

CELIAC DISEASE - NATIONAL CONCERNS

R. Siminiuc

Technical University of Moldova

INTRODUCTION

Coeliac disease is a pathology caused by permanent intolerance to gluten, a lipoprotein substance composed of two types of protein glutelin and prolamin. Gluten is contained in essential quantities in: wheat, barley, rye and other cereals, that's why is present in many common alimentary foods such as bread, biscuits, pasta and more.

Normally, the nutrients in food are absorbed into the bloodstream through the cells on the villi. When the villi become atrophied, there is less surface area for nutrient absorption, and a condition known as malabsorption results. Consequences of malabsorption include vitamin and mineral deficiencies, osteoporosis and other problems [1].

1. PREVALENCE OF COELIAC DISEASE

Currently there an increasing incidence of celiac disease , which reaches an average 1% of the population, being highest in the following countries: Irland-1:122, USA-1:133, Sarawi (located in West of Sahara) -1:180, Mexic -1:183 and more.(Tab.1)

Tabelul 1. Incidence of coeliac disease.

<i>Country</i>	<i>Incidence</i>	<i>Country</i>	<i>Incidence</i>
<i>Ireland</i>	<i>1:122</i>	<i>Oland</i>	<i>1:198</i>
<i>Finland</i>	<i>1:130</i>	<i>Sweden</i>	<i>1:205</i>
<i>U.S.A</i>	<i>1:133</i>	<i>Australia</i>	<i>1:251</i>
<i>Argentina</i>	<i>1:167</i>	<i>Italy</i>	<i>1:328</i>
<i>Sahara</i>	<i>1:180</i>	<i>Spain</i>	<i>1:389</i>
<i>Brazil</i>	<i>1:183</i>	<i>RM</i>	<i>1:670</i>

Source: www.coeliac.org.uk

In Republic of Moldova according to data provided by Mr. Ion Mihiu, habilitat doctor, university professor, and department head of Gastroenterology of Scientific Research Institutions

in the Mother and Child Health prevalence of celiac disease is 1:670, and the number of diagnosed persons is just a part of the top of iceberg. Presently, the only treatment for celiac disease is life-long adherence to a strict gluten-free diet: Untreated celiac disease puts patients at risk for serious complications.

2. CONCERNS VIS-A VIS OF COELIAC DISEASE

Developing functional foods which, in addition to nutrients has good specific actions to human body is one of priority directions of development in science and food technology. Preventive and therapeutic role of food is currently of great importance in the developed world with high research potential.

In European countries are based and work celiac associations and specialized centers, where patients and interested persons may receive information for symptomatic, prevention, treatment of this disease, which actually consists of a gluten free diet.

In Italy, restaurants and cafes, for example, are required by the Ministry of Health to offer to consumers with celiac disease free-gluten food to order. Also, are opened restaurants specialized for celiac people. State, monthly offers cash rewards to people with this disease [2].

Despite the Republic of Moldova Government Decision no. 1260 of October 17, 2003, to coeliac people is granted disability grade 2. In country so far there is no national association for celiac disease, there is no an organized environment for this type of patient [3]. There are no places where are gluten-free menus. People with gluten intolerance feel frustrated, because they have a specific diet and because of limited assortment of gluten-free products that offers alimentary industry.

There are no free-gluten local products, and the import market of these products is selective. High price for these products creates

difficulties in complying with a proper diet of this disease.

For example, 100 g gluten-free biscuits of import sold in some supermarkets in Chisinau celiac must pay 30 lei, and for 400g of bread-60lei.

To obtain gluten-free products required use of certain ingredients; this must be of gluten-free, resulting difficulties in obtaining a suitable product.

Gluten-free products manufacturing process be adapted / modified, formulation should be established with ingredients to compensate for the

lack of gluten, and obtained products to be similar to a common product in terms of sensory and physicochemical characteristics. The technology of gluten testing continues to develop and recent advances mean that tests are becoming much more sensitive [5].

The recommended method of analysis, approved by the Codex Committee on Methodology, Sampling and Analysis (CCMAS) is the R5-sandwich ELISA (Mendez method). Gluten-free foodstuffs must contain less than 20 mg/kg of gluten in the finished product. This specific labeling applies to all foodstuffs. [6]

Design, development and production of gluten-free foods come from research not from industry, because investment in manufacturing lines separated from the wheat panification are too big and market demand is lower, products are made only to a segment of the population.

In the context of the exposed concern about celiac disease, both in its medical aspects and to ensure an adequate diet and tendering of gluten-free foods for this category of people is necessary.

Sorghum *Oryzoidum* or soryz is a relatively new cereal of hybrid origin obtained at the Research Institute for Maize and Sorghum from Moldova, with great possibilities of recovery in human nutrition.

At the Technical University of Moldova have been developed in soriz products for people suffering from gluten intolerance and malabsorption, and healthy persons, which will allow exploitation of local resources in functional aliments with curative role.

It was demonstrated the possibility and opportunity of using soriz grains and derived of soriz grains at obtaining : a large range of preparates for public alimentation units based on native soriz beans and hulled soriz grains a range of gluten-free pastries and consumer based on soriz flour such as gluten-free biscuits, gluten-free sponge cake and more.

CONCLUZIONI

The number of people suffering from celiac disease or intolerance to wheat protein (gluten) and diseases associated with digestive and metabolic disorders is increasing. Increasing food security appears as a major need in the context of increasing life expectancy, number of population of elderly and health care expenditures. Therefore, research on expanding the assortment of gluten-free cereals in the nutrition of people, especially suffering from gluten intolerance are present. This direction corresponds to the World Health Organization recommendations for wider use of food in strengthening the public health potential.

References:

1. **Tranfaglia T.** *Celiachia, intolleranze, allergie alimentari.* // *Macro Edizioni*, pag. 321...332 , 2003.
2. **Michieletto N.** *Con la collaborazione de AIC. Senza glutine. Cucina naturale per celiaci.*// *Tecniche Nuove* , Milano, pag. 5...19...33, 2000.
3. *Associazione italiana per celiachia. Cucinare senza glutine. Ricettario per celiaci* // *Giunti Demetra, Italia*, pag. 4...19, 2004.
4. **Gallagher E., Gornley T., Arendt E.** *Recent advances is the formulation of gluten-free cerea-based products.* // *Trends in Food Science & Tehnology* 15 pag.143-152, 2004.
5. **Duță, D., Ghencea S., Belc N.** *Tehnologii adaptate pentru obținerea produselor făinoase aglutenice*, *Institutul de bioresurse alimentare* , București, 2008.
6. **www.coeliac.org.uk** *Testing your products for gluten*