

Defects in ice cream, their cause and prevention

Name of defect	Cause	Prevention
Flavour		
High	Addition of excessive amount of flavour	Addition of correct amount of flavour
Low	Addition of inadequate amount of flavour	Do
Acid/sour	Presence of excessive (developed) acidity due to use of sour dairy products, slow cooling of mix at higher temperature.	Control over developed acidity by using fresh and sweet dairy products, prompt and efficient cooling of milk and storage of mix at 0-5°C
Bitter	Using low quality ingredients, especially flavour, dairy products etc.	i. Using true flavour extract ii. Using fresh sweet dairy products
Cooked	Overheating of mix during pasteurisation	Proper heating
Flat	Addition of inadequate amount of sugar	Addition of correct amount of sugar
Unnatural	Addition of not – so- typical ice cream flavour	Addition of typical flavour
Rancid	Fat hydrolysis due to lipase action in the individual fat rich ingredients or in the mix	Inactivating lipase by proper pasteurisation of the individual fat rich ingredients or mix.
Oxidised/Oily/Metallic/Tallowy	Fat oxidation due to direct contact of individual fat rich ingredients or mix with copper or iron, exposure to sunlight	Storage of individual fat rich ingredients or mix in tinned/aluminium alloy/stainless steel vessel
Body		
Crumbly	i) Low solids content ii) Low stabilizer content iii) excessive overrun iv) Improper homogenisation	i) Optimum solids content ii) Optimum stabilizer content iii) Correct overrun iv) Proper homogenisation
Soggy	i) Low overrun ii) High sugar content iii) Excessive stabilizer content	i) Optimum overrun ii) Optimum sugar content iii) Optimum stabilizer content
Weak	i) Low solids content ii) Low stabilizer content	Optimum solids content Optimum stabilizer content
Texture		
Buttery	Inadequate homogenisation	Adequate homogenisation
Coarse/Icy	i) low solids content ii) low stabilizer content	i) optimum solids content ii) optimum stabilizer

	<ul style="list-style-type: none"> iii) inadequate aging iv) slow freezing v) slow hardening vi) heat shock vii) long storage 	<ul style="list-style-type: none"> iii) adequate aging iv) rapid freezing v) rapid hardening vi) avoiding heat shock vii) short storage
Fluffy	<ul style="list-style-type: none"> i) excessive overrun ii) low solids content iii) excessive emulsifier content 	<ul style="list-style-type: none"> i) optimum overrun ii) optimum solids content iii) optimum emulsifier content
Sandy	<ul style="list-style-type: none"> i) High MSNF/ lactose content ii) Temperature fluctuation in retail cabinet iii) Long storage period 	<ul style="list-style-type: none"> i) Optimum MSNF/lactose content ii) Avoiding temperature fluctuation in retail cabinet iii) Short storage period
Melting Quality		
Curdy meltdown	Using high acid mix	Using fresh , sweet mix
Foamy melt down	<ul style="list-style-type: none"> i) Excessive overrun ii) Excessive emulsifier content 	<ul style="list-style-type: none"> i) Optimum overrun ii) Optimum emulsifier content
Slow melting	<ul style="list-style-type: none"> i) Excessive stabilizer content ii) Inadequate homogenisation 	<ul style="list-style-type: none"> i) Optimum stabilizer content ii) Adequate homogenisation
Colour		
Unnatural	Wrong colour	Proper colour
Miscellaneous		
Shrinkage	<ul style="list-style-type: none"> i) Temperature fluctuation during storage ii) Excessive overrun iii) Rough transportation 	<ul style="list-style-type: none"> i) Constant temperature ii) Optimum overrun iii) Avoiding rough transportation