

## GLUTEN-FREE PRODUCT INNOVATION WITHOUT USE OF ANY FOOD ADDITIVES

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### Abstract

Celiac disease is one of the most common metabolic disorders. Patients suffering from celiac disease have a limited intake of nutritionally and sensory valuable foods. On the other side, due to the absence of gluten in this kind of food there is found very often high representation of artificial food additives in order to replace gluten technological properties. The aim of this work was to design innovative gluten-free muesli bars, with no food additive use, sensory and nutritionally valuable, in terms of high protein and fiber content, no addition of sugar and labelled by approved nutrition claims.

The muesli products were prepared from three types of gluten-free flakes, namely oats, rice and buckwheat and using of raw materials such as mixture of nuts, seeds, lyophilized fruit, mango puree and oligofructose, together, represented by 13 variants of samples (standard sample included). Prepared products were assessed by texturometric analysis and sensory evaluation (panel test). We analyzed the texture of all gluten-free bars by the TA.XT Plus texturometer (Stable Micro Systems, Surrey, Great Britain).

Sensory analysis showed, that sample consisting of oatmeal, a mixture of nuts and oligofructose was the most acceptable by trained evaluators. The use of nuts in the preparation of muesli bars showed good textural and taste properties. The worst rated were bars prepared from rice flakes. The sample prepared from rice flakes, a mixture of nuts and oligofructose showed the highest firmness that is undesirable from consumer point of view. We can confirm the use of three nutritional claims on all designed gluten free products for protein content, high fiber and with no added sugars are by the appropriate EU regulatives.

Due to the lack of quality products for celiacs on the market, we recommend designed additive free samples prepared from oatmeal and buckwheat flakes to producers in order to expand the range of quality products for people with gluten-free diet in the future.

**Key words:** *Celiac disease, Gluten-free food, Muesli bars, Texture analysis, Sensory analysis, Food additives.*