Bakery
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Barley bread has great potential but there are formulation challenges, say researchers

By Nathan Gray, 11-Dec-2012

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Barley has great potential to leach the charge in a new era or functional bread products, but more needs to be done in understanding the key formulation challenges, warn researchers.

The new review – published in *Trends in Food Science & Technology* – examined the use of barley and their beneficial beta-glucans in foods, and assessed the potential scope for their increased use in breads in the future.

"As barley is an excellent source of dietary fibre, and in particular the functional food ingredient beta-glucan, consumers have become more inclined to increase their utilisation of barley as a source of food," said the researchers, led by Dr Paul Sullivan from the University of Cork, Ireland.

However, Sullivan – who also works with Teagasc's Ashtown Food Research Centre – suggested that while barley has potential for use in baked bread products, more work is needed in understanding how to better formulate bakery products *"that offer consumer satisfaction whilst maximising the health promoting effects of barley."*

"Research has shown that the use of barley in the production of breads is not without its difficulties," said Sullivan and his colleagues. *"The inclusion of barley into bread products can lead to a significant decrease in the quality of the bread product, as the increased beta-glucan levels, although beneficial from a health perspective, are detrimental from a quality perspective."*

"More research is therefore required in order to fully exploit the potential of barley in order to maximise the health-promoting properties of barley-containing breads, while maintaining the quality of the bread in order it to be accepted by the consumer as a viable alternative to breads available on the market today."

Potential

The researchers said that a 'pandemic' in the prevalence of obesity in the Western world has lead to a considerable increase in research in wholegrain cereals, *"particularly those that have been shown to have high levels of beta-glucan such as barley."*

Much of this research, they added, has been dedicated to the effects of barley on health and its potential as a functional food, with research in recent years focussing on the development and improvement of barley-containing foods such as bread.

While these studies have shown promise for the use of barley in the production of bakery products such as breads, the research team notes that there are still several key challenges that face academics and industry members who are interested in producing healthy bakery goods using barley as the main constituent.

"These studies point to the addition of barley flour or beta-glucan to a good quality breadmaking wheat flour formulation can cause a decrease in the quality of breads, in particular bread volume," said the authors.

"These decreased quality parameters would appear to be the main stumbling block in the production of a viable barley-containing white bread," they said. *"If this quality deficit can be overcome, there would appear to be great potential for the development of a healthy barley-containing bread product."*

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