carried out the required practical work prescribed by the BoS Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for M.Sc. - Part- I Semester II course in On Job Training (Sub code – OJT20MIC21) and this report represents his/her Bonafide work in the year 2024 - 2025

Place: Kolhapur

Date: 15/04/2025

Examiner

OJT In charge

Head

HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(AN EMPOWERED AUTONOMOUS)

Dissemination of Education for Knowledge, Science and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR

(AN EMPOWERED AUTONOMOUS INSTITUTE)

(स्वायत्त) कोल्हापूर

PG Department of Microbiology

CERTIFICATE

OF

"ON JOB TRAINING"

-

This is to certify that Prachi Chandrakant Kesarkar. (Exam seat no. 1119114) has satisfactorily carried out the required practical work prescribed by the BoS Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for M.Sc. - Part- I Semester II course in On Job Training (Sub code – OJT20MIC21) and this report represents his/her Bonafide work in the year 2024 - 2025

Place: Kolhapur

Date: 15/04/2025

Examiner

OJT In charge

Head

HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

DECLARATION

I hereby declare that I have successfully completed the On Job Training program at Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud. I acknowledge that skills acquired during this training program are valuable to me and will contribute to my professional development.

I express my gratitude to Mr. Gunwant S. Katkar, Project Manager of Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud and the whole training team for their support and guidance throughout the training.

Date: 15/04/2025

Place: Kolhapur.

Mr. Yash Sanjay Mane.

DECLARATION

I hereby declare that I have successfully completed the On Job Training program at Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud. I acknowledge that skills acquired during this training program are valuable to me and will contribute to my professional development.

I express my gratitude to Mr. Gunwant S. Katkar, Project Manager of Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud and the whole training team for their support and guidance throughout the training.

Date: 15/04/2025

Place: Kolhapur.

Ms. Sakshi Dipak Koli.

DECLARATION

I hereby declare that I have successfully completed the On Job Training program at Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud. I acknowledge that skills acquired during this training program are valuable to me and will contribute to my professional development.

I express my gratitude to Mr. Gunwant S. Katkar, Project Manager of Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud and the whole training team for their support and guidance throughout the training.

Date: 15/04/2025

Place: Kolhapur.

Ms. Galaxy Sunil Powar.

DECLARATION

I hereby declare that I have successfully completed the On Job Training program at Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud. I acknowledge that skills acquired during this training program are valuable to me and will contribute to my professional development.

I express my gratitude to Mr. Gunwant S. Katkar, Project Manager of Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud and the whole training team for their support and guidance throughout the training.

Date: 15/04/2025

Place: Kolhapur.

Ms. Samruddhi Sudhir Patil.

DECLARATION

I hereby declare that I have successfully completed the On Job Training program at Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud. I acknowledge that skills acquired during this training program are valuable to me and will contribute to my professional development.

I express my gratitude to Mr. Gunwant S. Katkar, Project Manager of Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud and the whole training team for their support and guidance throughout the training.

Date: 15/04/2025

Place: Kolhapur.

Ms. Samruddhi Bhanudas Patil.

DECLARATION

I hereby declare that I have successfully completed the On Job Training program at Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud. I acknowledge that skills acquired during this training program are valuable to me and will contribute to my professional development.

I express my gratitude to Mr. Gunwant S. Katkar, Project Manager of Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud and the whole training team for their support and guidance throughout the training.

Date: 15/04/2025

Place: Kolhapur.

Miss. Prachi Chandrakant Kesarkar.

ACKNOWLEDGEMENT

At this juncture where the herculean task is nearing its pinnacle, science deems it a pleasure to look back and acknowledge efforts and support of all kith and kin that helped with zeal to turn a distant dream of an industrial training into reality.

We are extremely thankful to Dr. S. D. Mali, Assistant Professor, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute), project guide for her valuable guidance and mentorship throughout this project work given to us during the study.

We are indeed grateful to Head Dr. T. C. Gaupale, Coordinator Ms. V. V. Misal, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for their kind co-operation and valuable support and we are also thankful to all the staff members of our department for their direct and indirect support.

We are thankful to Principal Dr. R. R. Kumbhar, for his kind co-operation and valuable support.

Also, we sincerely thank our parents for helping us in all aspects to complete the project work. Finally, we would like to appreciate our friends, colleagues for their direct and indirect contribution.

Date: 15/04/2025

Place: Kolhapur

Mr. Yash Sanjay Mane.

ACKNOWLEDGEMENT

At this juncture where the herculean task is nearing its pinnacle, science deems it a pleasure to look back and acknowledge efforts and support of all kith and kin that helped with zeal to turn a distant dream of an industrial training into reality.

We are extremely thankful to Dr. S. D. Mali, Assistant Professor, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute), project guide for her valuable guidance and mentorship throughout this project work given to us during the study.

We are indeed grateful to Head Dr. T. C. Gaupale, Coordinator Ms. V. V. Misal, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for their kind co-operation and valuable support and we are also thankful to all the staff members of our department for their direct and indirect support.

We are thankful to Principal Dr. R. R. Kumbhar, for his kind co-operation and valuable support.

Also, we sincerely thank our parents for helping us in all aspects to complete the project work. Finally, we would like to appreciate our friends, colleagues for their direct and indirect contribution.

Date: 15/04/2025

Place: Kolhapur

Ms. Sakshi Dipak Koli.

ACKNOWLEDGEMENT

At this juncture where the herculean task is nearing its pinnacle, science deems it a pleasure to look back and acknowledge efforts and support of all kith and kin that helped with zeal to turn a distant dream of an industrial training into reality.

We are extremely thankful to Dr. S. D. Mali, Assistant Professor, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute), project guide for her valuable guidance and mentorship throughout this project work given to us during the study.

We are indeed grateful to Head Dr. T. C. Gaupale, Coordinator Ms. V. V. Misal, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for their kind co-operation and valuable support and we are also thankful to all the staff members of our department for their direct and indirect support.

We are thankful to Principal Dr. R. R. Kumbhar, for his kind co-operation and valuable support.

Also, we sincerely thank our parents for helping us in all aspects to complete the project work. Finally, we would like to appreciate our friends, colleagues for their direct and indirect contribution.

Date: 15/04/2025

Place: Kolhapur

Ms. Galaxy Sunil Powar.

ACKNOWLEDGEMENT

At this juncture where the herculean task is nearing its pinnacle, science deems it a pleasure to look back and acknowledge efforts and support of all kith and kin that helped with zeal to turn a distant dream of an industrial training into reality.

We are extremely thankful to Dr. S. D. Mali, Assistant Professor, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute), project guide for her valuable guidance and mentorship throughout this project work given to us during the study.

We are indeed grateful to Head Dr. T. C. Gaupale, Coordinator Ms. V. V. Misal, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for their kind co-operation and valuable support and we are also thankful to all the staff members of our department for their direct and indirect support.

We are thankful to Principal Dr. R. R. Kumbhar, for his kind co-operation and valuable support.

Also, we sincerely thank our parents for helping us in all aspects to complete the project work. Finally, we would like to appreciate our friends, colleagues for their direct and indirect contribution.

Date: 15/04/2025

Place: Kolhapur

Ms. Samruddhi Sudhir Patil.

ACKNOWLEDGEMENT

At this juncture where the herculean task is nearing its pinnacle, science deems it a pleasure to look back and acknowledge efforts and support of all kith and kin that helped with zeal to turn a distant dream of an industrial training into reality.

We are extremely thankful to Dr. S. D. Mali, Assistant Professor, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute), project guide for her valuable guidance and mentorship throughout this project work given to us during the study.

We are indeed grateful to Head Dr. T. C. Gaupale, Coordinator Ms. V. V. Misal, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for their kind co-operation and valuable support and we are also thankful to all the staff members of our department for their direct and indirect support.

We are thankful to Principal Dr. R. R. Kumbhar, for his kind co-operation and valuable support.

Also, we sincerely thank our parents for helping us in all aspects to complete the project work. Finally, we would like to appreciate our friends, colleagues for their direct and indirect contribution.

Date: 15/04/2025

Place: Kolhapur

Ms. Samruddhi Bhanudas Patil.

ACKNOWLEDGEMENT

At this juncture where the herculean task is nearing its pinnacle, science deems it a pleasure to look back and acknowledge efforts and support of all kith and kin that helped with zeal to turn a distant dream of an industrial training into reality.

We are extremely thankful to Dr. S. D. Mali, Assistant Professor, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute), project guide for her valuable guidance and mentorship throughout this project work given to us during the study.

We are indeed grateful to Head Dr. T. C. Gaupale, Coordinator Ms. V. V. Misal, PG Department of Microbiology, Vivekanand College, Kolhapur (An Empowered Autonomous Institute) for their kind co-operation and valuable support and we are also thankful to all the staff members of our department for their direct and indirect support.

We are thankful to Principal Dr. R. R. Kumbhar, for his kind co-operation and valuable support.

Also, we sincerely thank our parents for helping us in all aspects to complete the project work. Finally, we would like to appreciate our friends, colleagues for their direct and indirect contribution.

Date: 15/04/2025

Place: Kolhapur

Miss. Prachi Chandrakant Kesarkar.

INTERNSHIP UNDERTAKING

1. Student Name	Yash Sanjay Mane.
2. Current Address	Sarnobatwadi, Mali Mala, Kolhapur.
3. Residence Address	Sarnobatwadi, Mali Mala, Kolhapur.
4. Email id	Maneyash090@gmail.com
5. Mobile Nos.	9529828271
9. Internship /Area (Company/Institute)	Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

I confirm that I agree with the terms, conditions, and requirements of the Internship Policy

Student Signature: Yash

Date: 15/04/2025

I confirm that the student has attended the internship orientation and has met all paperwork and process requirements to participate in the internship program, and has received approval from his mentor.

Sign of Head of the Department:

Date: 15/04/2025

HC HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE,KOLHAPUR
(EMPOWERED AUTONOMOUS)

INTERNSHIP UNDERTAKING

1. Student Name	Sakshi Dipak Koli
2. Current Address	6/1135 Near Parmarth Niketan Sangli road Ichalakaranji.
3. Residence Address	6/1135 Near Parmarth Niketan Sangli road Ichalakaranji.
4. Email id	Sakshikoli273@gmail.com
5. Mobile Nos.	8999207114
9. Internship /Area (Company/Institute)	Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

I confirm that I agree with the terms, conditions, and requirements of the Internship Policy

Student Signature: Koli

Date: 15/04/2025

I confirm that the student has attended the internship orientation and has met all paperwork and process requirements to participate in the internship program, and has received approval from his/her mentor.

Sign of Head of the Department:

Date: 15/04/2025

HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE,KOLHAPUR
(EMPOWERED AUTONOMOUS)

INTERNSHIP UNDERTAKING

1. Student Name	Galaxy Sunil Powar.
2. Current Address	A/P Bambawade, Tal. Shahuwadi, Dist. Kolhapur.
3. Residence Address	A/P Bambawade, Tal. Shahuwadi, Dist. Kolhapur.
4. Email id	shravni081@gmail.com
5. Mobile Nos.	9503142554
9. Internship /Area (Company/Institute)	Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

I confirm that I agree with the terms, conditions, and requirements of the Internship Policy

Student Signature: Galaxy

Date: 15/04/2025

I confirm that the student has attended the internship orientation and has met all paperwork and process requirements to participate in the internship program, and has received approval from his/her mentor.

Sign of Head of the Department: Gaupale

Date: 15/04/2025

HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

INTERNSHIP UNDERTAKING

1. Student Name	Samruddhi Sudhir Patil.
2. Current Address	Plot no. 143, near Mahadev temple, Rajopadhyenagar, Kolhapur. 416012
3. Residence Address	Plot no. 143, near Mahadev temple, Rajopadhyenagar, Kolhapur. 416012
4. Email id	samruddhipatil568@gmail.com
5. Mobile Nos.	7219462528, 8857872913
9. Internship /Area (Company/Institute)	Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

I confirm that I agree with the terms, conditions, and requirements of the Internship Policy

Student Signature: Patil

Date: 15-04-2025

I confirm that the student has attended the internship orientation and has met all paperwork and process requirements to participate in the internship program, and has received approval from his/her mentor.

Sign of Head of the Department: Gaupale

Date: 15/04/2025

HC HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

INTERNSHIP UNDERTAKING

1. Student Name	Samruddhi Bhanudas Patil.
2. Current Address	A/P. Borgaon, Tal. Walwa, Dist. Sangli.
3. Residence Address	A/P. Borgaon, Tal. Walwa, Dist. Sangli.
4. Email id	Patilsamruddhi2678@gmail.com
5. Mobile Nos.	7385035793
9. Internship /Area (Company/Institute)	Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

I confirm that I agree with the terms, conditions, and requirements of the Internship Policy

Student Signature: Sam

Date: 15/04/2025

I confirm that the student has attended the internship orientation and has met all paperwork and process requirements to participate in the internship program, and has received approval from his/her mentor.

Sign of Head of the Department: Ganpati

Date: 15/04/2025

HC HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

INTERNSHIP UNDERTAKING

1. Student Name	Prachi Chandrakant Kesarkar.
2. Current Address	Ketakale nagar, lane no. 04, near Manere Highschool, Kabnoor, Ichalkaranji.
3. Residence Address	Ketakale nagar, lane no. 04, near Manere Highschool, Kabnoor, Ichalkaranji.
4. Email id	Prachikesarkar25@gmail.com
5. Mobile Nos.	8080026472
9. Internship /Area (Company/Institute)	Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

I confirm that I agree with the terms, conditions, and requirements of the Internship Policy

Student Signature: Pesorka

Date: 15/04/2025

I confirm that the student has attended the internship orientation and has met all paperwork and process requirements to participate in the internship program, and has received approval from his mentor.

Sign of Head of the Department: Gaupdy

Date: 15/04/2025

VC HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE,KOLHAPUR
(EMPOWERED AUTONOMOUS)

ATTENDANCE SHEET

Name and Adress of the Company: Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

Email Id:

Name of Supervisor: Mr. Gunwant S. Katkar.

Name of the Student	Mane Yash Sanjay
Roll Number	5418
Name of Course	M.Sc. Part - I Sem - II Microbiology
Date of Commencement of Training	16 th December 2024
Date of Completion of Training	31 th December 2024

Month and Year:

Sr. No	Date	Day	Time	Work done	Sign
1.	16-12-2024	Monday	10am-5pm	Reporting	
2.	17-12-2024	Tuesday	10am-5pm	General Observation	
3.	18-12-2024	Wednesday	10am-5pm	General observation of Bakery section	
4.	19-12-2024	Thursday	10am-5pm	General observation of Dairy section	
5.	20-12-2024	Friday	10am-5pm	Procedures of all Dairy products	
6.	21-12-2024	Saturday	10am-5pm	Procedures of all Bakery products	
7.	22-12-2024	Sunday	10am-5pm	Testing of all Row Material	
8.	23-12-2024	Monday	10am-5pm	Testing of all finished products	
9.	24-12-2024	Tuesday	10am-5pm	Testing of all finished products	
10.	25-12-2024	Wednesday	10am-5pm	Microbial testing of finished products	
11.	26 -1-2024	Thursday	10am-5pm	Microbial testing of Milk	
12.	27-12-2024	Friday	10am-5pm	Documentation	
13.	28-12-2024	Saturday	10am-5pm	Quality Control	
14.	30-12-2024	Monday	10am-5pm	Quality Control	
15.	31-12-2024	Tuesday	10am-5pm	Quality Control	

ATTENDANCE SHEET

Name and Adress of the Company: Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

Email Id:

Name of Supervisor: Mr. Gunwant S. Katkar.

Name of the Student	Sakshi Dipak Koli.
Roll Number	5416
Name of Course	M.Sc. Part - I Sem - II Microbiology
Date of Commencement of Training	16 th December 2024
Date of Completion of Training	31 th December 2024

Month and Year:

Sr. No	Date	Day	Time	Work done	Sign
1.	16-12-2024	Monday	10am-5pm	Reporting	
2.	17-12-2024	Tuesday	10am-5pm	General Observation	
3.	18-12-2024	Wednesday	10am-5pm	General observation of Bakery section	
4.	19-12-2024	Thursday	10am-5pm	General observation of Dairy section	
5.	20-12-2024	Friday	10am-5pm	Procedures of all Dairy products	
6.	21-12-2024	Saturday	10am-5pm	Procedures of all Bakery products	
7.	22-12-2024	Sunday	10am-5pm	Testing of all Row Material	
8.	23-12-2024	Monday	10am-5pm	Testing of all finished products	
9.	24-12-2024	Tuesday	10am-5pm	Testing of all finished products	
10.	25-12-2024	Wednesday	10am-5pm	Microbial testing of finished products	
11.	26 -1-2024	Thursday	10am-5pm	Microbial testing of Milk	
12.	27-12-2024	Friday	10am-5pm	Documentation	
13.	28-12-2024	Saturday	10am-5pm	Quality Control	
14.	30-12-2024	Monday	10am-5pm	Quality Control	
15.	31-12-2024	Tuesday	10am-5pm	Quality Control	

ATTENDANCE SHEET

Name and Adress of the Company: Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

Email Id:

Name of Supervisor: Mr. Gunwant S. Katkar.

Name of the Student	Galaxy Sunil Powar.
Roll Number	5427
Name of Course	M.Sc. Part - I Sem - II Microbiology
Date of Commencement of Training	16 th December 2024
Date of Completion of Training	31 th December 2024

Month and Year:

Sr. No	Date	Day	Time	Work done	Sign
1.	16-12-2024	Monday	10am-5pm	Reporting	
2.	17-12-2024	Tuesday	10am-5pm	General Observation	
3.	18-12-2024	Wednesday	10am-5pm	General observation of Bakery section	
4.	19-12-2024	Thursday	10am-5pm	General observation of Dairy section	
5.	20-12-2024	Friday	10am-5pm	Procedures of all Dairy products	
6.	21-12-2024	Saturday	10am-5pm	Procedures of all Bakery products	
7.	22-12-2024	Sunday	10am-5pm	Testing of all Row Material	
8.	23-12-2024	Monday	10am-5pm	Testing of all finished products	
9.	24-12-2024	Tuesday	10am-5pm	Testing of all finished products	
10.	25-12-2024	Wednesday	10am-5pm	Microbial testing of finished products	
11.	26 -1-2024	Thursday	10am-5pm	Microbial testing of Milk	
12.	27-12-2024	Friday	10am-5pm	Documentation	
13.	28-12-2024	Saturday	10am-5pm	Quality Control	
14.	30-12-2024	Monday	10am-5pm	Quality Control	
15.	31-12-2024	Tuesday	10am-5pm	Quality Control	

ATTENDANCE SHEET

Name and Adress of the Company: Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

Email Id:

Name of Supervisor: Mr. Gunwant S. Katkar.

