Applications and Usages of Different Prebiotics in the Dairy Industry: A Review

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Prebiotics are indigestible dietary elements that may benefit the host and stimulate the growth of selective probiotics, particularly those that stimulate the growth of bifidogenic and lactic acid bacteria in the gastrointestinal tract. Prebiotics cannot be digested by small intestinal enzymes but are fermented by probiotic bacteria in the large intestine. Prebiotics can be classified in a variety of ways according to their chemical makeup, chain length or degree of polymerization, and the form of application. Prebiotics are found in several vegetables and fruits and are considered functional food components. During the selective fermentation process of colonic bacteria, it produces metabolic products such as hydrogen, methane, carbon dioxide, short-chain fatty acids, and lactate via various carbohydrate hydrolysing enzymes, which provide energy to probiotic bacteria. Some findings claim that prebiotics play a role in reducing the risk and severity of gastrointestinal infection and inflammation, inflammatory bowel disease, ulcerative colitis, bowel function disorders, and irritable bowel syndrome. Prebiotics also increase the bioavailability and uptake of minerals, and data suggest that they reduce the risk of obesity by promoting satiety and weight loss. They are used in many food applications including dairy products. Much research has been focused on using probiotics and prebiotics, generally known as synbiotics in dairy products.

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