

## **Food additives - sweeteners**

**Authors: Bivol Dorina  
Sărătură Anastasia  
Ling. cons: L. Plămădeală**

*The following work relates to food additives which play a vital role in today's bountiful and nutritious food supply, in special sweeteners due to their beneficial effects for diabetes mellitus, tooth decay and diarrhea.*

Additives have been used for many years to preserve, flavor, blend, thicken and color foods, and have played an important role in reducing serious nutritional deficiencies. Additives help assure the availability of wholesome, appetizing and affordable foods that meet consumer demands from season to season.

The additives are used in foods to improve the taste or appearance of a processed food; improve the keeping quality or stability of a food.

Sweeteners are added to foods for flavoring. Sweeteners other than sugar are added to keep the food energy (calories) [1] low, and because they have beneficial effects for diabetes mellitus and tooth decay and diarrhea. A sugar substitute is a food additive that duplicates the effect of sugar in taste, but usually has less food energy. Some sugar substitutes are natural and some are synthetic. Those that are not natural are, in general, referred to artificial sweeteners [2].

The majority of sugar substitutes approved for food use are artificially-synthesized compounds. However, some bulk natural sugar substitutes are known, including sorbitol and xylitol, which are found in berries, fruit, vegetables, and mushrooms.

Sugar substitutes are used for a number of reasons including:

- replace high-energy sugar or corn syrup with other sweeteners having little or no food energy. This allows people to eat the same foods they normally would, while allowing them to lose

weight and avoid other problems associated with excessive caloric intake.

- dental care — sugar substitutes are tooth friendly, as they are not fermented by the micro flora of the dental plaque.
- diabetes mellitus — people with diabetes have difficulty regulating their blood sugar levels. By limiting their sugar intake with artificial sweeteners, they can enjoy a varied diet while closely controlling their sugar intake. Also, some sugar substitutes do release energy, but are metabolized more slowly, allowing blood sugar levels to remain more stable over time.

There are five intensely-sweet sugar substitutes which have been approved for use. They are saccharin, aspartame [3], sucralose, neotame, and acesulfame potassium. There is also a herbal supplement, stevia, used as a sweetener.

Some artificial food additives have been linked with cancer, digestive problems, and neurological conditions such as ADD, or diseases like heart disease or obesity. Even "natural" additives may be harmful, whether because of overuse (for example table salt) or because of natural toxicity.

Today, food and color additives are more strictly regulated than at any time in history. Federal regulations require evidence that each substance is safe at its intended levels of use may be added to foods. All additives are subject to ongoing safety review as scientific understanding and methods of its testing continue to improve.

### **Bibliography:**

1. Swithers SE, Davidson, *A role for sweet taste: caloric predictive relations in energy regulation by rats*, 2008, p.161.
2. Marcel Dekker, Owen R., *Food chemistry*, 1996, p 827.
3. Soffritti M., Belpoggi F., Degli Esposti D., *First experimental demonstration of the multipotential carcinogenic effects of aspartame administered in the feed to Sprague-Dawley rats*, 2006, p. 379–85.