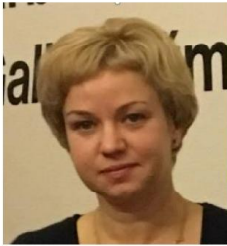




**Vijolė Bradauskienė** is a PhD student at Kaunas University of Technology. Her doctoral research topics: Establishment of a biological method for the elimination / reduction of the immunogenicity of wheat (*Triticum aestivum*) in by-products of wheat processing, assessment of the properties of gluten-free products and their adaptation to personalized diets. She is a lecturer at Klaipėda State University of Applied Sciences and Head of Food technology department. Her scientific research areas: implementation of innovative technologies in the food industry in and catering business; manufacturing of health-friendly and functional products; measurement of the product nutritional value and marking; Feasibilities on Further Use of Waste from Food Production. During the period of last five years she published 3 international scientific articles and 1 textbooks for the students of higher education institutions.

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**Vitalija Freitakaitė** is a lecturer at Klaipėda State University of Applied Sciences. Her scientific interests focus on the research biologically active substances in germinating seeds, how their nutritional and biological value increases and the chemical composition improves during sprouting, analyses the impact of sprouted seed conservation methods. She participated in several national research projects aiming to functional food: how to add variety to the diet. During the period of last three years she published 1 national scientific article.

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## **Biological Value of By-Products from Fractionation of Wheat (*Triticum aestivum* L.) and the Possibility of Using them for Gluten-Free Products**

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**Background.** There is a growing number of consumers who are intolerant to gluten and are defined as coeliac disease sufferers. Effective preventative measure and/or treatment is a gluten-free diet, which greatly limits the patients' diet. Nutrition therapy for coeliac disease has centred around food allowed/not allowed on a gluten-free diet. The diet must be not only free of gluten but also healthy in order to avoid nutrient, vitamins and minerals deficiencies or excess (Singh, 2017). For this purpose, it is necessary to select raw materials without gluten or to remove effectively gluten from the raw materials.

**Aim.** To distinguish biological value of by-products from fractionation of wheat into starch and gluten, to identify them and to analyze the possibilities of using them in gluten-free products.

**Methods.** Total protein content in wheat by-products determined by Kjeldahl method. The proteins were characterized by sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS–PAGE). Determinations of the content of mineral components in wheat grain were conducted after dry mineralization of the samples. Measurements were carried out with Atomic Absorption Spectrometry, with excitation in acetylene-air flame in a UNICAM 939 apparatus. Gluten epitopes in wheat by-products monitored using strategies based on combined immunoassays with T cells from celiacs, G12-antibody ELISA.

**Results.** The protein content of the bran was found to be 16.80%. Albumin and glutelin are the major fractions of wheat bran proteins. The molecular weights of albumins and