
Sweetener Synergy

Sweetener synergy can enhance sweetness quality, flavor and nutritional value in confectionery formulas.

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Sweeteners are an integral part of a wide variety of food formulations. They improve palatability of food products by delivering sweetness perception and enhancing flavors. Carbohydrate-based nutritive sweeteners are used in food formulations not only for sweetness but also for imparting texture and color attributes to the finished products with their contribution to product viscosity and reactions with other food ingredients, such as proteins. High-potency sweeteners, on the other hand, allow food formulators to develop sweet products with reduced calories, lower glycemic load and that are noncariogenic.

Food developers are working hard to overcome formulation challenges for developing reduced-sugar and sugarfree beverages, dairy products, confections and bakery goods. Reduced-sugar and sugarfree products offer choices to consumers who are interested in reducing caloric intake, managing weight and controlling blood sugar level. Nutritive sweeteners have four calories per gram and they are fully digestible and metabolized. High-potency sweeteners such as aspartame make an insignificant contribution to total calories of the finished product due to extremely low usage levels, while non-nutritive high-potency sweeteners such as sucralose have zero calories.

KEY PROPERTIES OF NUTRITIVE SWEETENERS

Sucrose, dextrose, fructose, corn syrups and high-fructose corn syrups are common examples of nutritive sweeteners in food products. Choice of an appropriate nutritive sweetener or a combination of nutritive sweeteners is extremely important in the formulation of sweet food products. Desirable sensory qualities of color, texture, flavor and appearance of food products depend on the functionality of the sweetener system. Besides impacting sweetness perception, nutritive sweeteners have the ability to dial texture from a hard candy glass to a chewy caramel depending on their solubility and crystallization characteristics.

Sucrose

Sucrose, commonly known as sugar, is one of the most important primary ingredients in confectionery products. Besides delivering a pleasant sweet perception, sucrose contributes to the body, texture, mouthfeel, appearance and shelf life of the finished product. Solubility of sucrose is 67 percent (w/w) in water at room temperature. The crystallization characteristics of sucrose are often modified by combining it with corn syrups, fructose, proteins and fats to develop a wide variety of confections such as hard candies, caramels, fudge, jellies and nougats. ➤