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26. Ingredients in functional confectionery

Volodymyr Bohun

National University of Food Technologies

Introduction. Enjoyment with a healthy additive is nowadays more in demand than ever before. There is a strong trend in confectionery towards functional products. The explosion of functional products is due to many factors, but particularly the influence of nutritionists on the consumer, and a better understanding of the benefits, either real or perceived, of nutritional additives — antioxidants, vitamins, herbs and the balance of carbohydrates, proteins and fats in our diet. The most dramatic example of this is the Atkins diet, with its concentration on high protein intake, moderate fat and low carbohydrates, leading to a whole range of low-impact carb products from beer to candy. The interest in functional products is also fuelled, unfortunately, by the alarming expansion of junior diabetes in all over the world, coupled with the obesity problem now being experienced.

The new segment of functional confectionery is developing strongly. Historically this category has roots in typical cough & cold and sore throat remedies, but confectioneries are by no means limited to these and are currently looking to improve their image. Confectioneries are still often criticized as unhealthy products, requiring special marketing strategies. Benefits out of the botanical kingdom, when added to confectioneries, open up new opportunities here as they do in functional foods in general.

Herbs in particular are of rising importance to the confectionery industry. They have been used traditionally in throat-soothing candies and sweets for decades. Herbs add flavor to all food forms, including confectionery, and with their healthy image, they can also be considered "trendy" ingredients. Plus, their proven effectiveness can, in sufficient quantities, even add a medical function to a confectionery product. The use of herbs in confectionery products range from throat, cough and sinus remedies, to digestive, dental/gum care and immune stimulation products. In addition, newly discovered benefits of traditional ingredients, such as the antioxidant power of the flavanols contained in chocolate, increase consumer appeal and move the segment away from its image of guilty indulgence and unhealthy calories.

Many botanicals are used in food mostly to add different flavors. But that is not the only reason. Many spices have been known for their medicinal uses for hundreds of years, so it is not surprising that these usages are being confirmed by modern science. Spices such as ginger, chili and garlic have been used as main or sole constituents of drugs for some years now, and while confectionery products containing garlic may be somewhat rare, they do exist as ginger or chili blended with chocolate.

Other culinary herbs combine taste with functionality, such as mint, sage, thyme, rosemary, cumin, anise, fennel, coriander and the aforementioned ginger; they all have some in vitro anticancer effects. Herbs like rosemary, sage, oregano, thyme, onions and garlic act as antioxidants and protect from LDL oxidation, reducing the risk for cardiovascular disease. Lemongrass, fenugreek, linseed and garlic help lower cholesterol, and ginger helps fight motion sickness.

These are just a few examples of the many known benefits to be derived from herbs. In confectioneries, they can fulfill a number of function, ranging from energy/stimulation to mental/physical performance to oral and throat health. Many of the ingredients currently used in functional drinks are increasingly being scouted for functional confectionery products. Apart from vitamins and minerals used in fortified sweets and jellies, there are dietary fibers (beta-glucan, inulin, cellulose, galactomannan), soy protein and isoflavones, botanical extracts (caffeine, green tea) fruits and vegetables, and even probiotic bacteria, just to name a few.

Some of the so-called "superfruits" used in functional confectionery products include cranberries (*Vaccinium macrocarpon*), which not only boasts high vitamin C content, but also contains omega 3 fatty acids and antioxidants in the form of proanthocyanidins and flavanoids. Cranberries are often used in snack bars and energy bars, as they add a pleasantly sour taste. Other superfruits include acai, acerola, mangosteen, goji, jabotacaba and passionfruit.

Apart from those ingredients already mentioned, natural sugar replacement substances such as xylitol and maltitol are very popular in the large sugar-free segment of the functional confectionery market, especially in chewing gum where xylitol adds the health benefit of prevention of tooth decay. There are also some legacies from the dietary supplement arena, such as CoQ10, folic acid, zinc gluconate and lycopene, which have found their way into functional confectionery products. For the manufacture of functional confectionery products, adding highly concentrated compounds of functional ingredients at

the end of the cooking process has been particularly effective. As far as flavors are concerned, there is a move toward the exotic flavors of tropical fruit, since they are associated as being superfruits in consumers' minds.

Conclusions. The functional confectionery segment is one with strong potential. Since the idea of adding ingredients with tangible benefits has already been brought to consumers' attention through functional foods in general, functional confectionery products do not require strong consumer education. Thus, the market is ripe for more innovative products. However, it remains to be seen how the new European health claim directive--which requires products to state the amounts of potentially unhealthy ingredients on products claiming health benefits--will affect the functional confectionery market in future.

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Scientific supervisor: Olena Kokhan.