

Technology of Milk Whey Proteins and their Emerging Products: A Review

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Milk proteins are categorized as caseins and whey proteins, based on their differences in solubility at a pH of 4.6, an isoelectric point. Casein and whey proteins constitute approximately 2.6% and 0.7%, respectively, of bovine milk. Casein exists in fresh milk in the form of a “micelle” structure, which is a complex aggregate of proteins (α -, β -, and κ -casein) and colloidal calcium phosphate. Whey proteins are a group of globular proteins, which consist mainly of β -lactoglobulin, α -lactalbumin, and bovine serum albumin (BSA). Both caseins and whey proteins exhibit unique polymer properties. The several types of casein proteins, which are highly diverse both across and within mammal species, are essentially to provide mammal infants with the amino acids needed for growth and development. The properties of casein and whey protein have been extensively studied over the time and new emerging products have been established. In addition, recent advances in processing technologies have expanded the commercial use of whey proteins and their products. As a result, whey proteins are used as common ingredients in various products including infant formulas, protein supplements and weight management products. This review intends to focus on familiarization of various whey protein products and their manufacturing processes. It also intends to enhance production and consumption of similar products in Africa.

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