WE ARE MAKING WHITE BREAD HEALTHIER

DSW
DELIVERING SUSTAINABLE WHEAT

THE CHALLENGE

Government guidelines recommend that adults consume 30g of fibre daily, but most of us don't meet this daily target.

There is strong evidence that eating plenty of fibre is associated with a lower risk of heart disease, stroke, type 2 diabetes, bowel cancer, and obesity.

Replacing white bread with wholemeal is an easy way to increase our daily intake of fibre but 76 percent of the population choose white bread over wholemeal for its taste and texture.

With nearly 11 million loaves sold each day in Britain, if we could increase the fibre content of white bread without impacting its taste and texture, the diets of many could improve.

More than

90%

UK adults

don't eat enough fibre

OUR RESEARCH

Through our research we have identified the genes responsible for controlling dietary fibre content in white bread flour. A variety called Yumai-34 produces white flour with an unusually high fibre content. Using conventional breeding techniques, we crossed this high fibre trait into several wheat varieties which allowed us to identify where in the wheat genome the genes for high fibre are located. The white flour these plants produced had as much as twice the soluble dietary fibre content of traditional white flour and, importantly, there was no negative impact on bread baking quality or crop yield. Genetic markers have been developed so that plant breeders can select and breed for new elite wheat varieties that carry these high fibre genes.

SCAN FOR MORE INFO

ROTHAMSTED RESEARCH

John Innes Centre

University of BRISTOL

Quadram Institute
Science Health Food Innovation

IMPERIAL

ONGOING RESEARCH

We are now testing the hypothesis that regular consumption of bread made from the high fibre wheat improves gut and metabolic health. Our preliminary research has demonstrated that enhancing the fibre content of wheat leads to an increase in health-related gut microbiome activity and volunteers have enrolled in our clinical trial to assess metabolic health responses to our high fibre white bread. Preliminary results indicate a significant reduction in glycaemic response when volunteers consume the higher soluble fibre breads.

UKRI Biotechnology and Biological Sciences Research Council

DSW

The Delivering Sustainable Wheat research programme aims to address critical challenges in wheat health, yield, and production in order to safeguard the future of this vital crop.

It is a collaboration between the John Innes Centre, Rothamsted Research, Quadram Institute, and Earlham Institute, with the universities of Bristol, Lancaster, Leeds, Imperial College London, and Nottingham, NIAB, and NISD-UEA.

Part of the work described here was done in collaboration with colleagues in Hungary, France and Turkey.

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