Abstract

The presented bachelor thesis deals with the issue of increasingly popular plant-based alternatives to cow's milk. The practical part focuses on the nutritional and sensory evaluation of beverages derived from oat grain.

The theoretical part describes the different plant raw materials from which they are produced. It compares them from a nutritional point of view, describes the possible occurrence of anti-nutritional substances and their effects on the human organism. Subsequently, the thesis compares plant drinks with the parameters of cow's milk.

In the practical part, 10 samples of oat drinks were analysed using the following methods: gravimetry for the determination of dry matter content, liquid-liquid extraction (LLE) for the determination of fat and Kjeldahl method for the determination of crude protein content. In order to obtain the necessary data, the ash content after the samples were ashed in a muffle furnace was determined gravimetrically and the carbohydrates were determined by calculation. The fatty acid content was determined by gas chromatography with flame ionization detector (GC/FID). Finally, a sensory profile evaluation method was performed. The results were then compared and discussed with previously published data.

The analysed oat drinks contained approximately the same amount of essential nutrients. However, the protein content was significantly lower compared to cow's milk. The samples showed a great variability in the content of sugars, resulting from the fermentation of oats, and in the content of calcium, vitamin D, B_2 and B_{12}, with which some samples were enriched. Except for the instant oat drink, the fatty acid composition of the oat drinks was nutritionally more favourable compared to milk fat, with a high proportion of unsaturated fatty acids.

Keywords: vegetable beverages, oat beverage composition, antinutrients, fatty acids, sensory profile