

A Study on Purity of Pasteurized Milk Sample Sold In Vidisha City

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Abstract— The adulteration have vigorous potential to degrade the quality of milk, thus the milk is not suitable for human consumption. A section of grabby and disingenuous milk trader has utilized this situation to increase milk supply in the market by adulterating milk. Common milk adulterants are also used to increase self life, volume and SNF. Present study was carried out with the aim to investigation varies adulteration of pasteurized milk sample sold in Vidisha city were examined for different adulterants like sugar, starch, urea, salt, water, neutralizer, skimmed milk powder. Ten samples of milk were collected from Vidisha city only water and skimmed milk powder was found in majority of milk sample.

Keywords: Adulteration, pasteurized milk sample, purity, Skimmed milk powder, SNF

I. INTRODUCTION

Milk is a pale liquid formed by the mammary glands of mammal it is the primary source of nutrition for infant mammals before they able to digest other type of food early lactation milk contains colostrums, which carries the mother's antibodies to its young and can the risk of many diseases. ^[1] Milk is only food of the young mammal during the first stage of its life. The substances in milk present both energy and the building materials for growth. Milk also contains antibodies which protect the immature mammals beside infection. The milk is unseen in the cow's udder; a semi-circular organ split into right and left divides by a line. Each half is split in turn into quarter by a shallower liking line. Each quarter has one teat with its have split mammary gland the udder is collected of glandular tissue, which gives union to the body of the udder and protect it near injury from beat and bluster. ^[2] FSSAI definition of milk is the normal secretion device complete milking of healthy milk animal either addition there or extraction there from unless state in the FSSAI regulation. Milk is the primary source of nutrition for young mammals before they are able to digest other type of food. Milk is complete balance food that provides complete nutrition in a balance proportion and rich in fact, The most common animal from which milk is derived include cows, buffalos, goat and sheep. Various type of packaged milk includes full cream, skimmed, toned, double toned, etc. Depending on the fat content and milk solid content of milk.

As per P.F.A. Act milk define as "milk" is the normal mammary secretion derived from complete milking of healthy animal without any adding there to or extraction there from. It shall be free from colostrums.

Notwithstanding the statutory definition which are minimum standards taking into consideration all aspects which affect the quality and composition, milk is a complex biological fluids of fat, proteins minerals, vitamin, enzyme and sugar.

II. MATERIALS AND METHODS

A. Sample and Sampling Site:

The different brands of milk sample were collected from local market of Vidisha city using standard sampling method.

B. Detection of adulterants/Purity in milk:



Fig. 1:

C. Detection of Water In Milk

Lactometer analyses detect adulteration of milk by water. Take raw milk in a long stemmed wide mouth bottle or a measuring cylinder. Put the lactometer in it taking care to see that the lactometer does not contact the sides of the bottle or the measuring cylinder. Note the reading at the surface of milk sample taken. Also note the temperature of the milk sample.

D. Detection sugar in milk ^[3]

1) Procedure

Take 1 ml of milk a test tube. Add 1ml of resorcinol solution and mix. Place the tube in boiling water bath for one min. Withdraw the tube and observe the colour. Appearance of deep red colour indicates presence of sucrose or a ketose sugar. In pure milk sample no such red colour is developed and sample remain white in nature.

E. Detection starch in milk ^[4]

1) Procedure

Take 5 ml of milk in a test tube. Convey to boiling condition and allow the test tube to cool to room temperature. Add 1-2 drops of iodine solution to the test tube. Development of blue colour indicate occurrence of starch which disappears when sample is boiled and reappears on cooling.

F. Detection of added urea in milk ^[5]

1) Procedure

Mix 1 ml of mil with 1 ml of 1.6% DMAB reagent. District yellow colour is observed in milk containing added urea. The control (normal milk) shows a slight yellow colour due to presence of natural urea.

G. Detection of Sodium chloride in milk [6]

1) Procedure

Take 5.0 ml sample and add 1.0 ml of 0.1N silver nitrate solution Mix the content thoroughly and add 0.5 ml of 10% potassium chromate solution and observe the colour. Appearance of chocolate brown precipitate indicates that absence of dissolve chloride in milk and presence of yellow colour indicates presence of dissolved chloride.

H. Detection of neutralisers [7]

1) Procedure

To 10 ml of milk add equal volume of 95% alcohol in test tube. Add a few drops of 1% alcoholic solution rosalic acid. If alkali is present a rose red colour appears whereas pure milk shows only a brownish colour.

I. Detection of Skimmed milk powder [8]

1) Procedure:-

Take 50 ml of milk in a 60 ml centrifuge tube. Place the in the centrifuge ad balance it properly. Centrifuge at 3000 rpm for 15 minutes. Decant the supernatant creamy layer carefully. Add 0.5 ml of acetic acid for coagulation and then add 2ml of 1% phosphomolydic for 15 minutes and then cool. The curd obtained from pure milk shall be greenish in colour whereas the curd of sample contain skim milk powder shall be bluish colour. The intensity of bluish colour depends on the amount of skim milk powder present in the sample.

III. RESULTS AND DISCUSSIONS

A total of 10 milk samples were tested

S. No.	Sample	Water	Sugar	Starch	Urea	Salt	Neutralize	S.M.P
1.	D1	P	A	A	A	A	A	P
2.	D2	P	A	A	A	A	A	P
3.	D3	P	A	A	A	A	A	P
4.	D4	P	A	A	A	A	A	P
5.	D5	P	A	A	A	A	A	P
6.	F1	P	A	A	A	A	A	P
7.	F2	P	A	A	A	A	A	P
8.	F3	P	A	A	A	A	A	P
9.	F4	P	A	A	A	A	A	P
10	F5	P	A	A	A	A	A	P

Table 1:

Market milk samples randomly collected from different region in Vidisha city were examined for different adulterants and water and skimmed milk powder was the adulterant found in the majority of milk sample evaluate in present study. While other adulterants such as starch, urea, cane sugar, sodium chloride, and neutralizer Were not detect Addition of water is common which affects the physical and chemical quality of milk .Samples shows present of Adulteration SMP in all sample indicating 100% adulterated.

Presence of adulterants in such a high percentage of milk samples is a severe public health concern especially to the children pregnant woman and aged persons.

IV. CONCLUSIONS

After testing all the samples it was found that some Pasteurized milk are adulterated it is a matter to think, that on

one hand we are progressing in science. Era day by day and on the other hand we are not vigilant towards our health. Main cause is this that the common men have not sufficient knowledge regarding food adulteration adding to this procedure analysis of food product on government level is very complicated and the peoples are unknown from this procedure. Therefore such management must be that the adulteration be recognized in food products may be penalized.

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