

Evaluation and Quality Assessment of Various Brands of Commercial and Homegrown Milk in a Certain Dound Taluka, Pune

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Abstract:

Boiling of milk and any other dairy products is done using different technologies to killed bacteria and making safe to consume. These treatments result in chemical modifications in milk proteins, mainly generated as a result of the Maillard reaction. Recently, different bottom-up proteomic methods have been applied to characterize the nature of these structural changes and the modified amino acids in model protein systems and/or isolated components from thermally-treated milk samples. Oxidation and glycooxidation protein targets in diverse heated milks. These data are essential to rationalize eventual, different nutritional, antimicrobial, cell stimulative and antigenic properties of milk products, because humans ingest large quantities of corresponding thermally modified proteins on a daily basis and these molecules also occur in pharmaceuticals and cosmetics. This review provides an updated picture of the procedures developed for the proteomic characterization of variably-heated milk products, highlighting their limits as result of concomitant factors, such as the multiplicity and the different concentration of the compounds to be detected.

Aim: Evaluation and Quality assessment of various brands of commercial and homegrown milk in a certain Dound Taluka, Pune.

Introduction:

From birth through old life, milk is *necessary* nourishment for humans. It has all the nutrients needed for wellness in nearly optimal amounts. Milk is a complex liquid made up of several compounds *dispersed in various ways*. It is a complex chemical substance in the form of a real solution that contains fats, proteins, minerals, and lactose. It is therefore regarded as the most complete diet *available in nature*.

All minerals are present in milk, however some of the enzymes that are crucial for calcium and vitamin D absorption are destroyed during boiling. Milk has around 87.80% water, 3.20% proteins, 3.50% fat, 4.80% lactose and 0.70% minerals. Each 100 gm milk supplies around 66 kcal of energy. Since milk is a perishable good, it is more likely to spoil in the summer when the temperature soars. The quality of milk is also barely maintained at the consumer level due to disorganized and unregulated marketing systems, the middlemen by adding chemical preservatives such as penicillin, strepto- penicillin, formaldehyde, hydrogen peroxide, sodium bicarbonate, etc.

Objectives:

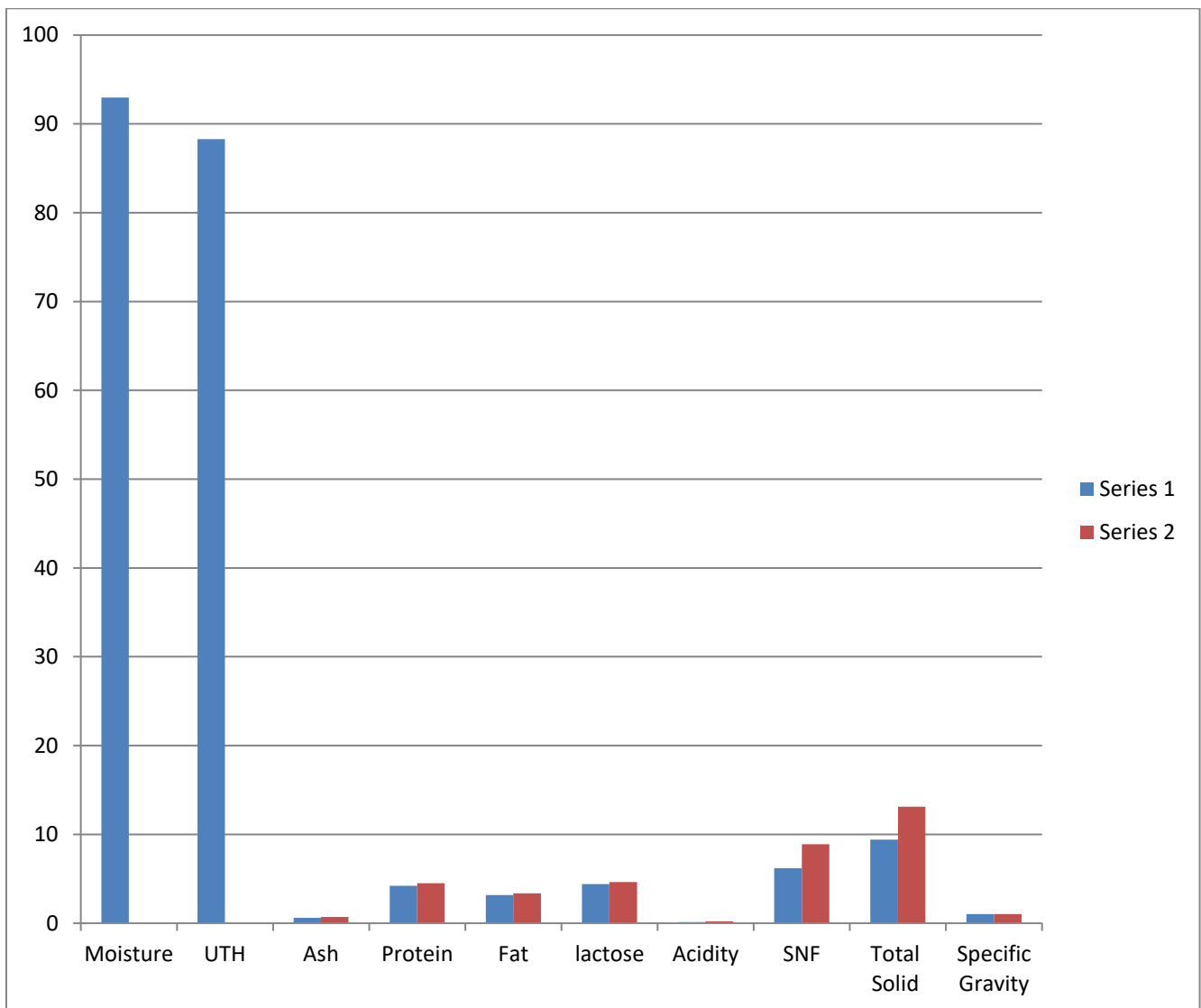
The purpose of this study was to evaluate the bacteriological quality and physicochemical characteristics of a commercial and local milk sample.

