Abstract AJ

Acrylamide belongs to the group of process contaminants originating in foods with a high carbohydrate content during the heat process, as baking, frying, grilling, etc. For people industrially producing acrylamide neurotoxic and according to IARC is classified probably as human carcinogen. Acrylamide which is occurred in foods, probably makes up 1/3 of daily energy supply. The Bachelor thesis tries to give a comprehensive overview in the theoretical part information about Acrylamide – a description of its physical and chemical character, possibility of its industrial use, possibility of its exposure and dietary intake, information on its toxicity, occurrence and incidence in foods, the way of its elimination and finally its possibility of analytical determination. In the laboratory, the amount of acrylamide was determined by the LC/MS method in selected foods. Of the 42 samples, acrylamide was not detected in 2 samples of extruded breakfast cereals. The lowest content of acrylamide was determined in extruded breakfast cereals (45 μg.kg⁻¹), roasted muesli and cornflakes. The amount of acrylamide in these commodities ranged from 45–279 μg.kg⁻¹. Average values Acrylamide were contained in biscuits. The highest values were measured for potato chips and corn popcorn, from 83 to 1550 μg.kg⁻¹ and 433 μg.kg⁻¹ to 1410 μg.kg⁻¹ respectively. 11 products, from group of potato chips, maize popcorn and biscuits exceeded recommendation values of Acrylamide by the Commission (2013/647/EU). For people is exposure by acrylamide inevitable and it does not exist yet confirmation of carcinogenicity to humans, but there is some recommendation how to reduce the risk food with high Acrylamide and choose more gentle cooking.