

14. To detect the presence of starch added as an adulterant to the milk.

Date : / /

Aim: To detect the presence of starch added as an adulterant to the milk.

Requirements: Test tubes, pipettes, 1% iodine solution, milk samples (minimum 3, preferably raw milk of same animal source cow/ buffalo), etc.

Theory: Addition of starch increases the SNF (Solid Not Fat) content of milk. Wheat flour, arrowroot starch, rice flour can be added for increasing the SNF (Solid Not Fat) content. Starch is used to prepare synthetic milk, which is, then added to natural milk. This is commonly used to compensate for the added water. Since starch powder is easily and cheaply available, it is the most common adulterant to milk, after water.

Procedure:

1. Measure out 3ml milk into a test tube/container.
2. Keep the test tube for incubation in boiling water bath for 5 minutes.
3. After incubation, cool the test tube, add few (2-3) drops of 1% iodine solution and mix the contents well.
4. Appearance of blue-black color indicates presence of starch in milk.
5. Note down the observations in the observation table.

Figure :

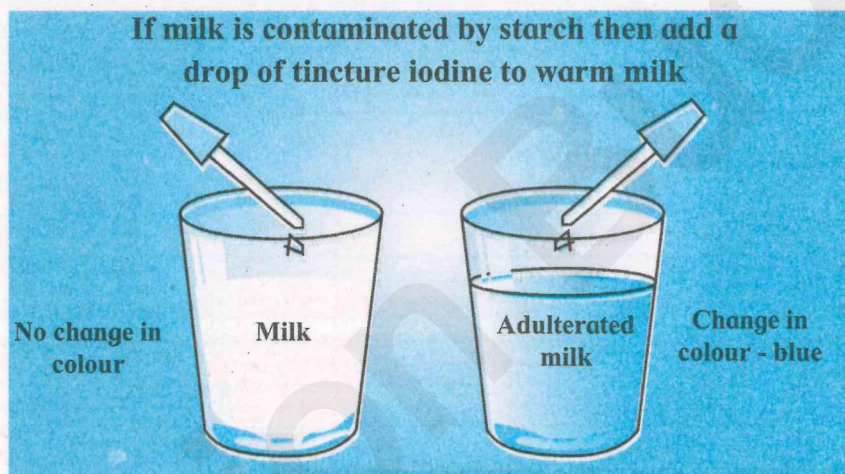


Fig. Experimental set up

Observation table:

Sample	Observation (Colour change – if any)	Inference
Sample 1	No any colour	Non adulterated
Sample 2	Blue black colour	Adulterated

Conclusion:

Milk sample 1 shows **No any colour**; hence, it is ~~adulterated~~ not adulterated with starch.
Milk sample 2 shows **Blue black colour**; hence, it is adulterated/~~not adulterated~~ with starch.

Questions

1. What do you mean by SNF value?

The meaning of SNF in milk "solid Not Fat" . The substances in milk other than water and butterfat are termed as Solids Not Fat(SNF). It is a residual component left after the complete evaporation of water from milk.

2. What is the SNF value of natural unadulterated milk ?

Normally cow milk contains 8.3% SNF whereas buffalo milk contains 9.0% SNF.

3. Does SNF value of milk change with the change in animal source (i.e. cow or buffalo)?

Yes, SNF value changes slightly with the change source. Normally cow milk contains 8.5% SNF whereas buffalo milk contains 9.0% SNF

4. Which type of sugar is present in milk?

In cow's milk and buffalo milk the comes primarily from Lactose, also known as milk sugar.

5. Name the microorganism commonly used in dairy industry.

Lactobacillus bacteria are used in the dairy industry as these helps in fermentation mainly by producing lactic acid and decreasing the pH of milk which causes curdling of milk.

Remark and Signature of Teacher