

## *Practical Exercise 14*

# **Sensory evaluation procedure of milk**

**Objective:** *To judge the quality of milk with the help of sensory evaluation*

### **Introduction**

The sensory evaluation of milk is of utmost importance. Packed and retail sale of fresh milk comprises a major share of Indian dairy industry. Since fluid milk consumed by most everyone every day it is being assessed daily for its quality. The finished milk product can not better than the ingredient from which they are made.

For every milk and milk product there is a specific score card and scientific technique for sensory evaluation. However the sequence of observation is mostly same for almost all the products. First, for a packaged product the quality of the package in which the product is marketed is evaluated. This is followed by observing the appearance characteristics of the product. In the next step flavour of the product is judged and finally the body and texture is evaluated. In the following section the detailed procedure for sensory evaluation of milk is described.

Flavour: Excellent quality milk should seem pleasantly sweet with no foretaste, leave only a clean, pleasing sensation after the sample has been expectorated or swallowed, with no aftertaste. The flavour of milk is imparted by the natural components such as proteins, fat, salts, milk sugar (lactose), and possibly small amounts of other milk

components. The natural richness of milk is due to presence of milk fat and sweetness is due to milk sugar.

**Colour:** Colour of cow milk is yellowish creamy white and buffalo milk is creamy white. The scattering (refraction) of light by the insoluble colloidal minerals, protein, and fat particles are mainly responsible for the opaqueness and white colour of milk. Cow milk contains more beta-carotene which scatters yellowish light lending to creamy-yellow hue to cow milk.

## Porcedure

1. Examine the container for the extent of fullness, cleanliness and freedom from cracks or chips.
2. The container should have attractive appearance, clear and contain the full volume of milk.
3. Should reflect cleanliness, recently filling and should posses dry, firm and milk solid free surface free from cuts/nicks/pinholes.
4. Warm the sample to 40°C.
5. Fifty ml of sample should be served in clean, odourless glass or plastic bottles.
6. Observe the kind, amount and size of the sediment particles that may have settled at the bottom.
7. Immediately after opening the lid smell the milk and closely inspect the underside of the closure for presence of cream or foam and examine the top of the milk sample for its colour, presence of cream plug or partially churned fat globules.
8. Gently swirling the container contents in a circular pattern to mix the sample properly and take a generous sip (not less than 10 ml) roll it in the mouth and note the flavour and tactual sensation, then expectorate.
9. Aftertaste may be enhanced by drawing a breath of fresh air very slowly through the nose.
10. By placing the nose directly over the container immediately after the milk has been swirled in the container and taking a full 'whiff' of air, any off-odor that may be present can be more readily noted.

11. Agitation (or swirling) of the milk leaves a thin film of milk on the inner surface of the container, which tends to evaporate, thus readily optimizing the opportunity to detect any odor(s) that may be present.
12. Indicate the scores on different attributes in the Evaluation Card (Table 1).

### Sensory score card for milk

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Characteristics	Maximum score	Sample Scores		
		Sample No. 1	Sample No. 2	Sample No. 3
Flavour	40			
Consistency	30			
Odour	20			
Colour & Appearance	10			
Total	100			

Comments, if any:

Signature of the Judge

Table 1. Score card for sensory evaluation of milk prescribed by Bureau of Indian Standards (BIS)

After averaging of data (recorded in the score card by the panelists) the following grades should be awarded to each sample. Any attribute showing pronounced defect should be graded poor and rejected.

Quality	Score	Grade
Excellent	90 and above	A
Good	80 to 89	B
Fair	60 to 79	C
Poor	59 and below	D