Name of the Student	Samruddhi Sudhir Patil.
Roll Number	5426
Name of Course	M.Sc. Part - I Sem - II Microbiology
Date of Commencement of Training	16 th December 2024
Date of Completion of Training	31 th December 2024

Month and Year:

Sr. No	Date	Day	Time	Work done	Sign
1.	16-12-2024	Monday	10am-5pm	Reporting	
2.	17-12-2024	Tuesday	10am-5pm	General Observation	
3.	18-12-2024	Wednesday	10am-5pm	General observation of Bakery section	
4.	19-12-2024	Thursday	10am-5pm	General observation of Dairy section	
5.	20-12-2024	Friday	10am-5pm	Procedures of all Dairy products	
6.	21-12-2024	Saturday	10am-5pm	Procedures of all Bakery products	
7.	22-12-2024	Sunday	10am-5pm	Testing of all Row Material	
8.	23-12-2024	Monday	10am-5pm	Testing of all finished products	
9.	24-12-2024	Tuesday	10am-5pm	Testing of all finished products	
10.	25-12-2024	Wednesday	10am-5pm	Microbial testing of finished products	
11.	26 -1-2024	Thursday	10am-5pm	Microbial testing of Milk	
12.	27-12-2024	Friday	10am-5pm	Documentation	
13.	28-12-2024	Saturday	10am-5pm	Quality Control	
14.	30-12-2024	Monday	10am-5pm	Quality Control	
15.	31-12-2024	Tuesday	10am-5pm	Quality Control	

ATTENDANCE SHEET

Name and Adress of the Company: Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

Email Id:

Name of Supervisor: Mr. Gunwant S. Katkar.

Name of the Student	Samruddhi Bhanudas Patil.
Roll Number	5425
Name of Course	M.Sc. Part - I Sem - II Microbiology
Date of Commencement of Training	16 th December 2024
Date of Completion of Training	31 th December 2024

Month and Year:

Sr. No	Date	Day	Time	Work done	Sign
1.	16-12-2024	Monday	10am-5pm	Reporting	Patil
2.	17-12-2024	Tuesday	10am-5pm	General Observation	Patil
3.	18-12-2024	Wednesday	10am-5pm	General observation of Bakery section	Patil
4.	19-12-2024	Thursday	10am-5pm	General observation of Dairy section	Patil
5.	20-12-2024	Friday	10am-5pm	Procedures of all Dairy products	Patil
6.	21-12-2024	Saturday	10am-5pm	Procedures of all Bakery products	Patil
7.	22-12-2024	Sunday	10am-5pm	Testing of all Row Material	Patil
8.	23-12-2024	Monday	10am-5pm	Testing of all finished products	Patil
9.	24-12-2024	Tuesday	10am-5pm	Testing of all finished products	Patil
10.	25-12-2024	Wednesday	10am-5pm	Microbial testing of finished products	Patil
11.	26 -1-2024	Thursday	10am-5pm	Microbial testing of Milk	Patil
12.	27-12-2024	Friday	10am-5pm	Documentation	Patil
13.	28-12-2024	Saturday	10am-5pm	Quality Control	Patil
14.	30-12-2024	Monday	10am-5pm	Quality Control	Patil
15.	31-12-2024	Tuesday	10am-5pm	Quality Control	Patil

ATTENDANCE SHEET

Name and Adress of the Company: Shree Hanuman Sahakari Dudh Vyavsaik & Krishipurak Seva Sanstha Maryadit, Yalgud, Kolhapur.

Email Id:

Name of Supervisor: Mr. Gunwant S. Katkar.

Name of the Student	Prachi Chandrakant Kesarkar
Roll Number	5415
Name of Course	M.Sc. Part - I Sem - II Microbiology
Date of Commencement of Training	16 th December 2024
Date of Completion of Training	31 th December 2024

Month and Year:

Sr. No	Date	Day	Time	Work done	Sign
1.	16-12-2024	Monday	10am-5pm	Reporting	Kesarkar
2.	17-12-2024	Tuesday	10am-5pm	General Observation	Kesarkar
3.	18-12-2024	Wednesday	10am-5pm	General observation of Bakery section	Kesarkar
4.	19-12-2024	Thursday	10am-5pm	General observation of Dairy section	Kesarkar
5.	20-12-2024	Friday	10am-5pm	Procedures of all Dairy products	Kesarkar
6.	21-12-2024	Saturday	10am-5pm	Procedures of all Bakery products	Kesarkar
7.	22-12-2024	Sunday	10am-5pm	Testing of all Row Material	Kesarkar
8.	23-12-2024	Monday	10am-5pm	Testing of all finished products	Kesarkar
9.	24-12-2024	Tuesday	10am-5pm	Testing of all finished products	Kesarkar
10.	25-12-2024	Wednesday	10am-5pm	Microbial testing of finished products	Kesarkar
11.	26 -1-2024	Thursday	10am-5pm	Microbial testing of Milk	Kesarkar
12.	27-12-2024	Friday	10am-5pm	Documentation	Kesarkar
13.	28-12-2024	Saturday	10am-5pm	Quality Control	Kesarkar
14.	30-12-2024	Monday	10am-5pm	Quality Control	Kesarkar
15.	31-12-2024	Tuesday	10am-5pm	Quality Control	Kesarkar

Regd. No. : K.P.R./P.R.D. (A) 385. Estd. : 14 July 1967

GSTIN : 27AAAAS1248K1ZF

FSSC 22000:CERTIFIED SOCIETY

श्री हनुमान सहकारी दूध व्यवसायिक व कृषीपूरक सेवा संस्था मर्यादित, यळगूड.

SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD.

TAL. HATKANANGALE, DIST. KOLHAPUR (MAHARASHTRA) PIN-416236. (INDIA)

Yalgud : H.O. 09421584080, 09421594085, 07722054560
E-mail : hohanuman@gmail.com, kophanuman@gmail.com
Website : www.yalguddairy.com

Regional Office : BHASKAR PLAZA, Shahupuri, Kolhapur.
Ph : (0231) 2680960/61, 08793204561
Chairman & M. D. : (0231) 2536720, 2537600

Ref No.814/2024-25

Date: 15.03.2025

CERTIFICATE

This is to certify that **Mr. Yash Sanjay Mane,** student of M.sc. FY (Microbiology). From Department of Microbiology, Vivekanand College, Kolhapur has done the Industrial Training in the organization. He has undergone him 15 days training.

During the project period we found that, he was sincere and hardworking and he has taken proper initiatives and efforts towards completing his training

"We wish all the best for future career."

Reg. NO. KPR/PRD/(A)385 ESTD. 14.07.1967 YALGUD, DIST. KOLHAPUR

GENERAL MANAGER
SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT; YALGUD.
TAL. HATKANANGALE, DIST. KOLHAPUR-416236
(MAHARASHTRA)

Regd. No : K.P.R./P.R.D. (A) 385. Estd. : 14 July 1967 GSTIN : 27AAAAS1248K1ZF

श्री हनुमान सहकारी दूध व्यवसायिक व कृषीपूरक सेवा संस्था मर्यादित, यळगूड.

SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD

TAL. HATKANANGALE, DIST. KOLHAPUR (MAHARASHTRA) PIN-416236. (INDIA)

FSSC 22000 CERTIFIED SOCIETY

Yalgud : H.O. 09421584080, 09421594085, 07722054560
E-mail : hohanuman@gmail.com, kophanuman@gmail.com
Website : www.yalguddairy.com

Regional Office : BHASKAR PLAZA, Shahupuri, Kolhapur.
Ph. : (0231) 2680960/61, 08793204561
Chairman & M. D. : (0231) 2536720, 2537800

Ref No. SHS/2024-25

Date: 15.03.2025

CERTIFICATE

This is to certify that **Miss. Sakshi Dipak Koli,** student of M.sc. FY (Microbiology). From Department of Microbiology, Vivekanand College, Kolhapur has done the Industrial Training in the organization. She has undergone her 15 days training.

During the project period we found that, she was sincere and hardworking and she has taken proper initiatives and efforts towards completing her training

"We wish all the best for future career."

Reg. NO. KPR/PRD/385 DATED 14.07.1967 YALGUD DIST.KOLHAPUR

GENERAL MANAGER

SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD TAL. HATKANANGALE, DIST. KOLHAPUR 416236 (MAHARASHTRA)

Regd. No. : K.P.R./P.R.D. (A) 385. Estd. : 14 July 1967 GSTIN : 27AAAAS1248K1ZF

Since 1967

FSSC 22000.CERTIFIED SOCIETY

श्री हनुमान सहकारी दूध व्यवसायिक व कृषीपूरक सेवा संस्था मर्यादित, यळगूड.

SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD.

TAL. HATKANANGALE, DIST. KOLHAPUR (MAHARASHTRA) PIN-416236. (INDIA)

Yalgud : H.O. 09421584080, 09421594085, 07722054560
E-mail : hohanuman@gmail.com, kophanuman@gmail.com
Website : www.yalguddairy.com

Regional Office : BHASKAR PLAZA, Shahupuri, Kolhapur.
Ph : (0231) 2680960/61, 08793204561
Chairman & M. D. : (0231) 2536720, 2537600

Ref No 873/2024-25

Date: 15.03.2025

CERTIFICATE

This is to certify that **Miss. Galaxy Sunil Pawar,** student of M.sc. FY (Microbiology). From Department of Microbiology, Vivekanand College, Kolhapur has done the Industrial Training in the organization. She has undergone her 15 days training.

During the project period we found that, she was sincere and hardworking and she has taken proper initiatives and efforts towards completing her training

"We wish all the best for future career."

GENERAL MANAGER
SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT; YALGUD.
TAL. HATKANANGALE, DIST. KOLHAPUR-416236
(MAHARASHTRA)

Scanned with OKEN Scanner

Regd No KPR/PRD (A) 385 Estd 14 July 1967
GSTIN 27AAAAS1248K1ZF
FSSC 22000 CERTIFIED SOCIETY
श्री हनुमान सहकारी दूध व्यवसायिक व कृषीपूरक सेवा संस्था मर्यादित, यळगूड.
SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD.
TAL. HATKANANGALE, DIST. KOLHAPUR (MAHARASHTRA) PIN-416236 (INDIA)
Talgud : H.O. 09421584080, 09421594085, 07722054560
E-mail : hohanuman@gmail.com, kophanuman@gmail.com
Website : www.yalguddairy.com
Regional Office : BHASKAR PLAZA, Sharupur, Kolhapur
Ph : (0231) 2680980/81, 08793234561
Chairman & M.D. (0231) 2536720, 2537600

Ref No. SP/2024-25

Date: 15.03.2025

CERTIFICATE

This is to certify that **Miss. Samruddhi Sudhir Patil,** student of M.sc. FY (Microbiology). From Department of Microbiology, Vivekanand College, Kolhapur has done the Industrial Training in the organization. She has undergone her 15 days training.

During the project period we found that, she was sincere and hardworking and she has taken proper initiatives and efforts towards completing her training

"We wish all the best for future career."

GENERAL MANAGER
SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA
KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD
TAL. HATKANANGALE, DIST. KOLHAPUR 416236
(MAHARASHTRA)

Scanned with OKEN Scanner

Regd. No. K.P.R./P.R.D. (A) 385 Estd. : 14 July 1967 GSTIN 27AAAAS1248K1ZF

श्री हनुमान सहकारी दूध व्यवसायिक व कृषीपूरक सेवा संस्था मर्यादित, यळगूड.

SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD

FSSC 22000 CERTIFIED SOCIETY

TAL. HATKANANGALE, DIST. KOLHAPUR (MAHARASHTRA) PIN-416236. (INDIA)

Yalgud : H.O. 09421584080, 09421594085, 07722054560
E-mail : hohanuman@gmail.com, kophanuman@gmail.com
Website : www.yalguddairy.com

Regional Office : BHASKAR PLAZA, Shahupuri, Kolhapur
Ph : (0231) 2680960/61, 08793204561
Chairman & M. D. : (0231) 2536720, 2537600

Ref No. 81/2024-25

Date: 15.03.2025

CERTIFICATE

This is to certify that **Miss. Samruddhi Bhanudas Patil,** student of M.sc. FY (Microbiology). From Department of Microbiology, Vivekanand College, Kolhapur has done the Industrial Training in the organization. She has undergone her 15 days training.

During the project period we found that, she was sincere and hardworking and she has taken proper initiatives and efforts towards completing her training

"We wish all the best for future career."

Reg. NO. K.P.R./P.R.D./A/385 Estd. 14.07.1967 YALGUD. DIST. KOLHAPUR

GENERAL MANAGER
SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT; YALGUD.
TAL. HATKANANGALE, DIST. KOLHAPUR-416236
(MAHARASHTRA)

Regd. No. : K.P.R./P.R.D. (A) 385. Estd. : 14 July 1967 GSTIN : 27AAAAS1248K1ZF

Since 1967

ISO 22000:CERTIFIED SOCIETY

श्री हनुमान सहकारी दूध व्यवसायिक व कृषीपूरक सेवा संस्था मर्यादित, यळगूड.

SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD.

TAL. HATKANANGALE, DIST. KOLHAPUR (MAHARASHTRA) PIN-416236. (INDIA)

Yalgud : H.O. 09421584080, 09421594085, 07722054560
E-mail : hohanuman@gmail.com, kophanuman@gmail.com
Website : www.yalguddairy.com

Regional Office : BHASKAR PLAZA, Shahupuri, Kolhapur.
Ph : (0231) 2660960/61, 08793204561
Chairman & M. D. : (0231) 2536720, 2537600

Ref No. 870/2024-25

Date: 15.03.2025

CERTIFICATE

This is to certify that **Miss. Prachi Chandrakant Kesarkar,** student of M.sc. FY (Microbiology). From Department of Microbiology, Vivekanand College, Kolhapur has done the Industrial Training in the organization. She has undergone her 15 days training.

During the project period we found that, she was sincere and hardworking and she has taken proper initiatives and efforts towards completing her training

"We wish all the best for future career."

GENERAL MANAGER
SHREE HANUMAN SAHAKARI DUDH VYAVSAIK VA KRISHIPURAK SEVA SANSTHA MARYADIT; YALGUD.
TAL. HATKANANGALE, DIST. KOLHAPUR-416236
(MAHARASHTRA)

INDEX

AN

INDUSTRIAL TRAINING REPORT OF

SHRI HANUMAN SAHAKARI DUDH VYAVASAYIK
VA KRISHIPURAK SEVA SANSTHA
MARYADIT, YALGUD

Submitted by -

1. Sakshi Dipak Koli
2. Yash Sanjay Mane
3. Galaxy Sunil Pawar
4. Samruddhi Sudhir Patil
5. Samruddhi Bhanudas Patil
6. Prachi Chandrakant Kesarkar

M.SC. FY.

PG DEPARTMENT OF MICROBIOLOGY,

VIVEKANAND COLLEGE, KOLHAPUR.

Guided By – Dr. S. D. Mali. (Mam)

ACKNOWLEDGEMENT

We have this opportunity to thank shree hanuman sahakari dudh vyavasaik & krishipurak seva sanstha maryadit, Yalgud for allowing us to undergo for 15 days training in processing and quality control department of Yalgud dairy and Sahakar bakery for helping us understand how work is done.

The project is entitled processing information and different raw material and finished goods test. We are extremely thankful to all managing department, section in charge and other staff members of Yalgud dairy and Sahakar bakery for guiding us.

We would really like to thank **Labour Officer** sir for giving us the opportunity to do this industrial training.

Date:

DECLARATION

We here by declare that this project is an original work submitted by the following group members who have actively made a contribution. Any other work of similar nature has been appropriately referenced in this report.

NAME OF THE STUDENTS -

1. Sakshi Dipak Koli
2. Yash Sanjay Mane
3. Galaxy Sunil Pawar
4. Samruddhi Sudhir Patil
5. Samruddhi Bhanudas Patil
6. Prachi Chandrakant Kesarkar

Place: Shree Hanuman Sahakari Dudh Vyavasayik Va Krishipurak Seva Sanstha Maryadit, **Yalgud**.

Date :

EXECUTIVE SUMMERY

This report is about our internship program with SHRI HANUMAN SAHAKARI DUDH VAYAVSAYIK VA KRISHIPURAK SEVA SANSTHA MARYADIT, YALGUD. In this comprehensive report, we have discussed every major aspect of the bakery and dairy, which we observed and percevied during our internship program. We mainly work in lab testing and prodution operations. The main purpose of an internship is to learn by working in a practical environment and to apply the knowledge acquired during the studies in a real-world scenario in order to tackle the problems using the knowledge and skill learned during the acedemic processes and internship progress.

This internship report covers many important aspects which are basically related with the operations and improvements in the products of bakery and dairy. This report also contains our perceptions about the lab testing, adminstration, mechanism of different machines and the working environment of the industry.

