SUMMARY

The principal function of the lipids is to serve as source of energy for the infants and young ones. It is also serves as a source of essential fatty acid i.e., fatty acids which cannot be synthesized by higher animals especially linolenic acid, and soluble vitamins such as A, D, E, and K. The lipids also help in contributing to the flavour and the rheological properties of the dairy products and foods in which they are used. The milk fat is present in milk as oil-in-water emulsion in globular form. The cow milk lipids are triacylglycerols (TGs)which contributes to 97-98 % of the total lipidsfound in milk. These are formed by the esterification of the hydroxyl groups of glycerol with the fatty acids. The major components of fats are the acids. In case of milk fat, the fatty acids account for about 85% and the glycerol for approximately 12.5% of the weight. Cholesterol and phospholipids are next in the quantity. The phospholipids are present mainly in the milk fat globule membrane and other membranous martial in milk. In addition to stabilizing the emulsion of fat in the milk and preserving the individual identities of the fat globules, it protects the free fat from the lipase enzyme. The fatty acids are usually grouped on the basis of saturation(saturated, monounsaturated and polyunsaturated). Similarly they can also be grouped on the basis of geometric isomerism as straight chain, branched chain, on the basis of chainlength as short, medium and long chain.The chain length of fatty acids in milk fat varies from $C_4$to C_{26}.

The milk fat has certain constant values. These constants serve as indications of the type of component fatty acids present in fats. They also enable the detection of fat adulteration qualitatively and in some cases quantitatively. The physical and chemical constants of fats are helpful in characterizing the fat and identifying the type of fatty acid present in the fat.

In fats a large portion is made up of glycerides esters which are saponifiable material measured by saponification number. This value may range from 210to 233 for milk fat. This value of a lipid indicates the average molecular weight of fattyacids present in it. With exception of coconut and palm oil, this constant of milk fat is well above those for other oils and fats. Iodine number is the number grams of iodine absorbed by 100 g of fat under specified conditions. This value is a measure for the unsaturated linkages present in a fat.The iodine value for milk fat ranges between 26 - 35. This value is the number of milliliters of 0.1N sodiumhydroxide or aqueous alkali solution required to neutralize the steam

volatile water soluble fatty acids distilled from 5g. The R.M. value for milk fat ranges between 18 and 30.It is the number of milliliters of 0.1N sodium hydroxide or aqueousalkali solution required to neutralize the steam volatile water insoluble fatty acids distilled from 5g of fat. The polenskyvalue for milk fat ranges between 1.0 to 3.3.

Peroxide value (PV) is one of the most widely used tests for oxidative rancidity. It is a measure of the concentration of peroxides and hydroperoxides formed in the initial stages of lipid oxidation.The determination of peroxide value is frequently used as a means of determining whether the quality of the oil or fat is spoiled due to oxidative rancidity. In general the oils and fats are spoiled by the chemical deterioration, and more particularly by the oxidation of fat.