

JUDGING OF DAIRY PRODUCTS





B. Tech. (Dairy Technology) ► DT-8 ► Resources ► Lesson 19. SENSORY EVALUATION OF CREAM

Module 6. Fat rich dairy products

Lesson 19 SENSORY EVALUATION OF CREAM

19.1 Introduction

Cream is that portion of milk in which the fat is concentrated, usually by centrifugal separation. It contains all the constituents of milk from which it has been separated out, but these constituents are present in different proportions. Cream differs primarily in the percentage fat, in the processing treatments, in bacteriological treatments and in the use made of them. Several kinds of cream are recognized commercially. These are:

- **Table cream:** (16-22% fat), also called "coffee" cream. It may or may not be homogenized.
- **Whipping cream:** (30-40% fat), also referred to as 'double cream'
- **Whipped cream:** Whipping cream, which has been flavoured, whipped and delivered in whipped form
- **Plastic cream:** (70-80%) fat cream
- **Low fat cream:** (10-12% fat) also called half-and-half homogenized milk.
- **Frozen cream:** Sweet cream containing 50-75% fat, carefully processed and stored at 0-10° F. Used for making ice-cream mix.
- **Devonshire cream:** Obtained by hand skimming shallow pans of scaled whole milk. Also called clotted cream, scaled cream or cooked cream.
- **Cultured sour cream:** Heavy, smooth, viscous, sour cream prepared by ripening of cream by culture.
- **Commercial sweet cream:** High quality sweet cream for use in ice cream mix and other dairy products.
- **Churning cream: (36-42% fat):** Produced primarily for the purpose of being made into butter.

19.2 Scorecard for Cream

The American Dairy Science Association, through its committee on Judging Dairy Products has developed scorecard for fluid milk products, which can be used for milk, cream, chocolate milk, skim milk, low fat milk, and other fluid and flavored milks. The score card is as shown below:

Table 19.1 Score card for cream

Score card for Cream			
Name :			Date & Time :
Attribute	Criticism	Suggested range	Sample No.
Flavour 45* (normal range 31-40)	Score		
	Acid	33-31	
	Malty	35-31	
	Fruity	33-31	
	Barny	35-31	
	Cowy	36-31	
	Unclean	33-31	
	Feed	39-34	
	Weed	35-31	
	Cooked	39-36	
	Scorched	36-32	
	Burnt	36-32	
	Caramelized	34-31	
	Flat	39-36	
	Bitter	35-31	
	harsh - poor flavour blend	37-33	
	Too sweet	39-35	
	Lacks sweetness	39-35	
	Unnatural flavouring	38-33	
	Insufficient flavouring	39-35	
Excessive flavouring	39-35		
High salt	39-35		
Lacks fine flavour	39-38		
Storage	39-34		
Stale	37-31		
Metallic	36-31		
Oxidized	36-31		
Irradiated	36-31		
Rancid	36-31		
Astringent	39-35		
Chalky	37-35		
Foreign	37-31		
Sediment 10* Normal range 5-10)	Score		10 10 10
For unflavored milk we may use the US Department of Agriculture : Sediments Standards for milk. In flavored products normally containing suspended particles, a visual check of sedimentation or stratification in the container is desired.			

Attribute	Criticism	Suggested range	Sample No.
Package 5* (normal range * 1 - 5)	Score		
	Closure unsealed	4.5-1	
	Pouring lip unprotected	4-3	
	Any part of the container not water proof	4-1	
	Damaged container	4.5-1	
	Leaky container	4-1	
	Dirty container	4-1	
	Not full	4.5-1	
Bacteria 25* (Normal range 20-25)	Score		
	In pasteurized products but not sterilized, the bacteria may be scored on the basis of a standard plate count performed after a 5 day incubation of the product at 45 °F. For each 4000 organisms, 1 point may be deducted. Simultaneously 0.5 point may be deducted for each coliform organism found per ml of sample.		
Appearance 10 *Normal range 5-10)	Score		
	Cream layer or cream plug	9-4	
	Unnatural colour	9.5-5	
	Low viscosity	9.5-7	
	High Viscosity	9.5-7	
Temperature *5 (Normal range 2.5-5)	Score		
	A deduction of 0.5 points may be made for every degree above 40 °F		
Total Score			
* Not marketable when the score is below the normal range			

In addition to these items, viscosity, serum separation. cream plug and whipping quality might well be considered also.

19.2.1 Materials required

Cream/milk sample bottles, 100 ml beakers, plungers, sediment tester and standard sediment disks, thermometer, acidity testing set, etc.

19.2.2 Procedure

- As certain the condition and external appearance of the container and record observation as clean, attractive, dirty, loose lid, leaky, unsealed, dented, etc.
- Open the cover/lid and smell the contents immediately and examine smell and appearance of cream simultaneously. Record observation as pleasant, sour as well as any other off flavour if any, clean, foamy, fat separation, etc. Examine the inner side

of the lid for adhering fat or foam.

- Stir the cream with plunger and note down the temperature.
- Perform the sediment test and compare the discs with the standard sediment discs and also estimate its Titratable acidity.
- Take about 50 ml of cream in a beaker from the sample and sip it. Roll it in the mouth for a few seconds and note down the flavour, mouth feel, consistency, etc. It is advised not to swallow the cream. Note down the observations in accordance to as shown in the score card and give score after deducting marks depending upon the type and intensity of defect.

19.2.3 Desirable attributes

In general, cartoned or bottled cream should have a clean, sweet, nutty flavour, be of uniform consistency, have a good physical appearance and good keeping quality.

The titratable acidity of all fresh cream should be consistent with the fat percentage of the cream. There exists an inverse relationship between the percentage of fat and the percentage of titratable acidity.

Any sediment in cream is objectionable. In case of cream the bacterial limits are double those for pasteurized Grade A milk.

The coliform limit shall not exceed 10 per ml. The proposed bacterial limit of 30,000 for pasteurized market cream is in line with a high quality product.

The order of examination, applying in large part to Table Cream in glass containers, should be as follows:

1. Serum separation
2. Sediment
3. Container and closure
4. Cream plug
5. Bacterial count
6. Viscosity
7. Flavour
8. Acidity

9. Feathering

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DT-8