LEARNING OBJECTIVES

- To familiarize with an organizational function and their duties.
- To understand about how an organizational system performing
- To study managerial activities, perform in an organization
- To get a practical exposure of dairy and bakery industry and advanced techniques used in dairy and bakery industry
- Gaining essential background
- Develop a skill in food processing, quality control and food safety management
- To understand market demand, customers expectations and preference about product

COMPANY PROFILE

- Name: Shri. Hanuman Sahakari Dudh Vyavsaikva Krishipurak seva Sanstha, maryadit Yalgud, Tal.: Hatkanangale, Dist.: Kolhapur
- Establishment/history:14 July 1967
- Plant Location: The Dairy plant is located at post Randeviwadi which is 2 Km away Form Head Office.
- Establishment Of the Society: 14 July 1967
- Registration Number: K.P.R./P.R.D.(A)385
- Address: A/p: Yalgud. Tal: Hatkanangale, Dist:Kolhapur 416203
- Founder & Chairman: Sahakarratna Mr. Vasantrao Tatyasaheb Mohite

Behind every successful society there is always, at least one idealist. This is true in case of this society also. Shri Vasantrao Tatyasaheb Mohite, founder Chairman of Shri Hanuman UdhyogSamuh at Yalgud, Tal.: Hatkanangale, Dist.: Kolhapur, is a driving force behind this co-operative society also. He conceived the idea for organizing a society for upliftment of poor and needy people of Yalgud and surrounding area, to give them remunerative occupation, so that these people improve their living standard.

Yalgud is a village, as backward as any other way side, village in India. Its population is around 9000. It is about 27km east of Kolhapur, situated between kagal & Ichalkarangi road, located at Maharashtra & Karnataka boundary & near the left back of Dudhaganga river, which is the demarcation line in the east between Maharashtra & Karnataka State. So Yalgud means a land of seven hillocks. That is how Yalgud is geographically situated, at the foot, of seven hillocks. River Dudhaganga is flowing at the out skirts of agricultural land of Yalgud, about 3 Km away from proper Yalgud village. Yalgud village 3Km away from Hupari called silver city cause of making famous silver ornaments. These silver ornament, particularly, silver chains, worn on the ladies' ankles are marketed throughout Indian as well as exported abroad. Water form Dudhaganga is utilized for irrigating Yalgud's agricultural land while Water form Panchaganga River.

ORGANIZATIONAL STRUCTURE

1) Shri. Vasantrao Tatyasaheb Mohite	President
2) Shri. Bhagwanrao Maruti Patil	Vice-president
3) Shri. Sujit Vasantrao Mohite	Director
4) Shri. Dhulgonda Balgonda Patil	Director
5) Shri. Mansingrao Ganpatrao Jagtap	Director
6) Shri. Mahaveer Babu	Director
7) Shri. Mahendra Ramrao Benadikar	Director
8) Shri. Vasanatrao Babaso Patil	Director
9) Shri. Annasaheb Rajgonda Patil	Director
10) Shri. Shital Rajaram Bagal	Director
11) Shri. Vishwanath Bhimu Mali	Director
12) Shri. Maruti Gunda Kambale	Director
13) Shri. Shivaji Satu Pujari	Director
14) Smt. Sunita Subhash Tiware	Director

Shri. Shrikant S. Sarnaik

(General Manager)

Shri. Arun M. Kasote
(Chief Accountant)

Shri. Gunwant S. Katkar
(Project Manager)

Shri. Pradeep D. Merwade
(System Manager)

Shri. Santosh M. Gavali
(Labour Officer)

Shri. Sadashiv H. Gurav
(Branch Manager, Kolhapur)

Shri. Ravindra J. Patil
(Marketing Manager)

Shri. Anand N. Ghorpade
(Purchase Officer)

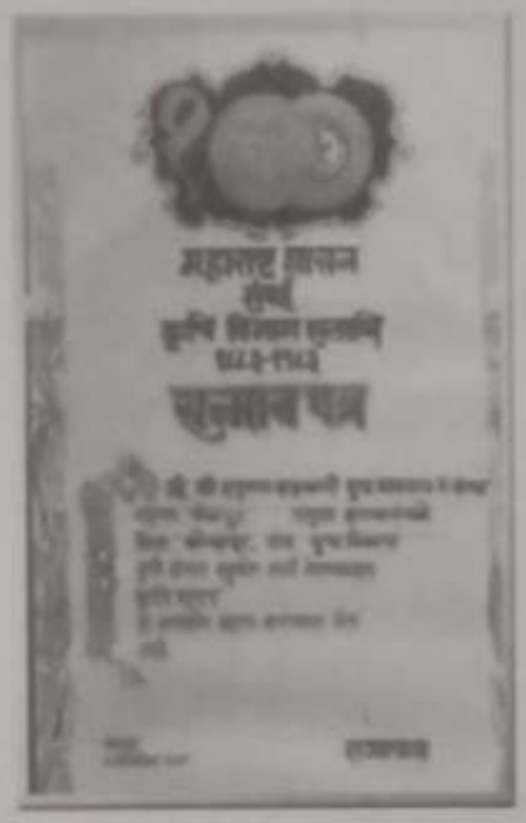
Shri. Virsen S. Bagal
(Dairy Manager)

Shri. Eknath P. Shinde
(Proceeding Clerk)

AWARDS

Awarded "Smruti Chinha" by Sahakar Bharati, Pune for valuable work done in Co-operative Sector.

In 1986, awarded "Smruti Chinha" by Late. Vasantrao Naik Pratishthan at Pusad.



Government of Maharashtra awarded us, a Gold Medal of "Krishi Shatsanvatsari" along with cash prize of Rs.5,001/- in 1985 and honoured us with a "Krishibhushan" citation, at the hands of the Governor of Maharashtra state at a special function at Nagpur.

Scanned with OKEN Scanner

Awarded "Gulabrao Patil Sahakar Gourav Puraskar" and Rs. 11000/- by Gulabrao Patil Lokseva Vishvastha Nidhi, Sangli and Zilla Sahakari Board, Sangli on 21 January 2000 for valuable work done in Primary Dudh Utpadak Va Purvatha Sahakari

Awarded "Bharatiya Udyog Ratna" award by Indian Economic Development and Research Association, New Delhi in presence of Honourable Shri V. K. Patil, State Minister of Finance Central Government.

Scanned with OKEN Scanner

SKELETON OF COMPANY

System Cycle of Co-operative Food Production Unit: -

Securit Gate - The detailed information of workers, officers and the raw material vehicles, if finished products are to be dispatched it is needed to be informed and the is recorded on the gate.

Store - A place to store the raw material, in proper conditions and to keep it from rodents, dirt, away from any insect infections. Store manager and quality control checks the raw material and report to the production department, project manager and H.O.D to order the raw material. Store manager is the person ultimately responsible for the day-to-day operations of a retail store. Store manager check the raw material and report to the quality control, project manager and H.O.D to order the raw material.

Purchase Officer - A purchasing manager, also known as a purchasing manager or supply manager heads a team responsible for procuring goods and services for resale or company use. They seek the best available quality for the lowest price. They evaluate suppliers, negotiate contracts and review products quality. The specifications for purchasing are already given by the production manager. Purchase manager works for wholesalers or retailers purchase finished goods. Purchasing manager oversee the work of buyers and purchasing agents and typically handle more complex procurement tasks. The high budget purchase orders need a verification from the higher authorities.

M.D/ Director/ Chairman - Director manager approves the for ordered raw material. If the order of raw material is very large then it goes to the chairman and managing director.

Quality Control (Sampling/ Lab testing) - The purpose of the testing is to determine any needs for corrective actions in the manufacturing process. Quality controls for raw materials and comprise identify, purity and content testing according to their parameters, Samples shall be tested for each lot for ascertaining conformity of the material to the requirement of the standard.

Processing and Production - Processing is a program that involves the transformation of raw material to finished products. It consists of a series of steps including mixing, proofing, baking, cooling, slicing and packaging.

Quality Control (Sampling/ Lab testing) - Quality control is a process through which a business seeks to ensure that products quality is maintained or improved. Quality control manager supervises staff and oversee products development procedures to ensure that products meet quality and efficiency standards.

Packaging and Storage - convenient goods handling entails designing transport packaging in such a manner that it may be held, lifted, moved set down and stowed easily, efficiently and safely. Packaging thus has a crucial impact on the efficiency of transport handling and storage of goods.

Dispatch - Dispatching is the routine of setting productive activities in motion through the release of orders and necessary instructions according to pre- planned times and sequence of operations in route sheets and loading schedules.

INTRODUCTION

The dairy industry encompasses diverse products like milk, cheese, and yogurt, and addresses issues such as lactose intolerance. Meanwhile, bakery products incorporate ingredients such as flour, sugar, eggs, and natural resources. Key dairy components include calcium, vitamin D, probiotics, and dietary guidelines, while bakery ingredients encompass yeast, fat, whole grains, and dietary guidelines. Both dairy and bakery products significantly contribute to the nutrient composition of the food industry. This nutrient-rich composition can be attributed to a combination of essential NLP terms, including whole milk, diabetes risk, zinc, and selenium, among others

Dairy -

Dairy farming is a vital part of the global food system, providing essential nutrients to thousands of people around the State. Dairy products, such as milk, cheese, and yogurt, are rich in protein, calcium, and other vital nutrients that support human health and well-being. With the global demand for dairy products continuing to rise, the dairy industry plays a critical role in meeting the world's nutritional needs while also contributing to local economies and communities.

Bakery -

The Art of Sweet and Savory Delights Bakery, the art of transforming simple ingredients into an array of sweet and Savory delights, has been a cornerstone of culinary traditions for centuries. From crusty bread and delicate pastries to decadent cakes and cookies, baked goods bring people together, evoke emotions, and satisfy our cravings. Whether it's a family-owned bakery or a large-scale commercial operation, the bakery industry plays a vital role in providing fresh, delicious, and nutritious products to communities around the world.

❖ General observation:

➢ Visited Every Plant of Dairy -

We visited every plant of dairy with our training incharge which includes all processing departments like RMRD, Chilling, Milk Pasteurization, Quality Control, Milk Dispatch, Dahi, Lassi, Flavoured Milk, Shrikhand, Amarakhand, Basundi Section, Pedha & Mango Burfi, Paneer Section.

❖ Raw Milk Receiving Dock

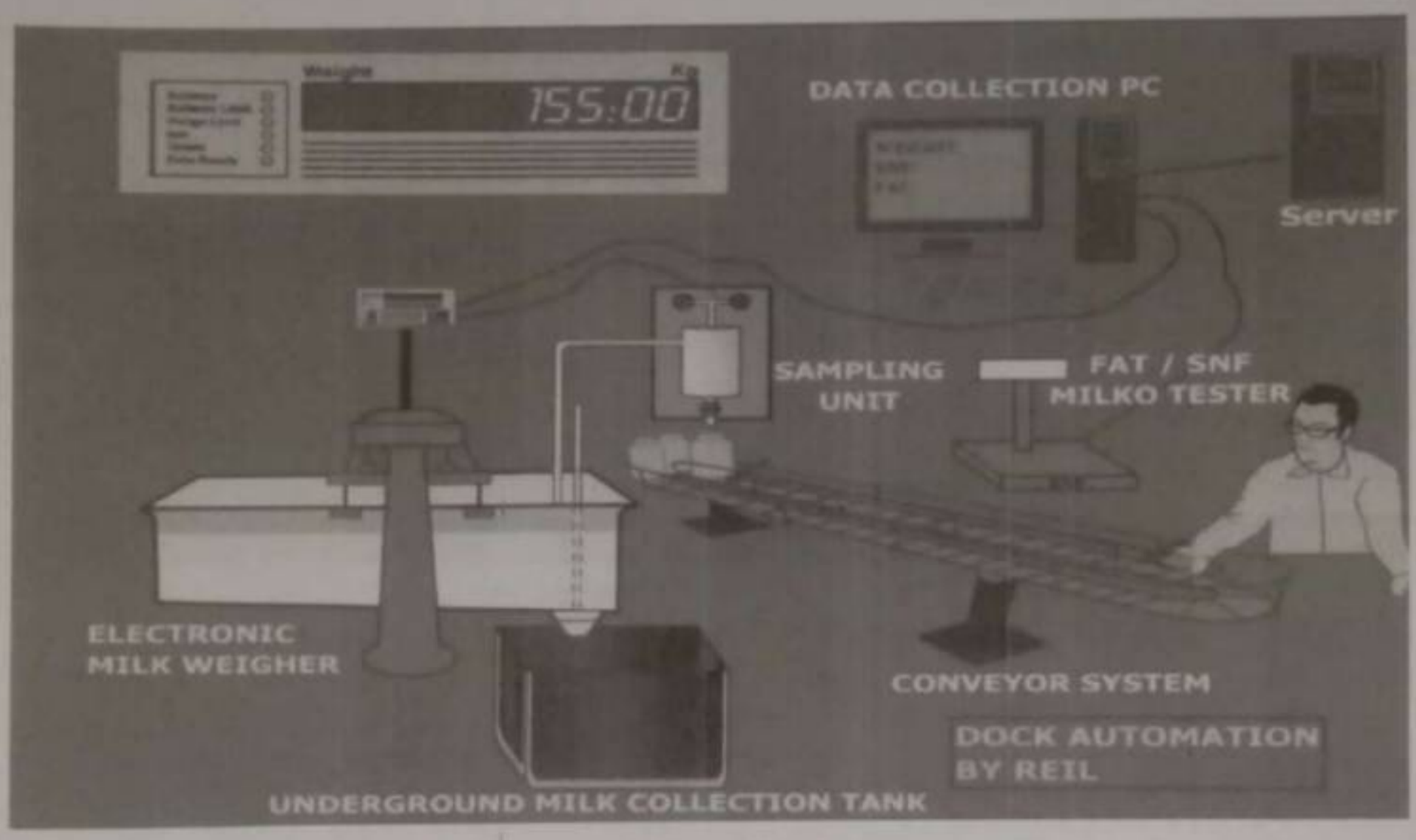


Fig. Raw Milk Receiving Section

Unloading of Milk Can

The truck carrying the filled cans is brought alongside the unloading platform. The milk cans are then unloaded manually. The milk cans are then assembled for grading in a definite order, according to each supplier, viz. the contractor or patron. If a milk tanker is used, it is first properly positioned so that pipe fitting connections can be made conveniently in the Tanker bay.

Scanned with OKEN Scanner

Cap Removing Machine

After unloading of all cans, all cans are conveys to the cap removing machine. The cap removing machine works on the vibration principle. After removing of caps it is collected by workers and send it to can washing machine

Grading

It is well known that the quality of the finished product depends on that of the raw material used. This refers to the classification of milk on the basis of its quality, for price-fixation. The milk grader is the key man for the proper selection of milk. The principle of grading is based on organoleptic (sensory) tests such as those for appearance, smell (odour), and taste, acidity sediment etc. are included under platform tests.

1. smell test (odour)

This furnishes an excellent indication of the organoleptic quality of milk that can be ascertained quickly (in seconds). In making the test, the cover of each can is removed, inverted and raised to the nose. The headspace in milk can is smelled. By replacing the lid and shaking the can vigorously, the test may be repeated. An experienced milk grader with a 'trained nose' decides the acceptance/rejection of the milk. The milk should be free from any off flavours.

(Referred by Manual for Dairy Laboratory Department, NDDB Karnala)

Red Alkali Test

Red alkali test is obtained after smell test.

Test is conducted by the following: NaOH -10ml

Distilled Water (pH-7.0) – 1.6 ml

Phenolphthalein -3 to 4 drops

Milk- 10 ml

Result-

1) Positive - if the solution colour get pure white

2) Negative - if the solution colour get red-white

Conclusion-

If the result is positive than that milk is unsafe to mix in good milk. That milk is collected in separate storage tank and that milk is used to make ghee and casin

If the result is negative than that milk is used for further processing.

(Referred by Methods of analysis of food)

Collection And Weight of Milk

This is an essential step in accounting for milk receipts, disposal and making payments for milk. The milk from cans is dumped into the weigh tank, either manually or mechanically. The tank is mounted on scales and the scale dial set at zero when the tank is empty. Automatic printing of the weight is now becoming a practice.

Fig. Raw Milk Collecting Tank

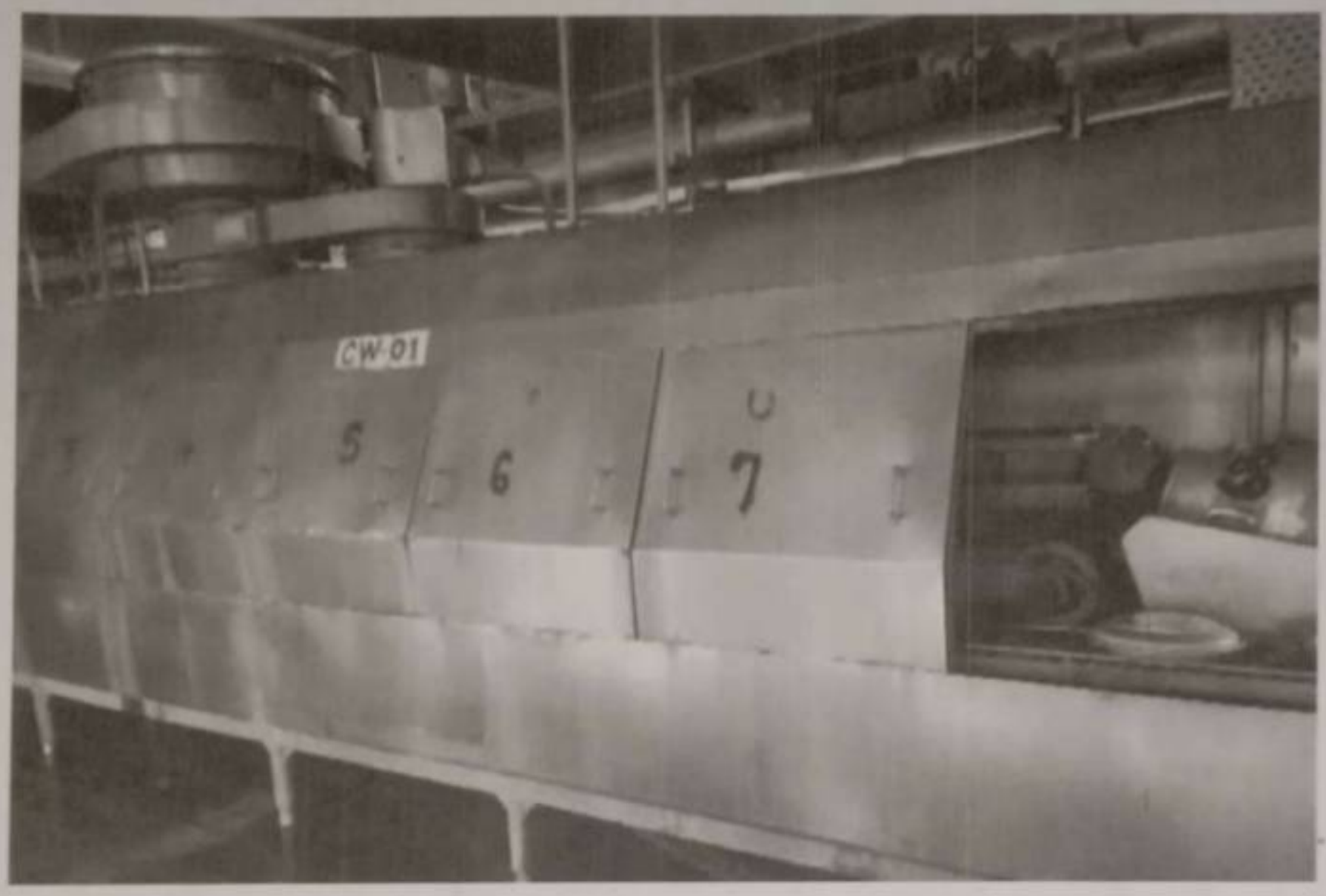
The milk in tankers (road or rail) may be measured by volume by passing it through a flow meter, and its measurement converted into weight by multiplying volume with density ($m = d \times v$). (Referred by The Legal Methodology Act, 2009)

Testing

Further testing is needed in case of 'doubtful quality' prior to its acceptance for processing. The Quality control laboratory of the dairy plant performs the requisite analyses. A record of the chemical and bacteriological quality of all accepted milk has to be maintained for making payments and for ISO records. (Referred by Methods of analysis of food)

Can Washer Machine

Straight through can washer carries the cans through the washer in a straight line by means of a continuously moving conveyor or slide along rail as they move intermittently from one jetting position to the next. The driving unit moves the can forward from one position to the next at regular intervals.



