EXPERIMENT 11 JUDGING OF MILK

Structure

11.1   INTRODUCTION

Milk is a very important food commodity. Hence, the processed milk dispatched to the market must have pleasant flavour free from all abnormal odours and taste. Moreover, consumers accept or reject the milk on the basis of its organoleptic quality. Therefore, it is imperative to properly judge the organoleptic quality, i.e. colour and appearance, aroma and taste (flavour) and consistency of milk before its dispatch to the market. Since milk is the raw material for processed milk and various dairy products, it is also essential to evaluate its organoleptic quality before receiving in the processing plants.

11.2   OBJECTIVES

l   to learn the method of judging of milk; and

l   to acquaint with the desirable and undesirable attributes of milk.

11.3   EXPERIMENT

i.   Principle

Judging of milk is done with the help of five human senses, viz. sight, smell, taste, hearing and touch. Therefore, the judge should have average sensitivity in respect of these basic senses. He/ she should also be properly conversed with the desirable and undesirable attributes of milk and know the use of score card and scoring guide. He/ she should also understand the role of external factors that affect the judging of dairy products. Even though the judges have very good sensitivity, only those having interest and motivation should be included in the sensory panel.The environment should be neat and clean, free of any odour/ off flavour and comfortable for judging

ii.   Requirements

i)   Milk score card and scoring guide.

ii) Representative samples of milk either in sealed pouches (individual samples) or in properly closed bottles.

iii) Glass tumbler.

iv) Thermometer.

iii. Procedure

i) Collect a representative sample of milk. In case of a retail container, such as milk pouch/ bottle, the sample can be taken as such, whereas from a bulk container, about 100 ml samples should be drawn in a clean glass bottle.

ii) Note the actual temperature. If it is too low, adjust it to about 15°C.

iii) First of all note the condition of the container/ sachet for neatness, fullness, etc. and smell the milk for aroma.

iv) Open the sachet or container.

v) Simultaneously observe the sample for colour, presence of extraneous matter and partially churned fat globules floating on the surface, if any.

vi) A sediment test, using a standard disc for comparison, should be performed. Alternatively, observe the presence of extraneously matter, if any on the surface and bottom of milk and score on the basis of extent of this matter.

vii) Sip sufficient quantity of milk, roll around your mouth and note the taste sensations.

viii) Expectorate the sample, wait for a few seconds for perception of the after-taste and finally rinse your mouth thoroughly with tap or lukewarm water.

iv. Observations

Record scores of all attributes of each sample in the score card (Table 11.1) against the maximum score. Tick mark against the defect, if any, in the relevant row under the corresponding sample. Refer to the suggested scoring guide (Table 11.2) for allotting score based on the intensity of the defect. Allot perfect score in case an attribute is not judged or examined, for example bacteria and temperature.

v. Results

Results are the same as recorded in the score card. Make total of all score and grade the samples as below:

Score	:	Grade
> 90%	:	Excellent
80-90%	:	Good
60-80%	:	Fair
< 60%	:	Poor

11.4 PRECAUTIONS

i) Temper the sample at proper temperature.

ii) Don't use odorant materials, such as perfume at the time of judging.

iii) Keep a gap of 1 hour between meal and judging of samples.

iv) Always rinse your mouth with fresh tap water or luke warm water between the samples

Table: 11.1 Score Card for Milk

Scoring Instructions: Please write the score under each sample in the appropriate space against the maximum score. Refer to the scoring guide for allotting the score based on the type and intensity of defect. Indicate the defect, if any, by tick mark opposite the listed defects under the corresponding sample. Total the score of each sample and grade on the basis of suggested scale.

ATTRIBUTES	Defect	Sample Number				
		1	**2**	**3**	**4**	**5**
Flavor (Max Score 10)	Score					
Allot ³ 9 for normal sample	Acidic (sour)					
	Barny					
	Bitter					
	Cooked					
	Cowy					
	Feed/ weed					
	Flat					
	Foreign					
	Lacks freshness					
	Neutralizer					
	Oxidized					
	Metallic					
	Rancid					
	Salty					
	Sunlight					
	Unclean					
PACKAGE SCORE	(MAX SCORE 5)					
Normal sample ³4.5	Defective/ Leaky					
	Dirty outside					
	Illegible printing					
	Labeling/ code incorrect					
	Manufacturing & use till date not given					

SEDIMENT & APPEARANCE (MAX SCORE 3) SCORE			
BACTERIA SCORE	(MAX SCORE 5)		
	SPC		
	Coliform count		
TEMPERATURE SCORE	(MAX SCORE 2)		
	Dirty		
	Unattractive		
	Un-sealed/leaky		
TOTAL score for each sample			

Table 11.2: Scoring Guide for Milk

Attributes	Class of Defects	Suggested score		
		Slight	Definite	Pronounced
Flavour	i) Flat, cooked, feed/ weed	9	7	5
	ii) Salty, lack freshness, neutralizer	8	6	3
	iii) Cowy, oxidized, metallic, sunlight	6	4	2
	iv) Rancid, Barny, bitter	5	3	1
	v) Sour, Unclean, foreign	3	1	0
Package	i) Defective/ leaking	0		
	ii) Dirty from outside	3 – 4		
	iii) Illegible printing	3 -4		
	iv) Manufacture and use till date not givenUn-salable			
Sediment & Appearance	i) No sediment or extraneous matter	3		
	ii) Sediment < 0.025 mg/ disc or slight extraneous matter	1 – 2		
	iii) Sediment > 0.025 mg/ disc or excessive extraneous matter	0		

Bacteria	SPC Score	Coliform/ ml	
	>30000	>10	0
	30000-20000	7-9	1-2
	20000-10000	1-6	3-4
	<10000	0	5
Temperature	The processed milk should be stored and marketed in chilled condition i.e. temperature in range of 4-10ºC. In case temperature is more than 10ºC, zero score can be given		