DEPARTMENT OF LIVESTOCK PRODUCT TECHNOLOGY

TOPIC: ICE CREAM

INTRODUCTION

Today ice cream may be considered a luxury food item, although its popularity is increasing rapidly.

- DEFINE: According to PFA Rules (1976), it is a frozen product obtained from cow or buffalo milk or a combination thereof or from cream, and other milk products, with or without the addition of cane sugar, eggs, fruits.
- It may contain permitted stabilizers and emulsifiers not exceeding **0.5% *by weight***.
- The product should contain not less than 10 **%. milk fat , 3. 5 % protein and 36% total solids.**

CLASSIFICATION

1. Plain
2. Chocolate
3. Fruits
4. Nut
5. Milk ices or milk lollies
6. Ices
7. Sherbet
8. Fancy Moulded
9. Novelties
10. Soft ice cream

https://recipes.net/wp-content/uploads/2020/03/ice-cream-gelato-sorbet-sherbet.jpg

COMPOSITION

Characteristics	Requirement
Weight (g/ Litre)	525
Total solids	36.0
Milk fat	10.0
Acidity	0.25
Stabilizer/ Emulsifier$\% \, wt.$	0.5
Standard plate count	Not more than 2,50,000
Coliform count (per g.)	Not more than 90

METHOD OF MANUFACTURE OF ICE CREAM

Selection of ingredients

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Figuring the mix

↓

Making the mix

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Pasteurization (68℃ for 30 min.)

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Homogenization (stage 1: 2500 psi)
(stage 2 : 500 psi)

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Cooling and ageing

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Freezing the mix(4-5 ℃)

↓

Packing of ice cream

↓

Hardening and storage of ice cream (-23 to -29℃.)

https://www.icemakeindia.com/wp-content/uploads/2019/08/Pasteuriser-1024x1024.png

https://synergyagrotech.com/wp-content/uploads/2019/05/homogenizer-02.jpg

Properties of mix:

A. Viscosity
B. Acidity
C. pH
D. Mix stability
E. Specific gravity
F. Surface tension
G. Freezing point

https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSM63QsXgSXy6Ev5hTsmvuSYfamMDJtMixTJQ&usqp=CAU

➢ Emulsifiers and stabilizers for ice cream:

Emulsifiers:	1. Produced a dry and stiff ice cream. 2. Improved whipping quality of ice cream. Example di glycerides , mono glycerides
Stabilizers :	1. Produced smoothness and texture to shrinkage of product volume during storage. Example 1. Sodium alginate(Dariloid) 2. Gelatin

➢ Overrun of ice cream:

Products	Percentage of overrun
Ice cream of, Packaged	70 to 80
Ice cream of, bulk	90 to 100
Soft ice cream	30 to 50

$$\%\ overrerrun = \frac{(\text{volume of ice cream}) - (\text{volumeof mix}) \times 100}{\text{Volume of mix}}$$

➢ Hardening storage and packaging

HARDENING

- Freezing process is continued without agitation during hardening until temperature of ice cream reaches -18 ℃ *or below for* 12 *hours*

PACKAGING

- When ice cream is drawn from freezer, collected in containers which give shape or size for convenient handling during the hardening, shipping and marketing process.

STORAGE

- The temperature of storage room for ice cream between -23℃ to -18℃.

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➢ Defect in ice cream:

Defects	Causes	prevention
Low Flavour	Addition of inadequate amount of flavour	Additon of correct amount flavour
Bitter flavour	Low quality ingredients used	Using fresh ingredients
Flat flavour	Addition of inadequate amount of sugar	Used proper amount of sugar
Crumbly body	Low solid, Low stabilizer , Excessive overrun	optimum solid, Optimum stabilizer, Correct overrun.
Color defect	Inadequate amount of color	using proper amount of color
Shrinkage	Loss of moisture	Temperature maintain during storage
Sandiness (texture defect)		


Thank you