

Summary

Isotonic drinks based on selected plant materials as a product innovation on the functional drinks market

The growing interest of modern customer in his own health, and thus also physical activity and proper nutrition, as well as the growing awareness of consumers are a challenge for food producers. Consumers are more and more interested in natural and health-promoting beverages, to which modern producers respond by offering drinks containing various plant materials. However, there is a limited number of beverages on the Polish market, and an example of the existing gap in the assortment is the lack of isotonic beverages based on plant materials, especially local ones.

Interest in beverages is also shown by world scientists who undertake research on the subject of functional drinks. However, the issue of isotonic drinks based on plant materials was of interest to individuals, and research work often concerned plant materials of foreign origin.

The above aspects indicated the existing research gap and justified conducting research aimed at the development of isotonic drinks based on plant materials containing biologically active substances and the analysis of consumer interest in such drinks. Four research hypotheses were adopted:

- Hypothesis I: There is a demand on the market for isotonic drinks based on plant materials.
- Hypothesis II: Selected local plant materials can be used in the preparation of isotonic drinks base.
- Hypothesis III: The plant material used to prepare the base of the isotonic drink increases the functional potential of the drink.
- Hypothesis IV: The use of plant materials as the base of an isotonic drink determines its acceptance by consumers.

The study consisted six stages in which various methods were used. Parts of the research procedure were as follows: a survey of opinions, attitudes and behaviour of consumers of isotonic drinks, an assessment of the physicochemical properties of water extracts from plant materials, juices and prototype drinks, an analysis of the sensory quality of the created innovative isotonic drinks, physicochemical tests of key parameters determining the quality of isotonic drinks and their potential effect pro-

health, as well as the assessment of consumer acceptance of the developed beverages.

It has been observed that the consumer is interested in isotonic drinks based on natural ingredients and colourings, in particular based on fruit juices, tea and well-known herbs and flowers. It has been shown that it is possible to use plant materials, including local ones, to produce beverages based on them. It has been confirmed that the use of plant materials as the base of the drink increases its health-promoting potential through increased antioxidant activity. It was shown that isotonic drinks based on peppermint infusion and apple juice were acceptable by potential consumers, with the latter being accepted by consumers only after obtaining information on its composition. At the same time, it was found that the consumer in choosing an isotonic drink and its acceptance is guided mainly by the sensory quality of the product, and the information on the use of plant material did not have a relatively large impact on the general acceptance of innovative isotonic drinks. Conducted research also allowed to obtain two prognostic models with practical application (a model of consumer behaviour and a model of acceptance of isotonic drinks).

The presented results and their analysis have an application value. They can be valuable knowledge for producers of isotonic drinks and can be used to effectively manage the product and undertake appropriate marketing and sales activities. In addition, they can be valuable in the context of creating beverages with the right osmolality and organoleptic quality.