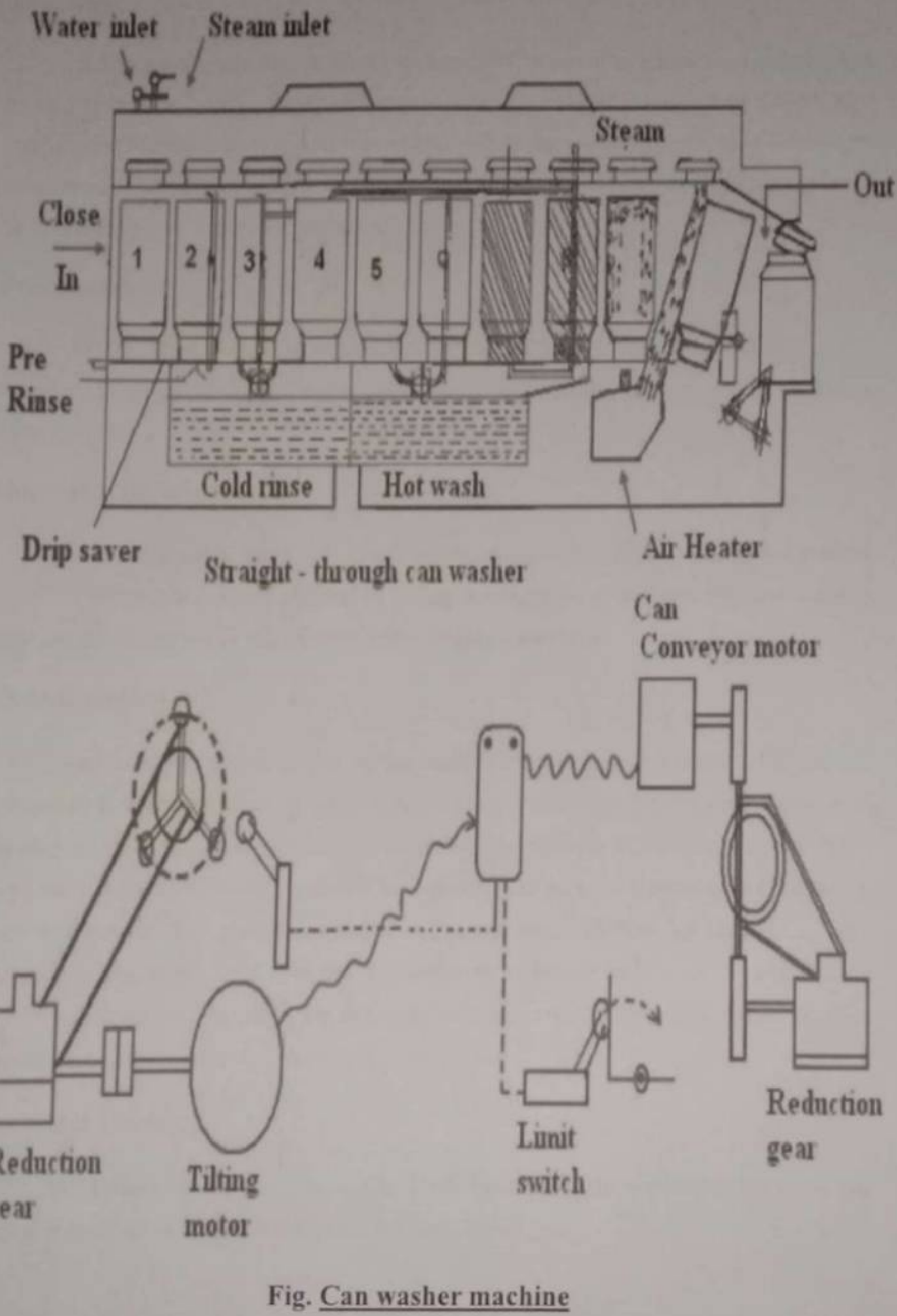


Fig. Can washer machine

Scanned with OKEN Scanner

Draining

Before passing the cans to the can washer, milk, cream or any other fluid is drained out by placing the cans in an inverted position over a drip pan before it is rinsed. Few washers have arrangement of drip saver to collect the residual milk in the can. After draining of the milk the cans are automatically loaded into the can washer in inverted position. The lid of the can is also entered into the can washer for proper cleaning.

Pre-rinsing

Rinsing of can is done by passing water through the jet to clean the milk film remaining in the can at a pressure of about 1.0 to 2.0 kg/cm2 for 3-6s, so as to remove the traces of milk.

Hot water rinsing 1

Cans are rinsed by clean hot water. The temperature of hot water is maintained at about 65-70°C. Temperature should increase at successive stages, as at the sterilization and drying stage the steam and hot air temperature will be higher than 100°C.

Caustic rinsing

Caustic rinsing is done by passing the washing solution through jets at a sufficient high pressure both inside as well as outside to remove all milk and cream film inside and outside of the cans. Cleanliness of can depends on temperature and strength of washing solution. When using alkaline solution, alkalinity should be less than 0.15 percent. Caustic soda must not be used as detergent, but sodium carbonate and a corrosion inhibitor are suitable as high temperature causes the formation and deposition of milkstone on the can surface. So the optimum temperature of washing solution must be in between 65°C and 70°C for 9-18s. After Caustic rinsing the detergent solution is drained.

Hot water rinsing 2

This is done to clean the washing solution thoroughly. The water temperature in this section is about 85-90°C and this water is drained after use.

Sterilization

sterilization of can is done by passing dry saturated steam at 110°C for 5 to 10s. Steaming process sterilizes the cans and increases the can temperature which facilitates the easy and quick drying in the drying section. The temperature, heat content and moisture content of steam influences the effectiveness of steam sterilization.

Drying

The main purpose of drying is to prevent the corrosion of metal due to moisture and to check the bacterial growth. The drying operation is accomplished by blowing jet of hot air at 110°C inside the can. The moisture holding capacity of air depends on its temperature and relative humidity.

➢ Chilling of milk Section

Chilling of milk means rapid cooling of raw milk to sufficiently low temperature so that the growth of micro-organisms present in milk is checked. In chilling Process the temperature of milk should be reduced to less than 10 degree Celsius preferably 3 - 4 degree Celsius.

Chilling

The process of chilling of milk is obtained the flowing of chilled water through refrigerator machine by pipes. Due to that chilled water the milk is get chilled and that milk is transferred to the sileos. The first operation in a dairy plant is reception, chilling and storage of milk. Raw milk is pumped from the dump tank to the storage tank through a filter and chiller. The purpose of storage tank is to hold milk at low temperature so as to maintain continuity in milk processing operations and prevent any deterioration in quality during holding and processing period.

Storage Tank

Storage tanks enable milk to be stored for longer period of holding. They must be designed for easy cleaning and sanitization, preferably through CIP process. Storage tanks consist of a stain less steel inner shell, a layer of insulation, an outer jacket and necessary fittings for inspection control and cleaning. The tanks should be insulated or refrigerated so that they can maintain the required temperature throughout the holding period. Glass wool, Thermocol, Corkboard, Foam glass or Styrofoam can be used for insulation. Corkboard or

foam glass is used in the lower portions of the tank where the insulations may carry a part of the load. Agitation must be adequate for homogeneous mixing, but gentle enough to prevent churning and incorporation of air. In many storage tanks, chilled water circulation system is provided to maintain the temperature of milk. All closed type of tanks must be equipped with a manhole round (diameter ~ 450 mm) or oval shaped to permit access to the interior for cleaning and inspection.

❖ Milk Pasteurization Section

Fig. Pasteurization Machin

➢ Separator:

Cream is a fatty product of milk, and creams of different fat contents can be prepared by the separation of milk fat from non fat solids portion of milk. Market creams for retail sale are made to different fat contents according to intended use. Cream is a richly flavoured product, which makes it desirable for use in applications such as desserts, cakes and some chocolate confectionery. It is also used in some beverages like coffee and cream liqueurs.

In dairy industry, the process of separating milk into cream and skim milk is known as separation. Cream comprises of fat concentrate in milk. Milk fat can be removed in the form of cream and the remaining portion is serum referred to as skim milk. The skim milk contains predominantly SNF and is having very little fat.

Scanned with OKEN Scanner

Principles of Cream Separation:

Separation of cream can be done either by gravity (malai) or by applying the centrifugal force. Separation of milk is possible because of difference in density between the fat (0.93) and the skim milk (1.036). When the milk fat in the form of globules rises to the surface of the milk, the globules maintain their identity at the temperature below their melting point, thereby forming fat concentrate referred to as 'Malai'.

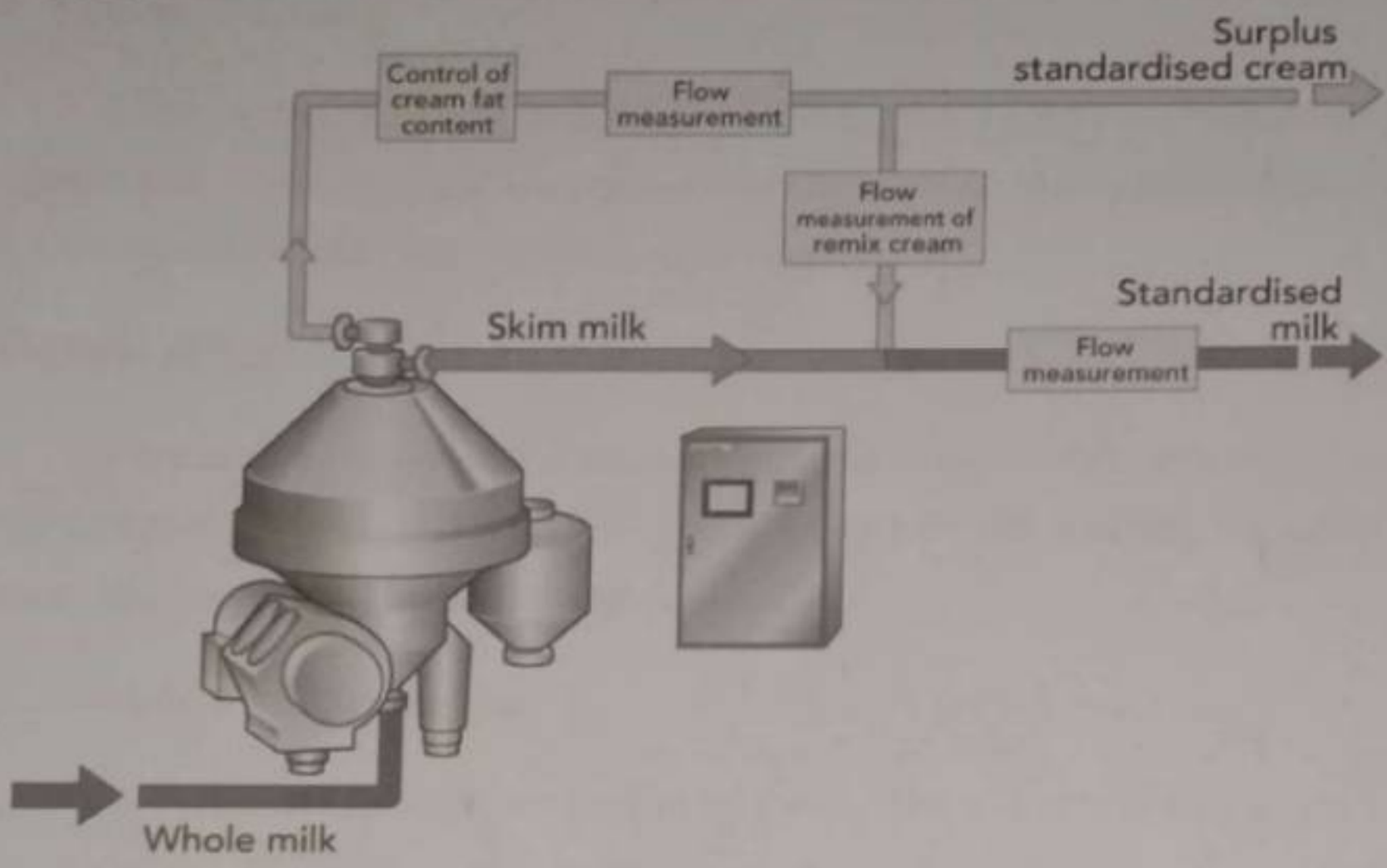


Fig. Separator

➢ **Bactofugation:**

Bactofugation is the process of removal of microorganisms from milk using centrifugal force. It is a special form of separation of microorganisms, mainly spore formers (Bacilli/Clostridia) to enable milk to be sterilized at lower temperature-time combinations. Most of the microorganisms are inactivated by pasteurization. However, the highly heat resistant spores survive pasteurization. They can lead to significant quality defects in hard cheese, semi-hard cheese or long-life products due to proteolysis, lipolysis and gas formation. Therefore, bactofugation is mainly used in the manufacture of these products. The objectives of bactofugation are as follows:

* To improve hygienic quality of milk

* To avoid heat resistant bacteria without resorting to excessive heating

* To ensure exceptionally high degree of bacteriological purity in milk.

It removes bacteria, both living and dead, from treated substances whereas traditional heat treatment kills bacteria and leaves them in food. The microorganisms involved in causing milk spoilage, reducing the quality of powder and butyric fermentation thereby causing late blowing of cheese, are mostly spore formers. Bactofugation is important in foodstuffs infected with bacteria containing thermostable endotoxins.

➢ Standardization:

It may be defined as the adjustment of one or more of the milk constituents to a nominated level. In market milk industry, this normally involves reducing the butterfat content by addition of skim milk or through the removal of cream.

Methods of Standardization:

There are three methods for standardization. These are batch, continuous and automatic standardization. They all involve the separation of whole milk into skim milk and cream and then proceeding for blending the required quantities only.

i. Batch standardization:

It is a process most commonly used in the dairies. Raw milk is held in a silo and its fat content is evaluated. Some quantity of milk is removed and separated into skim milk and cream. The amount of skim milk or cream required is determined by the calculation (or from charts) and then added to the bulk milk under continuous agitation. The bulk milk is retested to check whether the fat content is as per the desired figure or not. If it is not, further adjustments are made until the batch is standardized correctly. The demerits of batch standardization are the time taken for agitation, testing and final mixing.

ii. Continuous standardization:

Continuous standardization employs an inline sampler in association with a testing device, which samples, measures and displays the fat content every 20 seconds. The operator observes the fat content displayed and adjusts the values to blend skim milk or cream into the milk line, before the sampling point, to alter the fat content to the required level.

iii. Automatic standardization:

It is an extension of the continuous process. The separator is replaced by a microprocessor/controller unit linked to the sampler/tester system. The microprocessor / controller unit has information about the desired fat content and flow rates of the whole and skim milk. It receives signals from the sampler/tester system and responds by opening or closing a valve, which regulates the amount of skim milk added to the whole milk. The merits of this automatic process are time and labour savings and ensure more accurate standardization than other methods. Standardization depends on correct sampling, accurate testing of fat content, efficient separation and the correct amount of skim milk or cream needed.

➢ Homogenization

Homogenization implies mechanical treatment to break fat globules into smaller size of 2µm or less and uniformly disperse them in milk. Homogenization in the dairy industry is used principally to prevent or delay the formation of a cream layer in full cream milk by reducing the diameter of the fat globules. After homogenization, size of fat globules becomes less than 2µm. The average size of milk fat globule in milk is 2-12µm. The number of fat globules is 3-4 billion in a milliliter of milk. In the past, pasteurized milk usually was not homogenized, although the flavor of the milk becomes fuller by homogenization. A certain amount of cream was permitted to form to show the consumer clearly the full cream character of milk. Sterilized milk, evaporated or condensed milk and cream are generally homogenized.

Definition

Homogenization can be defined as the process in which fat globules in milk are broken down to a size small enough to prevent the formation of a cream layer. Homogenizer is a machine, which disintegrates the fat globules of milk.

