SUMMARY

Normal cow and buffalo milk contains about 3.5% proteins. The natural function of the milk protein is to supply the young mammals with the essential amino acids required for the development of muscular and other protein containing tissues and with a number of biologically active proteins i.e., immunoglobulin, vitamin-binding-metal-binding proteins and various hormones. The milk proteins are broadly classified into casein and whey proteins. The ratio of casein: whey protein varies between the species. In human milk it is 40:60 while in cow, buffalo, sheep, and goat milk it is 80:20. The casein proteins can further be fraction into α-casein, β - Casein and κ –Casein. The major differences between casein and whey proteins are: casein gets precipitated at pH 4.6 while whey proteins do not get precipitated, casein is heat stable while the whey proteins gets denatured at higher temperature (above 75^0C), and chymosin and rennet can coagulate the casein but not whey proteins. The two methods of preparation of casein are lactic acid casein and rennet. Casein is generally not consumed as a food on its own. Casein products are used mainly as ingredients in foods for modifying the physical properties of that food or to provide nutritional supplementation. The edible applications of casein products are in Bakery Cheese products, as coffee whiteners and creamers, Confectionery, Infant foods, Instant breakfast and beverages, Nutritional food bars Pasta, Soups and gravies Pharmaceuticals Sports drinks, Whipped toppings, etc. it can also be used in the form of hydrolysed caseins as protein supplements. It also find its use in non food products such as adhesive for wood, foil laminates and paper, Coatings for paper and cardboardLeather tanning, Paints, Synthetic fibres and Textile sizing

Milk contains various natural enzymes. Some of them are of technological importance. Lipase and proteinases though do not desirable in many dairy products, they have positive influence on the ripening of cheese which helps in developing flavour and body & texture in cheese during ripening period. Alkaline phosphotase is another enzyme which is used to test the pasteurization efficiency. Lactoperoxidase is now exploited for extending the shelf life of raw milk at ambient temperature.