

Meat products and their vegetable analogues on the Polish market: nutritional value and price

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Objectives: Plant analogues of meat products have found their place in the countries of Central and Eastern Europe. In Poland, even the producers of processed meats already put on market plant analogues of many meat products. This is due to the growing demand on such food products. An increasing number of Poles, limit or even give up eating meat. The growing number of people on a vegetarian diet, as well as the popularization in the media of this style of eating and describing it as 'healthy' and 'pro-environmental', have certainly contributed to the boom in this market. The aim of this study was to compare some meat products and their vegetable analogues, available on the Polish market, in terms of selected determinants of nutritional value and raw material composition.

Materials and Methods: The presented results were prepared on the basis of information contained on the labels of over 60 meat products and their vegetable analogues produced in Poland. The evaluated products were divided into assortment groups based on the manufacturer's declaration or the name used, e.g. vegetable sausages were included in the group of homogenized products, and vegetable kabanos sausages in the group of medium comminuted products. However, it should be emphasized that the division of plant products into product groups should be treated very conventionally. The division of cold meats was quite easy, as the producers declared the assortment group on the product labels. Information on the nutritional value and composition of products available in Polish supermarkets and online stores was analyzed.

Results and Discussion: On the basis of the obtained results, it was assumed that the recipe composition of plant-based analogues of meat products was composed in such a way that these products could be targeted at a diverse group of consumers. Therefore, such products could be addressed not only to vegetarians and vegans, but also to people avoiding soy or gluten in food. An example of this can be vegetable analogues of meat products with egg white. Instead of meat, but also egg white or other animal components, plant sources of protein were used, mainly soy and wheat, but also peas, beans and lentils. The most popular sources of protein in 'non-meat' products were soybeans and wheat, and in meat products - pork and poultry. The percentage of protein in vegetable analogues of meat products varied from a few to a dozen or so percent. The highest protein content (maximum about 30%) was found in products classified as 'sausages, kabanos sausages and finely ground sausages'. The protein content in the products was the higher, the more protein sources were present in the raw material composition. The meat products were also found to be more fat but contained significantly less carbohydrates than their plant analogs. This seems to be fully understandable, as vegetable meat substitutes contain very little fat (it is added, for example, as an oil), and in the case of meat products, fat is a constituent permanently bound to the meat. The opposite was true for carbohydrates. The table salt content declared by the producers on the labels showed a tendency of higher salt content in meat products than in vegetable products belonging to the same product segment. This may be due to the usual salt content of sausages of about 2%. Vegetable analogues of meat products, on the other hand, were a source of fiber, which, for obvious reasons, cannot be said about meat products. The price for 1 kg of non-meat products was higher than for meat products from the same assortment group. This could be due to the fact that these products are targeted at a strictly defined group of consumers who are ready to pay more for certain food products that they are looking for on the market. Additional information has been provided on the packaging of some plant-based products in order to emphasize their advantages and properties. Most likely, it was supposed to attract the attention of a potential buyer by distinguishing a given article from other, apparently similar. In the case of plant-based foods, producers' declarations most often referred to the absence of gluten and soy, the declaration of a given assortment as a source of protein, fiber, vitamin B12 and iron, the absence of artificial colors, phosphates, preservatives, monosodium glutamate and other substances negatively perceived by many consumers. Moreover, the vast majority of the tested products bear the "bio" label. There were few such declarations on the packages of meat products.

Conclusions: Vegetable analogues of meat products differ significantly from their meat counterparts, which is due to a different raw materials used. Moreover, they are more expensive. Despite the fact that plant products that mimic meat products are visually very similar to them, the question arises: Do their names have to be taken from the meat industry?

Key words: Meat products, Nutritional value, Recipe composition, Vegetable analogues of meat products