

Unit 22 Milk and Dairy Products

Glossary

Cane: the hollow jointed stem of sugar-cane

Beet: a herbaceous plant widely cultivated as a source of food for humans and livestock, and for processing into sugar

Bind: to fasten tightly together

Egg yolk: the yellow internal part of a bird's egg

Clump: to form a clustered thick mass

Frozen dairy food: ice cream

Ice cream is a typical example of frozen dairy food. The ingredients used in the manufacture of ice cream include dairy products and non-dairy products. Dairy products include whole milk, skim milk, cream, frozen cream, butter, butter oil, condensed milk products and dried milk products. The non-dairy products include sweetener solids (sucrose, dextrose), stabilizers, emulsifiers, egg products, soy, almonds, rice, flavourings, colourants and water.

The composition of ice cream consists of a total solids content of about 40% and the rest is water and incorporated air. The mixture of ingredients prior to the incorporation of air is known as the ice cream mix. Ice cream in its final form contains a large amount of air as air is whipped into the mix. Whipping the air is necessary, as small uniform air cells are required to prevent the ice cream from being too dense, too hard and too cold when eaten. The increase in volume caused by whipping air into the mix during the freezing process is known as 'overrun'.

Each of the solid ingredients of the mix has a distinct function. Milk fat gives rich flavour and improves the body and texture. It is also the concentrated source of calories and contributes to the energy value of ice cream. Milk solids non-fat (MSNF) contribute to the flavour, body and also help to achieve a desirable texture. Sugar gives sweetness to the product and lowers the freezing point so that the mix does not freeze to a solid in the freezer. Sucrose from **cane** or **beet**, or dextrose or corn syrup may be used. Stabilizers are gums such as seaweed gums, pectin or carboxymethyl cellulose. These gels, when combined with water, help to improve body and texture. They also **bind** with water and prevent the formation of large sized ice crystals during freezing. Emulsifiers such as **egg yolk**, lecithin or mono- and diglycerides help the dispersion of the fat globules throughout the mix and prevent them from **clumping** together. Emulsifiers also improve the whipping or air incorporation properties of the mix to reach the desired overrun and make the ice cream dry and stiff. Synthetic flavours such as vanilla, chocolate, strawberry or coffee and fruits and nuts can be added.

(Adapted from: B. Sivasankar, *Food Processing and Preservation*, Prentice Hall of India, 2004)



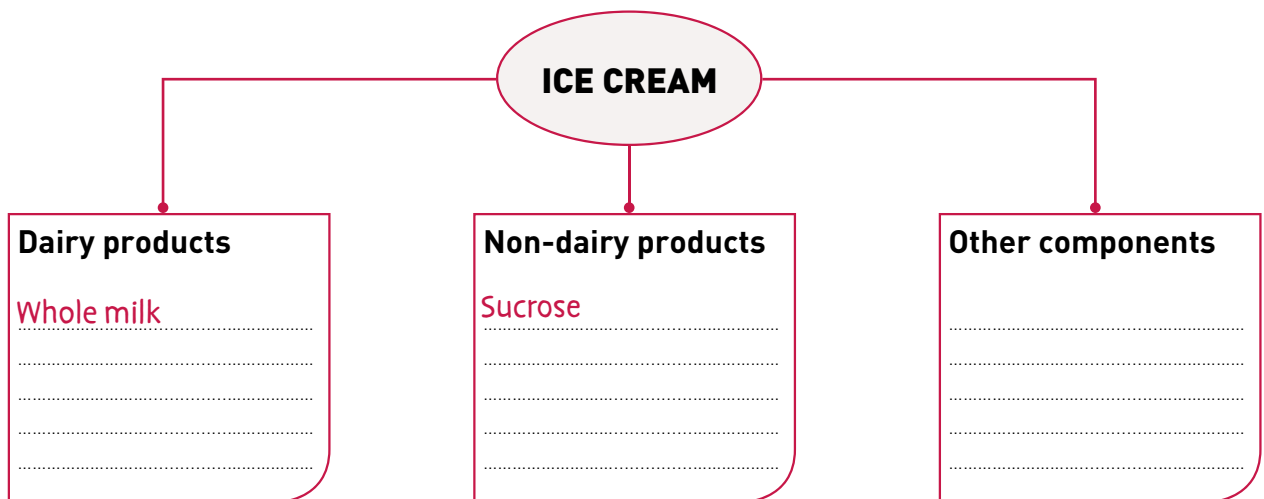


Understanding the text

1. Read the text and find adjectives and terms that are associated with the words below.

- 1.,,,
..... products
- 2. milk
- 3. content
- 4. functions
- 5. value

2. Complete the diagram below with the correct terms and expressions from the text. Two have been done as an example.



Writing

3. Write the functions of the solid constituents mentioned in the text.

- 1. :
- 2. :
- 3. :
- 4. :