5.3.2.8 Other milk powders

Yogurt powder, a low pH fermented product, is primarily used to facilitate the acidic taste in chocolate. Yogurt powder is typically used in white chocolate where no cocoa solids are present, so the main taste is based on milk and sugar. The acidity from the yogurt powder masks the sweet taste.

Buttermilk powder (BMP) is the dried serum derived from cream during the manufacture of butter or AMF. During butter manufacture, the milk fat globule membrane is ruptured, resulting in the release of polar phospholipid material from the globule membrane into the serum phase. Up to 20% of the fat in BMP is dairy phospholipids, which compares with about 3% in standard WMP (Table 5.6). Campbell and Pavlasek (1987) have reported the unique flavour contribution that the inclusion of BMP can make to chocolate products.

Whey, demineralised whey powder, lactose and lactose permeate are all cheaper milk-based ingredients used widely to substitute for whole or skim milk content in chocolate and compound coatings. Whey is a byproduct from cheese and casein manufacture. Whey powder produced from casein has a more neutral flavour impact and a higher mineral content than the whey from cheese production, which is pH-adjusted by adding caustic salts, contributing to a salty flavour impact. Most whey is now being concentrated to higher levels of protein content using membrane separation technologies for use in high-protein products, which are less attractive for the chocolate industry as substitutes for milk solids.

Conclusion

Milk is very important for the overall quality of the final chocolate, the milk ingredients contributing to colour, flavour development, softer consistency, easier melt and improved stability. Premium confectionery will continue to require high-quality ingredients designed specifically for confectionery applications.

The chocolate industry is an important customer for the dairy processor. Milk powder production is highly influenced by a surplus of milk and can change according to market needs, political situations and trade association for milk production expansion. Globally the demand for milk powder has grown steadily over the past decades; most of the demand has come from ASEAN countries like China and India which highly influence the prices. This underlies the importance of focusing on new processing technology with greater output, lower cost and ingredients that temporarily or constantly can substitute for higher-priced components, in an ever changing market.

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