Material and Method: Three brands of ultra- high temperature milk (UTH), three brands of pasteurized milk, and three brands of locally produced milk were *sampled were* examined using several quality tests. The consumer preferred the milk sample that was evaluated for its organoleptic qualities by testing panels in the neighborhood. Adulteration of the milk sample is done using a variety of standard methods, including physicochemical and bacteriological (microbial) analysis.

Result:

Physicochemical examination revealed that indigenous milk contains the largest level of moisture, which is (92.55%), while UTH had the lowest (88.30%), with variations in the organoleptic qualities of UTH and pasteurized milk sample being equally acceptable by most panelists. Additional compounds were ash (0.60- 0.70%), proteins (4.20- 4.50%), fat (3.18- 3.66%), lactose (4.42- 4.62%), acidity (6.19-8.90%), SNF (6.19-8.90%), total solid (9.40- 13.10%), and specific gravity (1.026- 1.035%). Homegrown milk samples get negative results for all adulteration tests, however commercial milk samples have positive results for tests for added sugar and alcohol. Although raw milk sample showed a substantial number of this, there were no microorganisms visible in the commercial milk sample.

Sr.No	Content	Percentage
1.	Moisture	92.55
2.	UTH	88.30
3.	Ash	0.60- 0.70
4.	Proteins	4.20-04.50
5.	Fat	3.18- 3.66
6.	Lactose	4.42- 4.62
7.	Acidity	6.19-8.90
8.	SNF	6.19-8.90
9.	Total Solid	9.40- 13.10
10.	Specific Gravity	1.026- 1.035



Conclusion:

On the basis of some parameters there is a fluctuation into three milk samples categories but study concluded that quality of pasteurized and UHT were excellent as compared to homegrown milk. Consumer health risks from adulterants and preservatives, especially for newborns, are disproportionate.[3] Biologically active components contained in milk, such as casein and whey proteins, are becoming increasingly vital for physiological and biochemical processes that have a significant impact on human metabolism and health. Milk is not only essential for young children's nutrition. These substances have been discovered to be helpful in protecting people from viruses and illnesses.[4]during the handling process of milk the quality starts to destroying there is chances of microbial contamination of milk samples. Mycobacterium bovis, Brucella species, Streptococci, and Coxiella burnetti from diseased cattle can contaminate milk. Milk can also contain human- sourced pathogens like Streptococcus species, Corynebacterium diphtheria, Shigella species, and Salmonella species. This is the cause of numerous food- borne illnesses, according to [5]. Pausterization is a preservation technique for milk is mainly performed to destroyed harmful and pathogenic micro organisms under certain temperature(70^o C).while UHT is a process of heating a milk at a temperature at 140 to 150^oC .

Reference

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