International Journal of Microbial Science, ISSN (online) 2582-967X, Volume 5, Issue 1, February 2024, pp.22-26
Available online at https://internationaljournalofmicrobialscience.com/

Scientific Survey

Survey on Milk Preservation in Village Udachiwadi, Purandar Taluka, District Pune, Maharashtra, India

[1]Koli P, [2]Kolte V, [3]Daundkar P, [4]Sutar T, [5]Dhawale K, [6]Shinde S, [7]Suryavanshi S, [8]Borkar S, [9]Mahadik S, [10]Chaudhari K, [11]Ughade V, [12]Raut S, [13]Tilekar V, [14]Vedpathak S, [15]Mulik S
[1-15]Department of Microbiology, Jayawantrao Sawant Commerce and Science College, Hadapsar, Pune, Maharashtra, India.

Survey Info

Article history:
Received: January 1, 2024
Accepted: January 31, 2024
Published: February 4, 2024

Corresponding Author: Pratiksha Koli
Email: pkoli3805@gmail.com

1. Background:

In particular, when fast analytical processing is not practical, milk preservation and freezing are employed as tactics to inhibit microbial development and avoid milk degradation. Using mid-infrared spectroscopy to estimate the gross chemical composition of milk, researchers have mostly examined the effects of freezing processes and the addition of preservative [1]. For many years, liquid milk has been a vital source of nutrients for humans. However, the illicit use of adulterants and preservatives such melamine, hydrogen peroxide, salicylic acid, benzoic acid, water, neutralizers, and others has long raised questions about the safety of milk. These two kinds of additives are now frequently added to milk in order to meet the needs of overpopulous nations. It appears to be challenging for the dairy sector to operate its plants without the use of adulterants and/or preservatives these days, particularly in India. They not only have the potential to be harmful to human health, but they also damage a nation's economic . This threat is further encouraged by the public health authorities' and other law enforcement agencies' tardiness in taking action against the dishonest traders as well as the absence of quick and easy ways to identify adulteration [2].

The proposed survey has been undertaken to address the problem under question and find its probable solution. A survey gives overall idea on the daily basis of farmers regarding milk production, preservation and the way they handle losses and profits in the village, Udachiwadi, taluka Purandar, District Pune, Maharashtra (figure 1).

2. Questionnaire:

1. What is name and age of a person?
2. How many milking animals they have?
3. How many years they own the animals?
4. Which efforts do they take to preserve the milk?
5. Which are reasons of milk spoilage? What did they do with spoiled milk?

Figure 1: Location of Udachiwadi, Taluka Purandar, District Pune, Maharashtra state of India.
(https://www.google.com/maps/place/Udachiwadi,+Maharashtra+412303/@18.3851299,74.082685,14z/data=!3m1!4b1!4m6!3m5!1s0x3bc2e44bd4d4cccf:0x3844fe6de2f82d85!8m2!3d18.3822657!4d74.0828839!16s%2Fg%2F12hnf901w?entry=ttu)

3. Methods Used:

Questionnaire method was implemented by directly visiting the dairy owners and respective farmers. The questions were so normal and framed in such a way that basic information could be collected and the respondents could be felt comfortable. Each of them responded comfortably and co-operatively to the questionnaire.

4. Result:

The 37 Dairy owners were investigated (table 1). Of them, 36 provided answers of all questions, 1 owner was not ready to provide any answer.

5. Conclusion:

The milk and its preservation are necessary in the country like India because of both population and climate. By preserving milk, dairy industries or farmers owning cattle can ensure safety and quality of milk which results in preventing spoilage extending shelf life of milk. Both small scale and large scale dairy businesses have expectations from researchers to make new and effective ways of preservation of milk and their products. Hence, the presented survey helps future researchers to work on maintaining the dairy businesses.

Authors' Contributions:

PK, VK, PD, TS, KD, SS, SS, SB, KC, VU, SR, VT, SV, SM: Developed an idea, worked on field, collected the data, wrote and Verified the manuscript.

Competing Interest: Authors declare that no competing interest exists among them.

Ethical Statement: The presented work is a survey, hence no ethical permission required.

Grant Support Details: This work was not funded by any agency.

References:

1. Vigolo V, Niero G, Penasa M, De Marchi M. Effects of preservative, storage time, and temperature of analysis on detailed milk protein composition determined by reversed-phase high-performance liquid chromatography. J Dairy Sci. 2022;105(10):7917-25. doi: 10.3168/jds.2022-22069, PMID 36055834.
2. Singh P, Gandhi N. Milk preservatives and adulterants: processing, regulatory and safety issues. Food Rev Int. 2015;31(3):236-61. doi: 10.1080/87559129.2014.994818.