Homogenizer

The homogenizer consists of a high pressure, reciprocating pump driven by a powerful motor, and a back pressure device i.e. homogenizer head. It is equipped with a set of valves and valve pressure screws that enable the exposure of liquid products to very high pressures. To withstand the high pressure and velocity and to prevent the wearing of the head, a special metal alloy 'stellite', which is noted for its hardness, is used for making the homogenizer valve. The power source is an electric motor built into the unit. The motor drives the crank and piston

assembly either by a pulley or by a set of gears, both of which greatly reduce rpm to provide a suitable speed for the pistons. The gears, cranks, and drive shafts run in an oil bath. The pistons (commonly three sometimes five or seven in number) are usually straight rods giving a small displacement. The pistons extend from the crank shaft in the crank housing, into the pressure chamber in the homogenizer head. Each piston passes through a packing gland especially designed both to prevent product leakage, despite high operating pressures and to facilitate sanitation. The parts of homogenizer head are precisely ground and made to fit together in correct position in order to avoid any leak. The wear and tear of homogenizer head is also frequently checked because if there is any shell gap the fat globules may escape through it and lower the efficiency of homogenization.

Process

The high velocity of milk confers high kinetic energy. The energy is dissipated into heat and since the passage time through the slit is small (< 0.1 m/s), the average energy density is very high. Such high energy densities lead to very intense turbulence (Reynolds number > 40,000). The pressure fluctuations are not desirable.

When the flow velocity in the valve slit is at its maximum, local pressure is less than zero. A negative pressure may cause cavitations (i.e. the formation and sudden collapse of vapor bubbles). The collapsing process creates huge shock waves, which may disrupt particles. The degree to which this happens in homogenizers varies. In most cases, globule disruption primarily is caused by turbulent eddies. The small globules do not rise to the top of milk but remains suspended in the milk or rise very slowly. Immediately after the globules are broken down, they show a tendency to cluster and rise to the top of the milk. Two-stage homogenization prevents this. The second stage breaks up any clusters, thus ensuring better dispersion on the fat throughout the milk.

Types of Homogenizer

I. High pressure homogenizer

This type of homogenizer consists of single acting triplex pump with each cylinder having suction and discharges valves. The discharge valve of each pump empties into a common discharge pipe, in which a special valve is placed. The pressure ranges between 35 – 350 bar (500-5000 psi) depending on the type of construction of the valve.

II. Low pressure-rotary type homogenizers

Usual operating pressures are below 35 bar (500 psi). The construction is so designed that milk is subjected to grinding and shearing action.

(Referred by Manual for Dairy Laboratory Department, NDDB Karnala)

❖ Pasteurization

The word pasteurization is derived from the name of an eminent French scientist Louis Pasteur (1860), who found that heating certain liquids specially wines to a high temperature improved their keeping quality. Pasteurization came into use on a commercial scale the dairy industry shortly after 1880 in Germany and Denmark. This process is widely employed in all branches of dairy industry. Heat treatment destroys microorganisms present in milk. Further, a more or less complete inactivation of enzymes occurs, depending on temperature and treatment time. In order to retain as many sensory and nutritive properties of the raw materials as possible, different heating methods have been developed to destroy pathogenic organisms (pasteurization) or destroy all microorganisms and inactivate enzymes (sterilization).

Definition

According to International Dairy Federation (IDF), pasteurization can be defined as 'a process applied to a product with the object of minimizing possible health hazards arising from pathogenic microorganisms associated with milk by heat treatment, which is consistent with minimal chemical, physical and sensory changes in the product'.

In general, the term pasteurization as applied to market milk refers to the process of heating every particle of milk to at least 63°C for 30 min or 72°C for 15s or to any temperature-time combination which is equally efficient, in a properly operated equipment. After pasteurization, the milk is immediately cooled to 5°C or below.

Scanned with OKEN Scanner

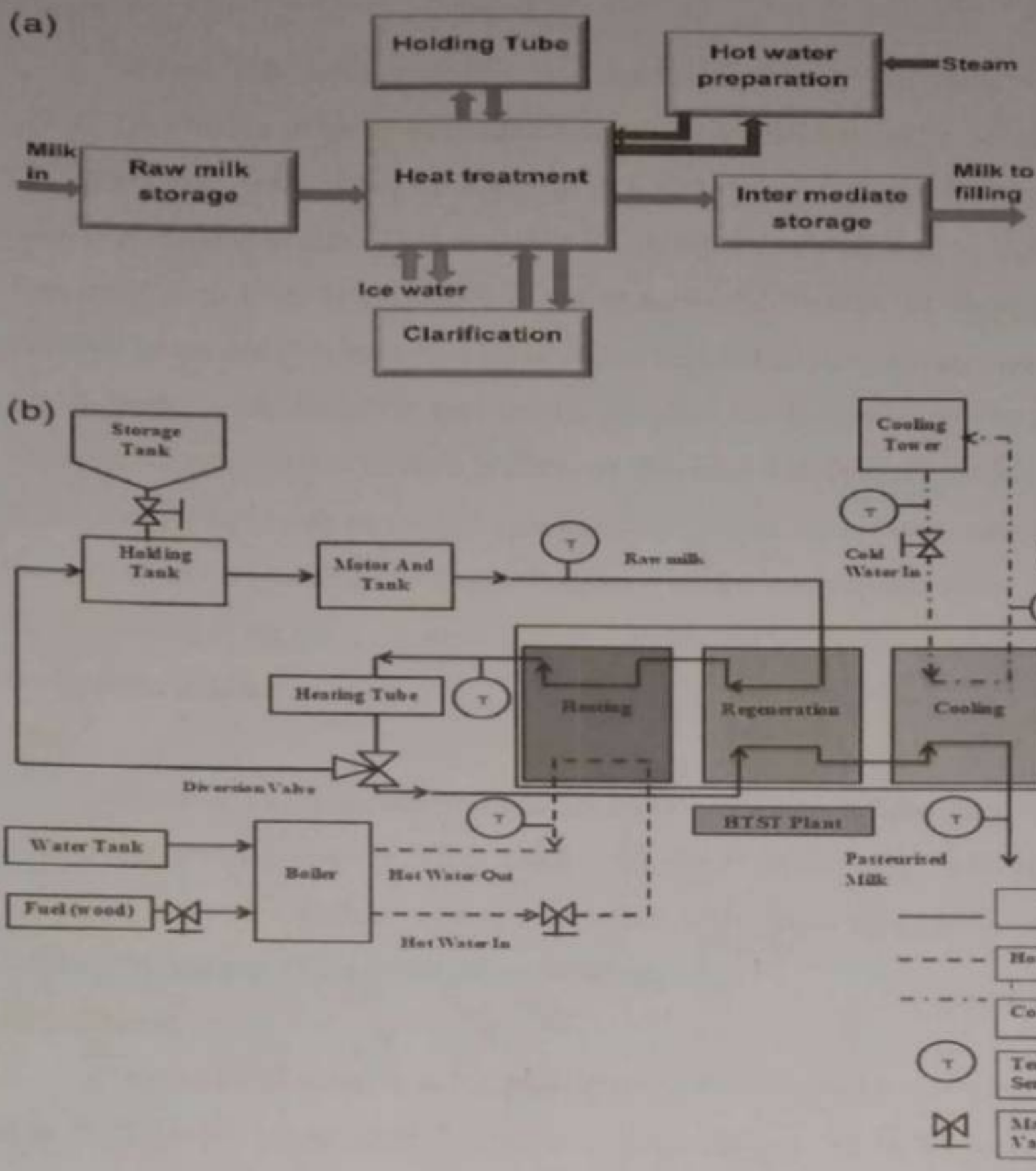


Fig. Flow Chart: Milk

❖ **Functions-of-specific-parts-of-Pasteurization**

- **Float-controlled-balance-tank-(FCBT)**

Maintains a constant head of the milk for feeding the raw milk pump; also receives milk diverted by FDV (if at all diverted).

- **Pump**

Either a rotary positive pump between the regeneration and heating sections (USA), or a centrifugal pump with a flow control device to ensure constant output, after FCBT (UK and Europe) is used.

Scanned with OKEN Scanner

- **Plates**

The Plate Heat Exchanger (PHE) (also called Paraflow) is commonly used in the HTST system. The PHE is a compact, easily cleaned unit. Its plates may be used for heating, cooling and regeneration. These plates are supported in a press between a terminal block in each heating and cooling sections. The heat moves from a hot to a cold medium through stainless steel plates. A space of approximately 3 mm is maintained between the plates by a non-absorbent rubber gasket or seal which can be vulcanized to them. The plates are numbered and must be properly assembled. They are tightened into place, and designed to provide a uniform, but somewhat turbulent flow for rapid heat transfer. Raised sections (corrugations) on the plates in the form of knobs, diamonds and channels, help provide the turbulent action. Greater capacity is secured by adding more plates. Ports are provided in appropriate places, both at the top and bottom of the plates, to permit both the product and the heating/cooling medium to flow without mixing.

- **Filter**

Filter units are connected directly to the HTST system, placed after the pre-heater or regenerative (heating) section. These units, using 40-90 nylon mesh cloth are usually cylindrical in shape. Usually two filters are attached; when one is being used, other can be subjected to cleaning. This permits continuous operation.

- **Regeneration**

The raw chilled incoming milk is partially and indirectly heated by the heated outgoing milk (milk-to-milk regeneration). This adds to the economy of the HTST process, as the incoming milk requires less heating by hot water to raise its temperature to pasteurization temperature in the heating section.

- **Heating**

The preheated milk from regeneration section passes through heating section of HTST, where it is heated to 72°C or more with the help of hot water from hot well. Thereafter, the heated milk enters into the holding section (plates/tube).

- **Holding**

The holding tube ensures that the milk is held for a specified time, not less than 15s., at the pasteurization temperature of 72°C or more.

- **Flow-diversion-valve-(FDV)**

This routes the milk after holding section. If the milk is properly pasteurized, it flows forward through the unit. In case the milk is not heated to the set heating temperature, it is

automatically diverted by the FDV back to the Float Controlled Balance Tank (FCBT) for reprocessing. It is usually operated by air pressure working against a strong spring. If the temperature of heated milk falls below set temperature, air pressure is released and the valve snaps shut immediately. When the temperature is regained, air pressure builds up and the valve opens up for the forward flow to occur. The system is so arranged that any failure of electricity moves the valve in the diverted position.

- **Regeneration-(cooling)**

  The pasteurized hot outgoing milk is partially and indirectly cooled by the incoming cold milk (milk-to-milk regeneration). This again adds to the economy of the HTST process. In fact, when precooled (raw) milk is received, regeneration efficiency is 90% and above which obviates cooling using well water altogether.

- **Control-panel**

  Contains instruments, controls, FDV-mechanism and holding system, all centralized in one moisture-proof panel. The lower half of the panel forms an air-insulated chamber which carries the holding tube. Automatic-control-devices These include (a) steam pressure controller, (b) water temperature controller and (c) milk temperature recorder.

- **Steam-pressure-controller**

  Maintains a constant hot water temperature for heating milk accurately to the required pasteurization temperature. It acts as a reducing valve in the steam supply line to give a constant steam pressure.

- **Water-temperature-controller**

  Regulates the amount of steam entering the hot water circulating system.

- **Milk-temperature-record**

  Records the temperature of milk leaving the holding tube/plate. This is an electric contact instrument that operates either a FDV or a milk pump, automatically preventing milk from leaving the holding section at temperatures below the one set in the control panel. Both the frequency and duration of the flow diversion (if at all) and the temperature of milk leaving the heating section are recorded in the thermograph (recording chart) by means of two different colored pens.

- **Hot water**

  Circulates hot water through the heating section of the machine to maintain the correct milk heating temperature within very fine limits.

(Referred by Manual for Dairy Laboratory Department, NDDB Karnala)

❖ **Milk Dispatch**

❖ **Milk Dispatch Machine (1000, 500, 250 ml)**

Packaging is very important from consumer point of view. So, it should be in proper condition. In Yalgud dairy, there are 2 fill pack machines which operate on electronic and pneumatic principles. Milk from silo (1, 2 and 3) is standardized or toned or double toned and then taken to tanks, which are located above the packaging section. The milk at 10 C is taken in milk tank above the packaging machine. Packaging roll is set at the backside of machine by nib roller and date is printed on it.

The packaging material comes out from the front side of machine. firstly sealed vertically by Teflon, collated with electrode rod at temperature 600 C. Then it is sealed horizontally at temperature 900C. Simultaneously, milk enters into the pouch by the pressure of 4-5 kg/cm2.

(Referred by Manual for Dairy Laboratory Department, NDDB Karnala)

Fig. Milk Dispatch Machine

❖ **Quality Control and Assurance**

1. **Acidity:**

10 ml milk

⇩

Add 10 ml Distilled Water

⇩

Add 4-5 drops of phenolphthalein indicator

⇩

Titration with 0.1 N NaOH

⇩

End Point (White to light pink colour)

Fig. Flow chart of Acidity Test

Then acidity is determined by formula as follows,

Acidity = B.R. (Burette Reading) X 0.09

2. **Specific gravity:**

By using lactometer, specific gravity is determined. Specific gravity gives lactose content.

3. **Fat percent:**

Principle –

Fat determination involves addition of concentrated Sulphuric acid which aids in co-aggulation and digestion of milk protein. The phospholipids are separated and the fat rises to the surface on centrifugation. The addition of amyl alcohol which facilitate fat and aqueous phase fat percent is read on graduated scale on the centrifuge tubes at 65^0c

Procedure -

10 ml Gerber sulfuric acid in Butyrometer

⇩

Add 10.75 ml milk (200C)

⇩

Add 1 ml Amyl alcohol

⇩

Centrifuge (for 5 min. at 1100 RPM)

⇩

Reading

Fig. Flow chart Fat Test

Fat content of Cow milk is about 3.5-4.5% & buffalo is about 6.0–10 %

4. Protein test:

Principle-

The normal titration is used for rapid detection of protein in milk. Although protein are weak to be titrated directly with alkali but formalin is used to neutral milk it reacts with amyl group to form methylene amino group and then carbon group is available for titration by multiplying the time value for neutral milk and blank by an imperical factor which depends on the ratio of casein and albumin.

Procedure -

10 ml of milk

⇩

0.4 ml saturated potassium oxalate

⇩

3-4 drops of phenolphthalein indicator

⇩

Scanned with OKEN Scanner

Keep for 3 min

⇩

Titration with 0.1 N NaOH

⇩

End point (light pink colour)

⇩

2ml formalin solution

⇩

Titration with 0.1 N NaOH

⇩

End point (Light pink colour)

⇩

Reading

Fig. Flow chart of Protein Test

Formula:

Protein content= B.R (Burette Reading).X 1.7

5. Methylene Blue Reduction Test (MBR Test):

Principle –

This method depends upon ability of bacteria in milk to grow and consume dissolve oxygen which reduces to the oxidation reduction potential in the medium enzyme which are present in bacteria oxido-reductase it is able to produce oxidation by removal of hydrogen. The rate of discolouration is depend upon the number of bacteria present.

Procedure-

10 ml of milk in sterile test tube

⇩

Add 1 ml MBR (Methylene Blue Reduction) solution

⇩

Rubber cork

⇩

Mix well

⇩

Keep in water bath (at 1000F or 390C)

⇩

Blue colour changes to white

⇩

Record time for changing colour

Fig. Flow chart of Methylene Blue Reduction Test (MBR Test)

6. Alcohol test:

Principle –

Test used for rapid assessment of stability of milk if acidity not developed or milk not co-aggulates it indicate the presence of rennet producing bacteria.

Procedure -

1 ml sample in petri-plate

⇩

1 ml of 68% alcohol

⇩

Clots formed +ve test or if not formed –ve test

Fig. Flow chart of Alcohol Test

7. Phosphate test:

Principle-

Alkaline phosphatase causes hydrolysis of nitro phenyl phosphatase from yellow complex. Whose intensity measure at 405 g/cm^3 of density proportion to concentration of phosphate in sample

Procedure-

1 ml milk sample in test tube

⇩

5 ml phosphatase solution

⇩

Keep in water bath (390C)

⇩

If solution becomes yellow, milk is not pasteurized

Fig. Flow chart of Phosphate Test

8. Adulteration Tests:

i. Sugar test:

Principle:

Resorcinol produces red coloured solution with sucrose in acidic media.

Procedure:

15 ml milk in test tube

⇩

1ml of conc. HCL

⇩

Scanned with OKEN Scanner

0.1 gm of Resorcinol powder

⇩

Mixing

⇩

Water bath for 5 min

⇩

If reddish colour appears after 1 min then it is +ve

ii. Soda test:

5 ml milk

⇩

1 ml distilled spirit

⇩

⇩

2-3 drops Rosalic acid (1%)

⇩

Result

(If pink colour appears then it is positive test)

iii. Starch test:

Principle:

Iodine solution gives intense blue colour with starch due to formation of an unstable complex starch-iodo compound.

3 ml milk

⇩

Warm

⇩

Cool under tap water

⇩

2-3 drops of iodine solution (1%)

⇩

Blue colour appears then it is starch +ve

iv. Salt test:

5 ml of 0.1345 % silver nitrate solution

⇩

Add 2-5 drops of potassium chromate

⇩

Mixing

⇩

Dark brown colour

⇩

Add 1ml milk (If yellow colour appears then it is salt +ve.)

v. Urea test:

Principle:

This procedure detects the presence of urea in milk by an enzymatic reaction. The enzymes, urea liberates ammonia from urea, The released ammonia changes of an indicator bromo-ethynol blue it detects 0.02% of urea present in milk.

Take 5 ml milk in test tube

⇩

Add 20 g soyabean powder

⇩

Add 2 drops of bromothimol blue indicator (0.5%)

⇩

Place this test tube as it is for 10 min

⇩

If blue colour appears after 10 min then it is urea positive

vi. Detergent test:

Principle:

This procedure detects the presence of detergent in milk. The change in PH addition of alkaline detergent in milk. A higher percentage gives a proportionally dark violet colour.

