


Abstract

Gluten Content of Gluten Free Products Marketed in Serbia †

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Abstract: Celiac disease is a systemic autoimmune disease that occurs in genetically predisposed individuals and means a lifelong intolerance to gluten, which is found in wheat, barley, rye and oats, and leads to inflammatory changes in the lining of the small intestine. This is not a rare disease; it occurs in about 1% of the population. Recently, there has been a noticeable increase in the number and assortment of gluten free foods, which is marked with a crossed grain symbol or “gluten free” wording. The labeling, presentation and content of gluten in food intended for people intolerant to gluten is prescribed by the EU Regulation 828/2014 which has been harmonized in Serbian regulation. Gluten content not exceeding 20 mg/kg or 100 mg/kg justifies “gluten free” and “very low gluten” claims, respectively. The aim of this study was to assess gluten content in grain-based “gluten free” foods. Sixty samples of various grain-based food products (flour, bread, pasta, breakfast cereals and snacks, mainly made from corn, rice, buckwheat and millet) were analyzed using a commercially available sandwich ELISA test RIDASCREEN® Gliadin (R-Biopharm AG, Darmstadt, Germany). Gluten was not detected (<5.0 mg/kg) in 75% of the samples, 10% had gluten content up to 20 mg/kg, while 8% slightly exceeded the limit for gluten free products (22.0–24.0 mg/kg), which could be tolerated taking into account measurement uncertainty. One flour (52.0 mg/kg), one snack (58.0 mg/kg) and one pasta sample (96.6 mg/kg) had gluten concentrations at the levels requiring “low gluten content” product labeling instead of “gluten free” displayed on their packages. Furthermore, one snack product reached 196 mg/kg of gluten. The labeled composition of this product did not indicate the presence of raw materials that are natural sources of gluten. If true, this implicates cross contamination. The presented results indicate that there is a need for continuous education and rise of awareness among producers of gluten free food as well as improved efficiency of market control. Although the restaurants that offer a gluten free menu are nowadays a rarity in Serbia, they too should be included in control programs.

Keywords: celiac disease; gluten free; ELISA



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