

Abstract

Plant-based food alternatives are a broad group of products that are intended to replace animal foods both nutritionally and sensorially. At the moment, the Czech market offers plant-based alternatives mainly for milk, cheese, and meat. A major potential risk of substituting milk, cheese, and meat that is often not recognised by the general population is the deficiency of certain nutrients, vitamins, and minerals.

The aim of the thesis is to deepen the existing knowledge on the problem of substitution of animal foods by their plant alternatives in the context of the Czech population and the local market. The thesis maps and characterizes plant alternatives for milk, cheese, and meat and presents nutritional evaluation and sensory analysis of selected samples of these foods. The analysis of diets obtained from individuals consuming plant-based alternatives and those eating a rational diet shows how effectively (i.e., in terms of macronutrient intake, calcium, and dietary diversity) individuals implement these foods in their diets or conversely what deficiencies this decision may bring. The questionnaire survey examines the general public's awareness of plant-based alternatives and the role of these foods in the Czech diet. The results from the questionnaire are compared with the results from the dietary assessment and sensory analysis.

It is found that the public is aware of the range of plant-based alternatives but is not fully aware of the importance of certain nutrients for optimal body function or the fortification process of plant-based alternatives. A higher proportion of plant-based alternatives may carry the risk of deficiencies in quality proteins, minerals, and vitamins. It appears that plant-based food alternatives differ significantly in composition and nutritional value from animal-based foods. At the expense of a higher additive content, manufacturers have attempted to develop plant-based alternatives that are closer to the sensory and structural characteristics of animal products, but these products can be considered more like highly industrially processed foods on the basis of their composition. The sensory attributes of plant-based food alternatives are considered by respondents to be rather inferior. For healthy individuals eating a rational diet, plant-based alternatives should be perceived more as a dietary diversification but cannot be seen as a full replacement for animal foods.

In this respect, further education should be provided to highlight the possible nutritional risks that may arise from the exclusion of animal foods, such as deficiencies of certain nutrients, especially protein, minerals, including calcium and iron, and vitamins, especially vitamin D and B12.

Key words: plant-based alternatives, plant-based milk alternative, plant-based cheese alternative, plant-based meat alternative, plant-based diet