Procedure:

Take 5 ml milk in test tube

⇩

Add 2 drops of bromocerol purple indicator

⇩

If violet colour appears after 10 min then it is detergent +ve

vii. Formalin test:

Procedure:

Take 10 ml milk

⇩

Add 0.5ml ferric chloride solution

⇩

Add 5ml conc.H_2SO_4

⇩

If violet ring appears then it is formalin +ve

(All tests are referred by Quality Plan Yalgud)

❖ **Production:**

❖ **Production Process:**

Yalgud Milk Dairy having production department is well planned and adequately equipped, manufacturing set up where all necessary infrastructure is available. like

- Buffalo and cow milk
- Sumadhur Flavoured milk
- Buttermilk
- Lassi
- Dahi
- Shrikhand
- Amarakhand
- Basundi
- Pedha
- Mango burfi
- Paneer

Dairy Products

Scanned with OKEN Scanner

❖ **Production processes:**

1. **Sumadhur (Flavoured Milk)**

Sumadhur flavoured milk is a delightful beverage that combines the richness of milk with a vanilla flavour. It's a popular choice for those looking to enjoy a refreshing and indulgent drink.

➢ **Specification for Sumadhur –**

Product Description	Organization Specification
Fat %	6.3 %
SNF %	9.4 %
Sugar Content %	9.5 %
Flavour Content %	1.75 %

(By Industry Percentage)

Process : **Sumadhur flavoured Milk**

Reception of milk (40 litres) only Buffalo milk

⇩

Mixing with sugar (3.800kg)

⇩

Pasteurization (72°C)

⇩

Homogenization (P-2000psi,T-40°C)

⇩

Mixing essence (Adding flavour 7ml)

⇩

Cooling (4°C)

⇩

Packaging

⇩

Storage Below 8°C

(Procedures are referred by The Indian Milk Products)

2. Lassi

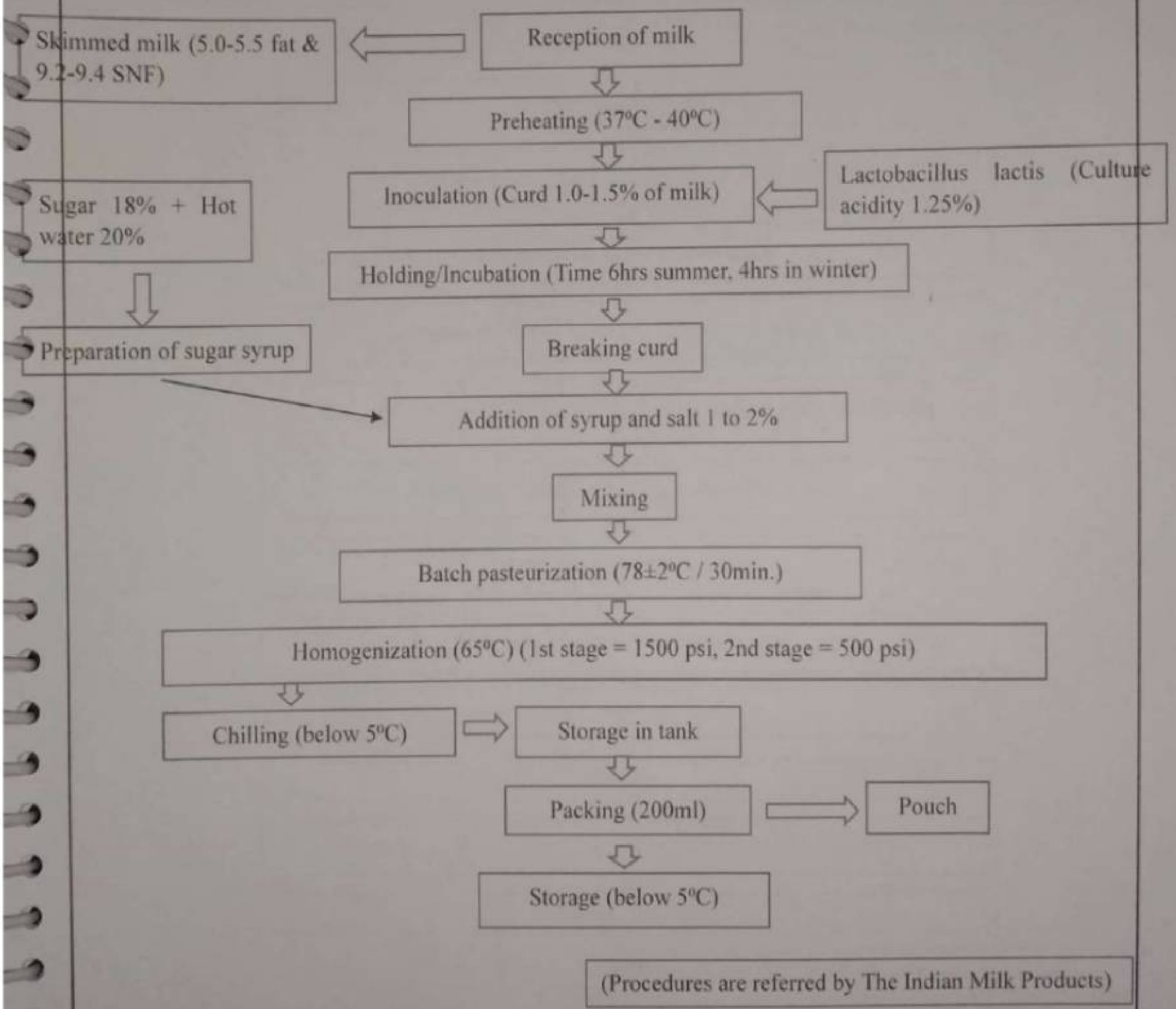
Lassi is popular traditional curd based drink that is originated in India. Lassi is a blend of curd, sugar, water. Yalgud dairy has sets its own standard for Lassi. It is being produced seasonal, as it has more demand in summer season.

➢ Specification of Lassi :

Product description	Organization specification
Fat %	5.5 %
Acidity %	< 0.6 %
Sugar %	18 %
Water %	18 to 20 %

(By Industry Percentage)

Process : **Lassi**



(Procedures are referred by The Indian Milk Products)

3. Dahi:

According to the PFA rules Dahi or curd is the product obtained from pasteurized or boiled milk by souring, natural or otherwise, by a harmless lactic acid or other bacterial culture.

➢ Specification of Dahi:

Product description	Statutory specification	Organization specification
Fat %	Same min. as the milk from it is prepared	4±0.1
SNF %		10±0.1
Acidity %		≤ 1.2
pH		4.4 to 4.8
Texture		Firm & clean cut

(By Industry Percentage)

Receiving of milk

⇩

Standardization (Fat 4.5±0.1%, S.N.F 10.5±0.1%)

⇩

Pasteurization (92±3°C for 6 min.)

⇩

Homogenization (1st stage 1500 psi, 2 nd 500 psi)

⇩

Storage and increase of Temp.of milk in batch pasteurizer (420±1°C)

⇩

Addition of culture (Direct Vat Culture-1% of milk)

⇩

Mix the milk after culture addition

⇩

Storage of milk in inoculation tank

⇩

Filling & weighing of cups

⇩

Sealing

⇩

Store in Incubation room at 42±1°C (for required pH of curd 4.6)

⇩

Storage (00 -4°C)

(Procedures are referred by The Indian Milk Products)

➢ **Packaging of Curd**

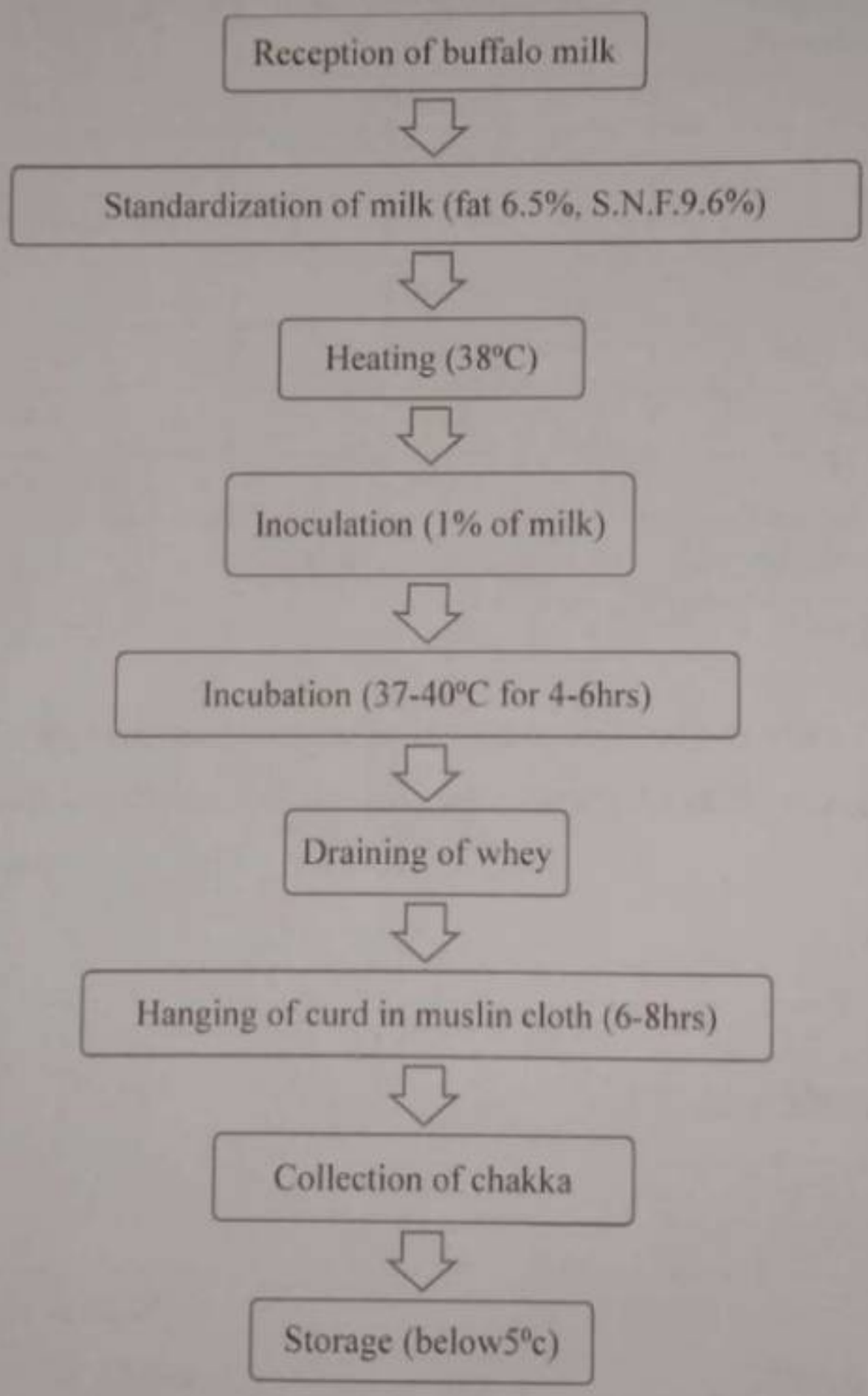
Curd packed in cup by fully automatic machine. The 200ml polypropylene pouch use for packaging of curd. The shelf life of curd is 15 days. When filing of curd in cup temp is 42°C

4. Chakka:

Chakka is the semi-solid curd mass obtained by the removal whey from Dahi (curd) which is the material for making of Shrikhand. Chakka has milky white colour, smooth texture and mild acidic flavour.

Process:

Chakka



(Procedures are referred by The Indian Milk Products)

5. Shrikhand:

Shrikhand is a semi soft sweet dish sour whole milk product prepared from lactic fermented curd by removing whey and using 'chakka' as a basic ingredient.

As per FSSAI shrikhand means the product obtained from chakka or skimmed milk chakka to which milk fat is added. It may contain fruits, nuts, sugar, cardamom, saffron and other spices and blended smooth and homogenous consistency. It shall not contain added any colouring and artificial flavouring substances.

➢ Specification of Shrikhand:

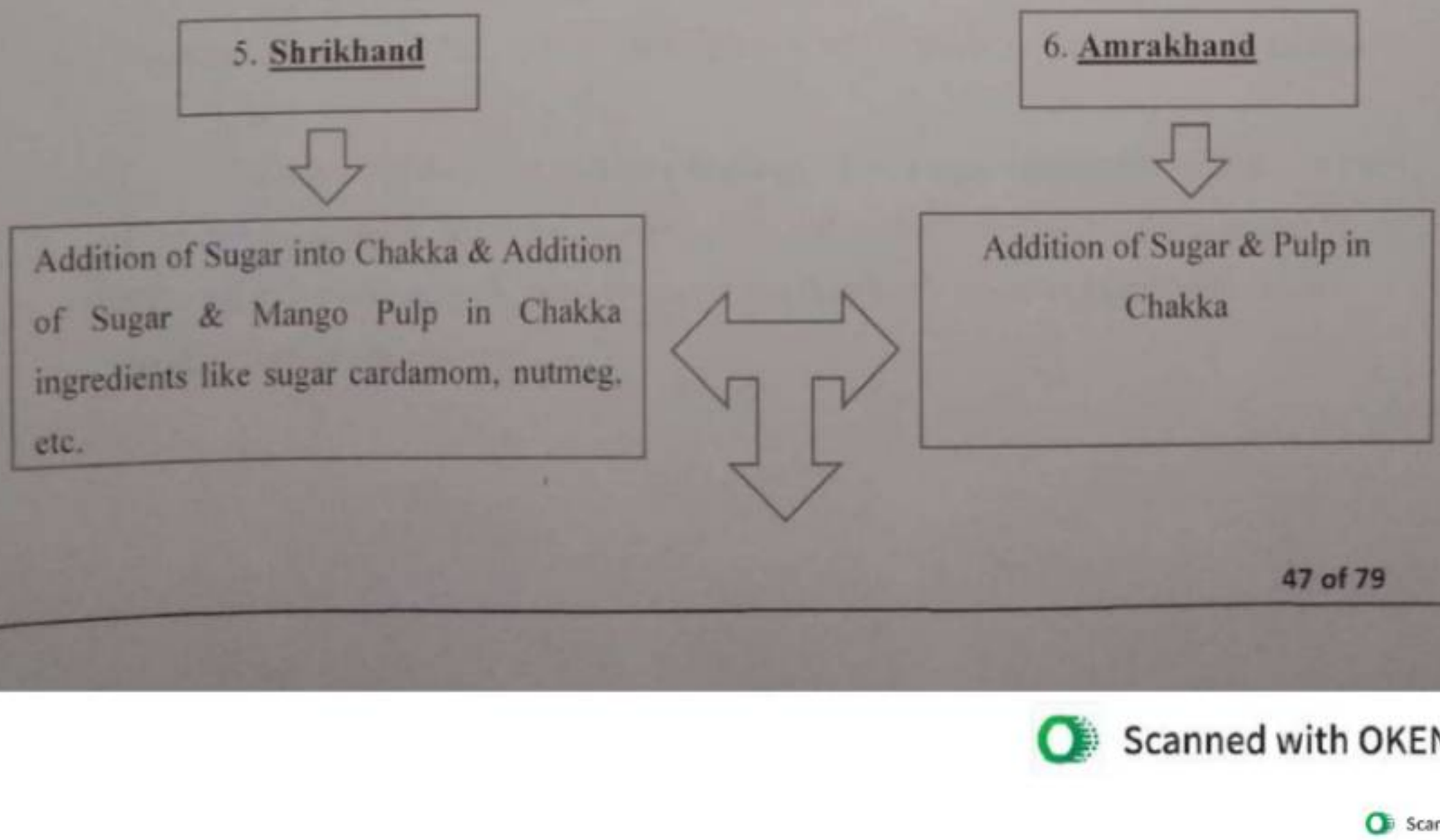
Product Description	Statutory Specification	Organization Specification
Fat % on dry matter basis	Min. 8.5	Min. 8.5
For fruit Shrikhand	Min. 7.0	Min. 7.0
Milk protein % on dry matter basis	Min. 9.0	Min. 9.0
Acidity %	Max. 1.5	Max. 1.4
Moisture %	Max. 42.0	Max. 42.0
Ash % on dry matter basis	<0.9	<0.9
Sucrose % on dry matter basis	<72.5	<72.5

(By Industry Percentage)

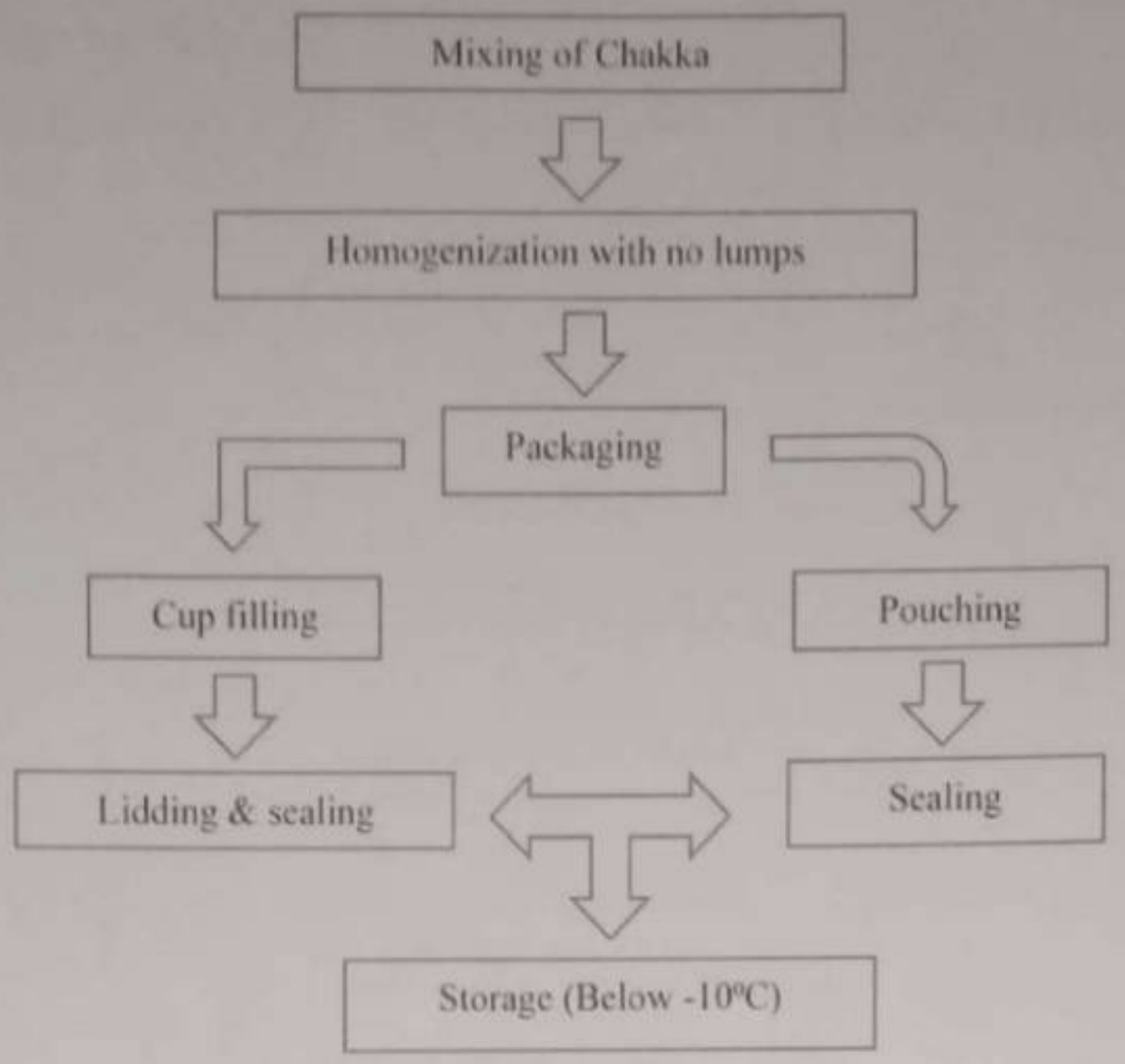
6. Amrakhand:

Same procedure for Amrakhand production only the mango pulp is added (17-22% of chakka) 70% sugar is added in chakka if mango pulp is sweetened. And 80% of sugar is added and sweetened mango pulp.