Cite this article as:

Koli P, Kolte V, Daundkar P, Sutar T, Dhawale K, Shinde S, Suryavanshi S, Borkar S, Mahadik S, Chaudhary K, Ughade V, Raut S, Tilekar V, Vedpathak S, Mulik S. Int. J. Micro. Sci. 2024; 5(1), 22-26.

Appendix

Sr. no.	Name of Person (renamed as farmer 1, farmer 2---- to protect identify), age	Question 1 How many milking animals they have	Question 2 From how many years the person owns a particular animal	Question 3 Which efforts they take to preserve the milk	Question 4 Reasons of milk Spoilage and loss they faced	Question 5 What do they do with spoiled milk
1	Farmer 1 Age-36	1 (gives 2 liter milk daily)	12 Years	Freezing	Heat, rise in temperature	To make milk products such as Paneer
2	Farmer 2, Age- 42	4	12 years	Freezing	Not Answered	Not Answered
3	Farmer 3, Age-39	3	4 Years	Keeping in Open Air	Not answered	Not Answered
4	Farmer 4, Age -35	3 (gives 20 liters of milk Daily)	12	Freezing	Heat, Financial loss	Not answered
5	Farmer 5, Age-40	2 (gives 10 liters per day)	12	Freezing	Temperature, heat Loss- Financial	Not answered
6	Farmer 6, Age-42	3 (gives 10-15 liters per day)	10	Freezing, Keeping in open air	Rise in temperature	Milk products- curd, paneer
7	Farmer 7 Age- 38	2 (Gives 20 liters per day)	18	Use of refrigerator	Raise in temperature	Use in milk products or throw away

8	Farmer 8 Age-35	3 (gives 20 liters/day)	2	Freezing	Heat	Milk Products
9	Farmer 9 Age- 35	3	2	Freezing, in open air	Temperature	Throw away or in making milk products
10	Farmer 10 Age- 38	2	18	Using Refrigerator	Heat	In making Khawa, mawa
11	Farmer 11 Age- 38	2	18	Freezing	Temperature	
12	Farmer 12 Age -72	7 Cows	12	Pasteurization by heating at 70 degrees for 15-30 seconds and quickly cool down	Overgrowth of Microorganisms	Use in cooking rice from sour milk
13	Farmer 13 Age-59	5 Cows, 2 Buffalos	23	Not Answered	Bacteria Producing acids	Throw out
14	Farmer 14 Age-68	4 Cows	15	Not Answered	Microorganisms	Better to throw
15	Farmer 15 Age -45	5	25	Pasteurization	Overgrowth of Bacteria	Cooking sour rice
16	Farmer 16 Age-65	7	50	Methods of increasing shelf life	Microorganism overgrowth	Throw out
17	Farmer 17 Age-70	15	20	Pasteurization, heating	Microbial actions	Cooking sour rice
18	Farmer 18 Age-65	9	10	Freezing, keeping in air tight container	Humidity, bacterial growth	Paneer, curd, cheese making

19	Farmer 19 Age-50	7	5	Maintaining Nutritional properties	Bacterial overgrowth	Throw away
20	Farmer 20 Age- 45	5	5	Pasteurization, heating	Bacterial overgrowth	Cooking Purposes
21	Farmer 21 Age-70	5	15	Perseveration in air tight container and freezing for months	Heat, humidity	Paneer making
22	Farmer 22 Age-60	7	45	Not Answered	Bacterial overgrowth	Throw away
23	Farmer 23, age-41	5	1	Not Answered	Not Answered	No use
24	Farmer 24 Age- 60	6	7-8	Not Answered	Not Answered	No use
25	Farmer 24 Age-23	10 cows	20	Not Answered	Not Answered	Paneer making
26	Farmer 26, Age 38	8 cows	15	Not Answered	Not Answered	Making Khawa
27	Farmer 60, Age-27	6	3	Not Answered	Not Answered	Paneer making
28	Farmer 40 Age-28	10	1	Not Answered	Not Answered	No use
29	Farmer 38 Age-29	1 Sheep	2	Not Answered	Not Answered	No use
30	Farmer 45 Age-30	3	20	In open air or add ice cubes in container containing milk	Not Answered	In making Curd or paneer
31	Farmer 45 Age-31	3	12	Freezing	Heat, transport, contaminated container	Sell to dairy owners in half price
32	Farmer 54 Age-32	2	4	Freezing	Improper cattle diet, if Dirty utensils are used	Not answered
33	Farmer 31 Age-33	6	6	They Directly sell out to dairy owners or their customers so generally no spoilage occurs	Not Answered	Not Answered
34	Farmer 54 Age-34	2	5	Freezing or open air	Improper care of cattle	In making curd, paneer, or sell it
35	Farmer 50 Age-35	2	30	Freezing, boiling	Not Answered	Not Answered
36	Farmer 38 Age-36	2	15-20 liters	10 years	Freezing or sometimes keeping in a bucket In open air	In making Dairy products