SUMMARY

The wide array of available dairy foods like raw milk pasteurized milk, dried products, butter, frozen dairy products, cheese, fermented dairy products challenges the microbiologist, engineer, and technologist to find the best ways to prevent entry of microorganisms, destroy those that do get in along with their enzymes, and prevent the growth and activities of those that escape processing treatments. Spoilage microorganisms cause changes of primary characteristics and properties of milk and dairy products. The product defects depend on the specific species and number of microorganisms involved in pre- and post- technological processing. Most often, these changes are related to single undesirable sensory characteristic, smell, flavor or consistency. However, in the case of heavier microbial contamination all these undesirable characteristics can occur simultaneously. Besides, even small changes caused by presence of spoilage microorganisms lead to decreased quality of milk and various dairy products. Despite of the importance for the overall quality, the control of spoilage microorganisms for dairy industry is not obligated and therefore, only a few producers control them. Therefore, the present study describes the undesirable effect of spoilage microorganisms on quality of raw, pasteurized and sterilized milk, fermented milk, butter, sour cream. The growth of these organisms in raw milk is of particular importance due to production of proteinase, lipase, phospholipase C and glycosidase enzymes strongly damaging milk fat protein membrane causing milk rancid, fruity, bitter, putrid and off flavor Troublesome spoilage microorganisms include aerobic psychotropic Gram-negative bacteria, yeasts, molds, heterofermentative lactobacilli, and spore-forming bacteria. Psychrotrophic bacteria can produce large amounts of extracellular hydrolytic enzymes, and the extent of recontamination of pasteurized fluid milk products with these bacteria is a major determinant of their shelf life. Fungal spoilage of dairy foods is manifested by the presence of a wide variety of metabolic by-products, causing off-odors and flavors, in addition to visible changes in color or texture. Coliforms, yeasts, heterofermentative lactic acid bacteria, and spore-forming bacteria can all cause gassing defects in cheese.