➢ Process:



Scanned with OKEN Scanner



(Procedures are referred by The Indian Milk Products)

- **Packaging of Shrikhand / Amrakhand:**

Packed in food grade plastic thermos cup covered with same material lead or foil with or without shrikhand wrapped sleeves poly film.

Size of cup or Pouch - 100 gm, 250 gm, 500 gm

7. Basundi:

Basundi is a popular Indian dessert that originated in the western state of Gujarat. It is a rich, creamy, and sweet dish made from milk, sugar, and nuts, typically cardamom and nuts. The name "Basundi" is derived from the Gujarati word "Basundi", which means "condensed milk.

"Traditionally, Basundi is made by heating milk to a high temperature, then cooling it slowly to create a thick, creamy consistency. The milk is then sweetened with sugar and flavoured with cardamom and nuts. The result is a deliciously sweet and satisfying dessert that is perfect for any occasion.

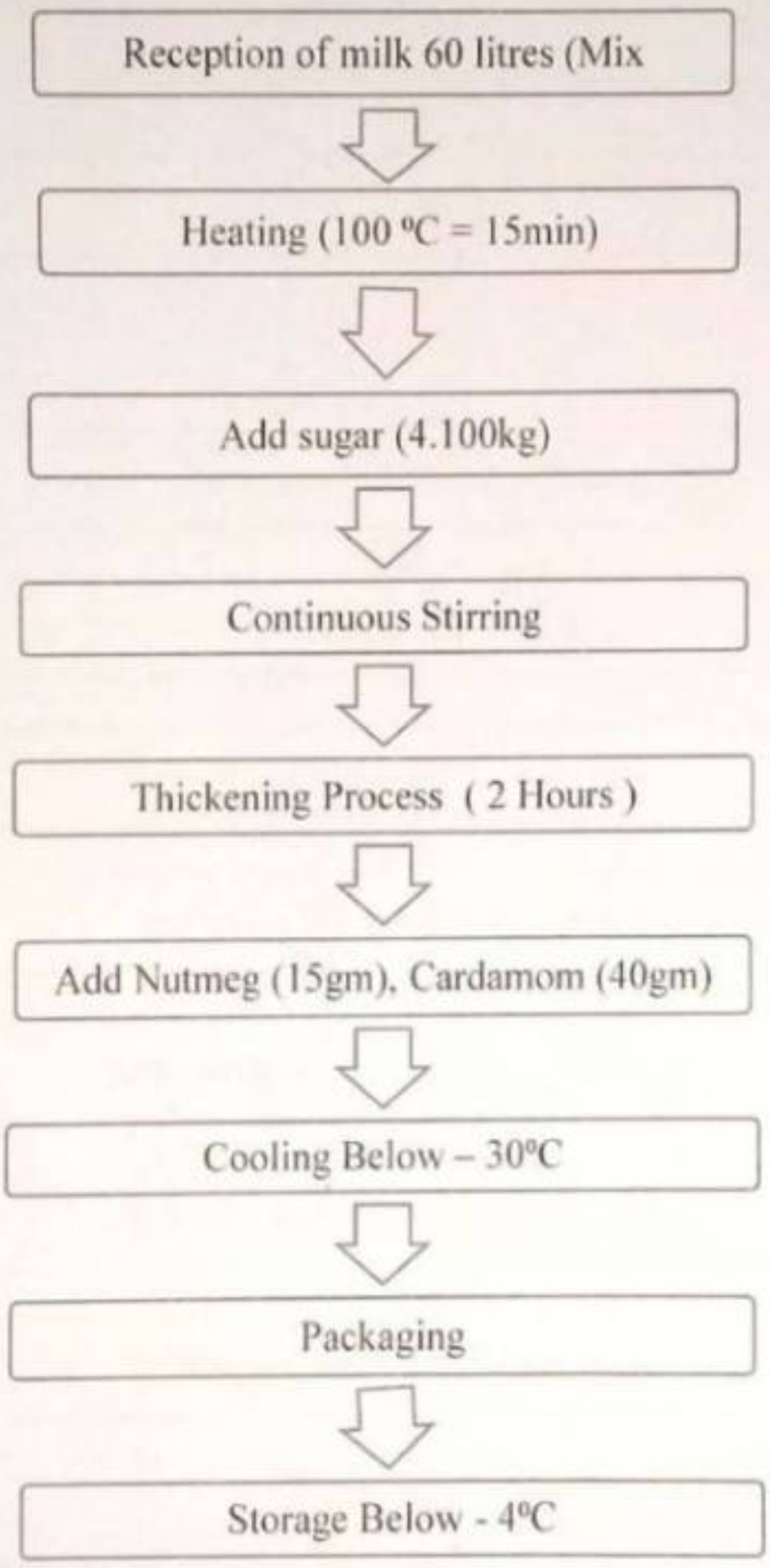
Specification for Basundi:

Product Description	FSSAI Specification	Organization Specification
Fat %	6% - 10%	6% - 10%
Total Solid Content	30% - 35%	30% - 35%
Sugar Content	30% - 40%	30% - 40%
Dry Fruits	Not Specified	5% - 10%

(By Industry Percentage)

Process:

Basundi



(Procedures are referred by The Indian Milk Products)

Packaging of Basundi:

Basundi packed in polyethene pouch. The 250gm polypropylene pouch use for packaging of Basundi. The shelf life of Basundi is 5 days.

8. Pedha:

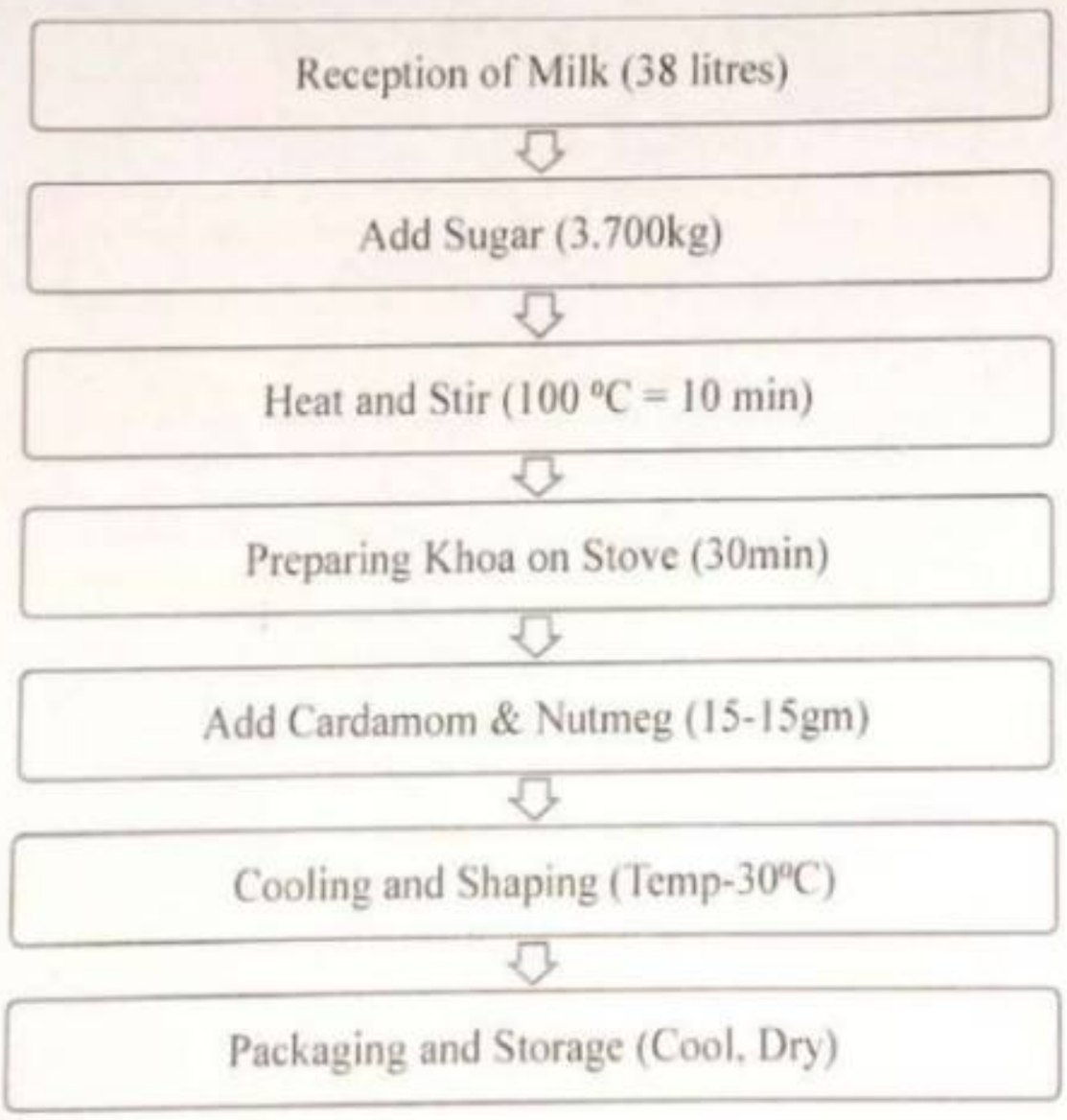
Pedha is a traditional Indian sweet dish. It is a soft, creamy, and sweet confectionery made from milk, sugar, and ghee (clarified butter). Pedha is often served as a prasad (offering) in Hindu temples and is a popular treat during festivals and special occasions.

Specification for Pedha :

Product Description	Organization Specification
Fat %	6.2 %
SNF %	9.3 %
Sugar Content %	8.88 %
Flavour Content	(38 litres = 15gm Cardamom-15gm Nutmeg)

(By Industry Percentage)

Process :



(Procedures are referred by The Indian Milk Products)

➢ Packaging of Pedha:

Yalgud Pedha is packed in a standard plastic packet. Packets of 100 grams are packed in plastic packets. Also 250 gm and 500 gm Pedha is packed in a box. The shelf life of Pedha is 7 days.

Size of packet - 100 grams, 200 grams, **Size of Box** - 500 gram

9. Paneer:

Paneer is a fresh soft cheese which is originated in India and made by curdling milk an acid such as citric acid or a lemon juice.

Paneer is obtained through acid coagulation of casein component of standardized buffalo milk, entrapping through complex physic-chemical interaction.

➢ Specification for Paneer:

Product description	Organization specification
Fat %	Min. 50 on dry matter basis
Moisture %	Max. 55
Acidity %	≤ 0.6

(By Industry Percentage)

Process:

Panner

Reception of milk in a tank

⇩

Standardization of milk

⇩

(Fat%- 5.0-5.5, SNF%- 9.4-9)

⇩

Heating of milk in vat 80°C)

⇩

Addition of citric acid

⇩

solution (2% at 74°C)

⇩

Resting (10 min)

⇩

Draining of whey

⇩

Filling of hoops

⇩

Pressing of paneer

⇩

Pressing of paneer (10-15 min pressure 6000psi)

⇩

Deeping in chilled water

⇩

Storage overnight (temp 2°C)

⇩

Cutting in cubes

⇩

Packing (Vacuum packing)

⇩

Storage (deep freeze -18°C)

(Procedures are referred by The Indian Milk Products)

Packaging of Paneer:

Vacuumed packaging in polyethylene bags of 100gm, 200gm, and 500 gm. Vacuum pressure is -29 Hg for 20 sec. in auto sealer is done. Store of pack below- 18°C. The shelf life of paneer is 3 months. The manufacturing date, expiry date, batch number etc. is mentioned on package.

(All dairy products packaging is referred by FSSAI)

Bakery section

Raw Materials of Bakery

- Refined wheat flour (Maida)
- Sugar
- Tutti fruity
- Carlon (Pan release oil)
- Salt
- Jeera cumin seeds
- Jam
- Custard powder
- Edible oil (palm & sunflower)
- Rava / suji
- Besan
- Vanaspati ghee
- Calcium propionate
- Vanilla powder
- Mixed fruit flavouring agent
- Synthetic food liquid colour
- Coconut oil essence (artificial flavouring agent)
- Fresh yeast
- Margarine
- Bakery shortening

Raw Material Tests

Refined Wheat flour (Maida)

Colour, Texture, Odour, Taste

Water absorption power (WAP)-Above 60

Moisture (2times)-Max 14%

Gluten- Above 10

Sediment value - 22-25

Total ash - max 1%

Ash insoluble - Max 0.12%

Alcoholic acidity

Cardamom

Extranous matter

Empty & Malformed capsules by count

Immature and shriveld capsule

Insect damage method

Moisture

Total ash

Colour

Sugar

Colour, Taste, Texture, Odour

Moisture- 0.02-0.05%

Sucrose percentage

Extranous Matter

Tutti fruity

Colour, Taste, Texture, odour

Moisture – 43.8%

Sugar- 52%

pH – 4.81%

Calcium Propionate

Colour, texture, odour

Water insoluble

Purity

Yeast

Colour, texture, odour

Dough rising capacity

pH, moisture

Dispensibility in water

Palmolein oil

Colour, texture, odour

Moisture-Max 0.1%

Saponification Value- 195-205

Iodine Value – 54-62

Unsaponificable Value – 1.2

Trans fat

Acid value

Trans fat – 5%

Shortening

Colour, texture, odour

Moisture

Free fatty acid

Argemone oil test

Unsaponifiable matter Aregemone oil

Vanaspati Ghee

Colour,texture, odour

Moisture%

Ash%

Ash insoluble

Alcoholic acidity

Sediment value

Free fatty acidity

Melting point

Argemone oil tests

Refractive index

Trans fat

Margarine

Colour, texture, taste

Moisture-14.94%

Fat, NaCl

Unsaponifiable matter

Argemone oil test

Melting point

Raw milk for bakery products

Colour, taste, odour

Fat

SNF

Alcoholic acidity

pH

Cashew nuts

Colour, taste, texture, odour

Moisture

Acidity of extracted fat (mx-1.5%)

(All tests are referred by The Food Safety And Standards Act, 2006)

❖ Bakery Products List

➢ <u>BREADS & BUNS</u>

- Milk fruit bread
- Bun pav
- Bhaji pav
- Long bun
- Doughnut

➢ <u>RUSK</u>

- Pav butter round rusk
- Milk rusk
- Elaichi rusk
- Vanilla rusk
- Fruit rusk
- Suji rusk

➢ <u>TWISTED KHARI</u>

- Cream Roll

➢ <u>SOANPAPDI</u>

- Elaichi Soan Papdi
- Orange Soan Papdi
- Mango Soan Papdi
- Chocolate Soan Papdi
- Coconut Soan Papdi

Processing of bakery products

Bread:

Ingredients:

Milk fruit bread - Maida, Milk, Yeast, Sugar, Calcium powder.

Sandwich bread - Maida, yeast, sugar, calcium powder. (By Production Personnel)

Procedure:

Mix all ingredients for 14 min

⇩

Make a dough

⇩

Dough lifting into machine

⇩

Each dough cut 235g to 240g

⇩

Add into mould on carol liquid spray

⇩

First proving 15 min.

⇩

Final proving 1hrs 10 min at Temp28°C to29°C, Humidity 98% Pass

⇩

Through heating chamber for 204°C at 10 min.

⇩

The bread cooled on tray

⇩

Passes for slicing machine

⇩

Further goes to packaging

Khari:

Ingredients: Vanaspati ghee, Maida, Sugar, Salt, Cold water (7°C). (By Production Personnel)

Procedure:

Mix all ingredients in spiral mixture

⇩

Dough is ready for further process

⇩

Dough pressed by the press machine

⇩

Pressed dough passed to Khari dough sheeter

⇩

Vanaspati ghee applied to the dough

⇩

The dough sheets are folded to 5 fold

⇩

Again dough pressed with the help of press machine

⇩

Pressed dough passed to khari dough sheeter

⇩

The dough sheets are folded to 2 fold twisted

⇩

Again dough sheet pass to the press machine then dough sheeter shape proper
Cutting of the dough in sugar dough

⇩

Water spray to the dough

⇩

Baking 2nd

⇩

Baking Cooling and packaging

BUTTER:

INGREDIENTS: Maida, Jeera, Vanaspati ghee, Sugar, Coriander seeds, Water and Yeast

(By Production Personnel)

Procedure:

Mix all ingredients in spiral mixer

⇩

Rest for one hour

⇩

Dough is placed in white plate to use dough divider.

