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Sugar alcohols: A review

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Abstract : Sugar alcohols are extensively used as sweetening agents. They sometimes possess advantages over the parent sugars in sweetness, caloric reduction and non-cariogenicity. The physical status of carbohydrates in food and confectionery affects both the properties of the product during production and the quality of the final product. Sugar alcohols, such as xylitol, mannitol, sorbitol, and erythritol are emerging food ingredients that provide similar or better sweetness/sensory properties of sucrose, but are less calorigenic. Also, sugar alcohols can be converted into commodity chemicals through chemical catalysis. Biotechnological production offers the safe and sustainable supply of sugar alcohols from renewable biomass. These compounds are usually produced by a catalytic hydrogenation of carbohydrates, but they can be also found in nature in fruits, vegetables or mushrooms as well as in human organism. Due to their properties, sugar alcohols are widely used in food, beverage, confectionery and pharmaceutical industries throughout the world. They have found use as bulk sweeteners that promote dental health and exert prebiotic effect. They are added to foods as alternative sweeteners what might be helpful in the control of calories intake. Consumption of low-calorie foods by the worldwide population has dramatically increased, as well as health concerns associated with the consequent high intake of sweeteners.
Key words: Sugar alcohols, low-calorie, Sugar-free products, sweetener.

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