

# The GlutenFree Project



## Tasty and healthy gluten free bakery products and pasta

The overall objective of the project was to provide small and medium sized enterprises with the knowledge and capability to produce gluten-free bakery products and pasta with high consumer acceptance and thus enable them to access lucrative new market sectors. To reach this objective, the research was divided into the following key areas: (i) development of functional protein products with specific viscoelastic properties; (ii) identification of new ingredients for the development of high quality gluten-free bakery products and pasta; (iii) improvement of the fermentation efficiency of sourdoughs; (iv) improvement of the texture and quality of gluten-free baked goods and pasta; (v) improvement of the aroma profile of new products and (vi) assessment of consumer acceptance.

## CyberColloids role in the project

CyberColloids participated in the project as an SME partner. We were responsible for the identification and sourcing of suitable functional ingredients including hydrocolloids for the replacement of gluten based ingredients and for providing technical support in this area. Through the project, we were able to improve our understanding of the use of food gums in bakery products and also to develop gluten free bakery model food systems. Thus, strengthening our capability and service offering in this area.



The GlutenFree project consortium was made up of 9 research and industry partners - full details can be found on the project website

<http://www.glutenfree-project.eu>

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# Summary of project findings

Common problems of commercially available gluten-free bread products include: high starch and low fibre content; reduced shelf life; off-flavours and dense, crumbly and dry texture. For pasta products they include: low protein and fibre content; texture issues such as reduced elasticity; non acceptable colour and increased cooking losses. The GlutenFree project carried out a full work programme that addressed these issues both from a supply and demand perspective.

The project generated information on the technical and sensory attributes of seven different gluten free flours (teff, rice, sorghum, maize, quinoa, buckwheat & oat) and a range of other ingredients (proteins, hydrocolloids and fibres) used to provide technical functionality. These were benchmarked against standard gluten containing flours and market comparators. The information gained was used to develop a range of new, improved formulations for gluten free breads and pasta products.

Scaled up production of a range of prototype food was carried out in collaboration with the industry partners for the purposes of a consumer acceptance study. The results of this study indicated high consumer acceptance of some breads (particularly oat and linseed bread) but also the need for further improvements in other bread products, especially pizza bases.

Most of the spaghetti prototypes were well accepted by consumers, with one product favourably compared with a gluten-free market leader. This product has since been commercialised by a pasta producer.



## For more detail see:

- [http://cordis.europa.eu/result/rcn/56364\\_en.html](http://cordis.europa.eu/result/rcn/56364_en.html)
- Arendt et al 2011. Microbial cell factories 10 Suppl 1:S15
- Hager et al 2012a. Journal of Cereal Science 56:239-247
- Hager et al 2012b. European Food Research and Technology, 235(2):333-344
- Hager et al 2012c. Food Hydrocolloids 32(1):195–203.
- Hager et al 2012d. European Food Research and Technology, 235(5):861-871
- Wolter et al 2012 Food Microbiology 37C:44-50.
- Zannini et al 2012. Applied Microbiology and Biotechnology 93:473-48.