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Improving Physicochemical Properties of Milk Powder and Lactose-Free Milk Powder with the Prebiotic Carrier

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Abstract : A lactose-free diet is imperative for those with lactose intolerance and experiencing milk intolerance. This entails eliminating milk-based products, which may result in dietary and nutritional challenges and the main problems of Lactose hydrolyzed milk powder during production were the adhesion in the drying chamber and low-yield and low-quality powder. The use of lactose-free milk to produce lactose-free milk powder was studied here. Development of two milk powder formulas from cow's milk and lactose-free cow's milk by using a substitute for maltodextrin, Polydextrose (PDX), Resistant Starch (RS), Cellobiose (CB), and Resistant Maltodextrin (RMD) to improve quality and reduce the glycemic index from maltodextrin, which are carriers that were used in industry at three experimental levels 10%, 15% and 20% the properties of milk powder were studied such as color, moisture content, percentage yield (%yield) and solubility index. The experiment revealed that prebiotic carriers could replace maltodextrin and improve quality, such as solubility and percentage yield, and enriched nutrients, such as dietary fiber. CB, RMD, and PDX are three possible carriers, which are applied to both regular cow's milk formula and lactose-free cow milk.

Keywords : lactose-free milk powder, prebiotic carrier, co-particle, glycemic index
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