⇩

Small 140 balls are prepared of the dough of 15 gm which are placed in tray.

⇩

Proving: 1 and half hour

⇩

Baking

⇩

First baking: 240°C for 10 minutes.

⇩

Second baking: 180°C for 45 minutes (for hard texture)

⇩

Cooling and packaging

Scanned with OKEN Scanner

TOAST

Flavour: Elaichi, Vanilla powder

Ingredients: Maida, iodized salt, sugar, edible vegetable oil (Palmolejn and sunflower), flour improver, water, milk, edible vegetable fat. (By Production Personnel)

Procedure:

Selection and weighing of ingredients

⇩

Mixing of ingredients & water.

⇩

Dough dividing

⇩

Rounding of dough

⇩

Moulding in Mould and leading

⇩

Proofing (+37°C 30min.)

⇩

First baking (270°C for 15 min.)

⇩

Cooling (8 to 10 hours R.T.)

⇩

cutting / slicing

⇩

Second baking (185°C for 30 min.)

⇩

Cooling (RT)

⇩

Packing & then storage & dispatch

Doughnut

Ingredients: Maida, yeast, sugar, calcium powder, Vanaspati ghee, water.

(By Production Personnel)

Procedure:

Mix all ingredients

⇩

Make dough

⇩

Size of one donut 3.2g

⇩

Donut passing through the proving chamber for at 37°C for 1hrs, humidity 68%

⇩

Baking at 260°C for 8 min.

⇩

Cooling room temperature

⇩

Deep frying in oil (170°C) and add cream

⇩

Packaging

BUN PAV:

Bun pav or ladipav is palm size small round bread loaf.

Ingredients: Maida, sugar, Baker's yeast, milk, iodized salt, flour, improver, emulsifier, permitted preservatives, edible vegetable oil (palmolejn), edible vegetable fat, tuti fruit, water. (By Production Personnel)

Procedure:

Selection of ingredients

⇩

Mixing all ingredients & water

⇩

Dough dividing

⇩

Arrangement on tray

⇩

Proofing (+37°C for 30 min.)

⇩

Baking (240°C for 10-12 min)

⇩

Cooling (R.T.)

⇩

Packing

⇩

Dispatch

CREAM ROLL

Ingredients: Refined wheat flour, sugar, salt, gluten, margarine & water.

(By Production Personnel)

Processing flow-sheet for mfg. of cream-roll:

Raw materials

⇩

Weighing

⇩

Mixing (except margarine) and kneading (mixing time-10 min.)

⇩

Cutting and Molding (insertion of Mold)

⇩

1st baking (temp 250°C, time-15 min.)

⇩

Cooling

⇩

Loosening of mold

⇩

2nd Baking (temp 180°C, time-60 min)

⇩

Cooling

⇩

Removal of Mold

⇩

Packaging and storage

Scanned with OKEN Scanner

SOAN PAPDI

Ingredients: sugar, maida, besan, flavour, cardamom powder, dry fruits, oil.

(By Production Personnel)

Procedure:

Selection of ingredients

⇩

Mix maida besan in boiled oil (oil temp. 40°C)

⇩

Preparation of sugar syrup

⇩

Grease the oil pan on plate

⇩

Pour sugar syrup

⇩

Slightly thread the sugar syrup

⇩

Mix the mixture in a sugar syrup

⇩

Spread the pieces of nuts on a tray & level it

⇩

Cutting into required shape

⇩

Weighing

⇩

Packaging in box & cover the box by packaging bag store & dispatch

(All Bakery Products procedure Referred by Indian Baking Technology and Quality plan Yalgud)

Temperature and Time

Product	Temperature	Time
Bread	206	61 sec
Bhaji Pav	240	10-12 sec
Khari	First Baking: 300°C Second Baking: 180°C	12 min 35 min
Toast	First Baking: 270°C Second Baking: 180°C	15 min 20 min
Butter	First Baking: 240°C Second Baking: 150°C	40 min 45 min

(By company percentage)

Equipements:

For running every food industry, mechanical /or semi-automatic equipment's are essential in order to manufacture safe, hygienic food products with consistent quality. Here, both dairy and bakery sections are fully equipped with the required equipment's for the production of dairy as well as bakery products.

In Bakery Section:

- At raw material storage

1. Flour sifter (2no.s)
2. Weighing balance

- At processing area:

3. Sealing machine (6no.s)
4. Conveyor type bread slicer (5)
5. Bakig oven (6no.s)
6. Proofing chamber (3no.s)
7. Divider and molder (2no.s)
8. Primary proofer
9. Long molder
10. Spiral mixer (7no.s)
11. Dough presser
12. Dough sheeter
13. Butter divider (2no.s)
14. Bun rounder
15. Toast packing machines (2no.s)
16. Bun fryer
17. Butter filling machine

Flour Shifter

Working Principle

1 Flour Loading: Flour is loaded into sifting camber
2 Sifting action: The agitator or beater breaks up clumps, and the flour passes through the screen or mesh.
3 Separation: Larger ingredients or contaminants are separated from the flour.
4 Discharge: Sifting is discharged from the machine.

Dough Mixer

Working Principle

1. Ingredient Loading: Dough ingredients (flour, yeast, etc.) are loaded into the mixing bowl.
2. Mixing Action: The agitator or blade rotates, mixing ankneading the dough.
3. Kneading: the agitator or blade folds and stretches the dough, developing gluten.
4. Discharge: Mixed and kneaded dough is discharged from the machine.

Dough Divider

Working Principle

1. Dough Loading: Dough is loaded into the hopper.
2. Division: The divider cut the dough into equal pieces.
3. Rounding: The rounder shapes the dough pieces into balls or cylinders.
4. Discharge: Rounded dough pieces are discharged from the machine.

Dough Sheeter

Working Principle

1. Dough Loading: dough is loaded into dough feed.
2. Sheeting: The rollers flatten and sheet the dough to the desired thickness.
3. Thickness Adjustment: The adjustable gap controls the dough thickness.
4. Sheeted Dough: The sheeted dough is discharged from the machine.

Proofer

Working Principle

1. Temperature control: The proofer maintains a constant temperature (usually between 75°F to 90°F) to facilitate yeast fermentation.
2. Humidity Control: The proofer maintains a constant humidity level (usually between 70% to 90%) to prevent drying out of the dough
3. Air circulation: the proofer circulates air gently distribute heat and humidity evenly.
4. Dough Resting: The dough is placed in the proofer to rest and undergo fermentation, allowing the yeast to produce carbon dioxide and cause the dough to rise.

Packaging Machine

Working Principle

1. Product Loading Product is loaded into the machine
2. Packaging material Dispensing: packaging material is dispensed and formed around the product.
3. Sealing or closing: the package is sealed or closed using heat, pressure or other methods.
4. Package ejection: The packaged product is ejected from the machine

(The Science of Bakery Products by W. P. Edwards)

Maintenance department

Since there is equipment, there is its maintenance. Maintenance decides the working capacity, efficiency and life cycle of equipment's. Therefore, periodic maintenance is essential for every equipment installed. The society has a separate maintenance department that mainly works on the maintaining, repairing and replacing of equipment's and / or its parts, etc. if necessary. Periodic maintenance is done of each and every equipment for its maximum possible efficiency. Any problem that may arise in equipment is settled down as soon as possible either by repairing or replacing the equipment and /or its part that is malfunctioned. Or else, any other required troubleshooting action needed is taken as per the directions of the corresponding person. (Referred by FSSAI Standards)

Scanned with OKEN Scanner

BAKERY PRODUCTS

Sahakar Bakery Products

Quality Control

Quality control plays a crucial role in ensuring the quality and safety of products in various industries, including the dairy and bakery sectors. Here are some key roles of quality control:

- Prevention of defects

1. Detection of defects: Identify defects or irregularities in raw materials, production processes, or finished products.
2. Prevention of contamination: Prevent contamination of products by implementing proper sanitation, hygiene, and handling practices.

- Ensuring Compliance

1. Regulatory compliance: Ensure compliance with relevant laws regulations, and industry standards.
2. Standard operating procedure (SOPs): Develop, implement, and maintain SOPs to ensure consistency and quality in production processes.

- Maintaining Quality Standards

1. Quality inspections: Conduct regular inspections to ensure products meet quality and safety standards.
2. Testing and analysis: Conduct testing and analysis of raw materials, production processes, and finished products to ensure quality and safety.
3. Certification and auditing: Obtain certifications (e.g., ISO 9001, HACCP) and undergo regular audits to ensure quality management systems are effective.

- Continuous Improvement:

1. Identifying areas for improvement: Identify areas for improvement in production processes, quality control measures, and quality management systems.
2. Implementing corrective actions: Implement corrective actions to address defects, irregularities, or areas for improvement.
3. Training and development: Provide training and development opportunities for quality control personnel to enhance their skills and knowledge.

Benefits of Quality Control

1. Improved product quality: Ensures products meet quality and safety standards.
2. Increased customer satisfaction: Enhances customer trust and loyalty.
3. Reduced costs: Minimizes waste, rework, and recall costs.
4. Enhanced reputation: Maintains a positive reputation and brand image.
5. Compliance with regulations: Ensures compliance with relevant laws and regulations.

(Referred by The Food Safety and Standards Act, 2006)

Quality Parameter Finished Product

Product	PARAMETER			
	Moisture	Total Solid	pH	Alcoholic acidity
Milk Bread	Max 40.0	Min 60.0	5.3 - 6.0	Shall not be more than equivalent of 7.5 ml. N NaOH/ 100gm of dried sample.
Sandwich Bread	Max 40.0	Min 60.0	5.3	Shall not be more than equivalent of 7.5 ml. N NaOH/ 100gm of dried sample.
Bunpav	Max 40.0	Min 60.0	5.3 - 6.0	Shall not be more than equivalent of 7.5 ml. N NaOH/ 100gm of dried sample.
Round Rusk	Max 5.0	Min 95.0		Shall not be more than equivalent of 7.5 ml. N NaOH/ 100gm of dried sample.
Khari	Max 5.0	Min 95.0		

(By company percentage)

Scanned with OKEN Scanner

Effluent Treatment Plant (ETP)

Effluent treatment is the process of removing pollutants and contaminants from waste water, also known as effluent, generated by industrial, commercial, or domestic activities.

Production Process & Pollution Abetment

Milk is the basic raw material of the milk industries. The manufacturing process of milk products includes following stages pasteurization, fermentation, heat & acid coagulation treatments.

The water needed for each litre of milk processing handling is 3litre by plant.

A) Pasteurization:

After pasteurization, to for cleaning of pasteurizer needs water, acid, alkali. The pollutants left by it are Nitric acid, Caustic soda, washing compounds.

Also, the storage tanks & utensils are washed & sterilized by above chemicals & steam. During Pasteurization & all other handling processes, some quantity of milk is lost so lactic acid is one of the main pollutants.

B) Fermentation:

From milk curd is prepared. From this curd used producing Chakka, Shrikhand, Amrakhand, etc. are prepared. During curd handling & other product manufacturing Fat & Lactic acid is lost in this operation & get mixed in waste water. Also washing of utensils of this process includes wastage.

C) Heat Acid Coagulation:

Milk is heated & acidified by citric acid & coagulated mass is pressed & Paneer is produced. In this process waste is treated in ETP plant as follows.

ETP Plant Process

1) Oil & Grease Trapping Tank:

Separates heavy materials & Lighter Material (Oil & Grease). Fatty Material is removed & sends to Drying Bed. Heavy material with Water is send to equalization tank.

2) Equalization Tank:

In this tank fan helps to mix heavy material uniformly, this uniformly mixed water is sent to chemical reaction tank.

3) Chemical Reaction Tank:

In this tank various chemical treatment is done on water in this tank fan helps to mix waste water& chemicals. The parameters like pH, acidity, alkalinity are checked.

From these parameters dosing strength of chemicals Lime, Alum & Polyelectrolyte is concerned. This water is sent to aeration tank.

Scanned with OKEN Scanner

4) Aeration Tank:

In this tank water are oxidized so anaerobic bacteria getting killed. Also, bacterial culture from cattle dung helps in degrading of impure water to pure water. Then it is sent to secondary clarifier tank

5) Secondary Clarifier Tank:

In this tank water Is store & cattle dung (Culture) helps in degradation of organic matter of waste water. Also, removal of sludge takes place in this tank. Then this water is sent to storage tank.

6) Storage Tank:

In this tank water is stored & potassium per magnet is added as disinfectant so it becomes pure, then it is sent to filter.

7) Filter: Filter contains fine, medium, cores, sand & activated charcoal so it purifies water. This purifies water used for agricultural purpose

Method of analysis

Collection & samples:

In presents study the samples were collected from secondary treatment plant. The samples from secondary treatment plant were analysed for colour, pH, temperature, moisture,

Chemical oxygen demand (COD), biological oxygen demand (BOD), total solids, total dissolved solids, total suspended. The samples were collected in clean plastic jars of are litre volume size.

Physical Parameter

1.Colour

The colour to the waste water was not only due to substances but also due to the turbidity.

The qualitative estimation of colour is done in this regard. the colour of waste water is determined directly with necked eye.

2. Temperature

This is very important factor that effects on the chemical and biological changes in the water. The temperature of water is measured with mercury thermometer of range -10-100°C with 1°C least count. The sample was taken in plastic jars and thermometer was dipped into it and temperature was noted.

3.pH

The pH is measured with the help of hydrogen ion sensitive electrode.

4.Total Solid

Total solids were determined as residue left after evaporation of unfiltered sample

5.Total dissolved solids

Total dissolved solids were determined as a residue left after evaporation of the filtered sample.

6.Total Suspended Solids (TSS)

The suspended solids were estimated by taking the difference between total solids and total dissolved solids.

Chemical Parameters

1.Chemical Oxygen Demand (COD):

Oxidation of sample is carried out with an excess of potassium dichromate (K2Cr2O7) and concentrated sulphuric acid (H2S04) in the presence of mercurics ulphate (HgS04) and silver sulphate (AgSo4) as chemical catalyst and heat as physical catalyst. Sample is refluxed with known amount of K2Cr2O7 and H2SO4 Part of dichromate is utilized for oxidation of organic matter (FAS). The amount of oxidisable matter is measured as oxygen equivalent and is proportional to potassium dichromate consumed.

2.Biologicl Oxygen Demand (BOD):

BOD is the oxygen utilized by microorganism in stabilizing the organic matter on an average basis. The demand for oxygen is proportional to the amount organic waste to be degraded aerobically. The principles involve is the measuring the difference of oxygen concentration between the sample & after incubating the sample in BOD for 5 days at 20° C.

(Referred by Guide Manual: Water and Waste Water Analysis)

MEDIA PREPARATION

(Referred by Yalgud Quality Plan)

Violet Red Bile Agar

Is used for coliforms.

Composition

Peptone - source of protein

Yeast Extract - source of vitamins

Sodium Chloride - Maintains osmotic pressure.

Bile salts mixture - Supports the growth of coliforms and restrict the growth of other micro-organisms.

Lactose - source of carbohydrates.

Violet Red - act as indicator.

Agar - solidifying Agent.

Fig. Violet Red Bile Agar (VRBA)

Plate count media

Plate count media is used for all types of bacteria. Agar used here is Total Plate Count Agar.

Composition

Yeast Extract - source of vitamins

Glucose - source of carbohydrates

Agar - solidifying agent

Fig. Plate count Agar (PCA)

Scanned with OKEN Scanner

Potato Dextrose Agar

Potato dextrose agar is used for fungi, including molds and yeasts

Composition

Potato extract - Source of carbohydrates, proteins

Dextrose - Source of Carbon

Agar - Solidifying agent

Water - Serves as solvent

Fig. Potato Dextrose Agar (PDA)

Conclusion

So, now I reach to the end of our project report Overall, the whole internship and project Feels pretty successful, although we have faced some challenges and problems while completing the final report. In the end I glad to tell you that training in HANUMAN DAIRY AND SAHAKAR BEKARY was an excellent and fabulous experience. In the end I glad to tell you that Training in HANUMAN DAIRY AND SAHAKAR BAKERY, YALGUD was an excellent and fabulous experience.

During the training I actually learned about the industry and above It working the theoretical knowledge is worth for getting a degree, and it is accessible in the Book. During the training we actually learned about the industry and above it working the Theoretical knowledge is worth for getting a degree, and it is accessible in the book. I Only imagine about the thing we read, but practical life is always different and excellent one. During My training period, I seen the various instruments, chemicals and apparatus in the Quality control lab and industry. During our training period, we had seen the various Instruments, chemicals and apparatus in the quality control lab and industry. The highly Sophisticated instruments that work precisely must be operated with intense care for optimum use.

I could acquire a lot of information regarding the latest instruments and their working procedures. It was definitely very exciting and marvelous while gaining the knowledge and analysing the Whole information of the industry. The overall experience of internship was great and Fantastic.

We tried our best to include all necessary points in this report. We have put in our Efforts to make the report and project. Last but not least, we are heartily thankful for whole HANUMAN DAIRY AND SAHAKAR BAKERY, YALGUD team Q.C. and workers team for supporting us, guiding us, motivating us and to give golden opportunity to us for doing the internship in HANUMAN DAIRY AND SAHAKAR BAKERY, YALGUD.

References

Books:

- The Indian Milk Products
- Manual for dairy laboratory Department, NDDB Karnala
- Methods of analysis of food
- The Legal Metrology Act, 2009
- The Food Safety and Standards Act, 2006
- Guide Manual: Water and Waste water analysis
- The science of Bakery Products by W. P. Edwards
- Indian Baking technology
- Quality Plan Yalgud