**RRES Press Release 13/2/23 The results are in - gene edited wheat field trial delivers**

***Flour from new GE wheat line produces up to 45% less acrylamide***

The results of Europe’s first ever field trial of a gene edited (GE) variety of wheat have shown a significant reduction of the potential carcinogen acrylamide when the flour is baked.

The new wheat strain was gene-edited to lower the formation of asparagine in the wheat grains. When cooked, this amino acid is converted to acrylamide – a potential carcinogen that food processors are keen to control.

Levels of asparagine (acrylamide’s precursor) in the GE wheat were up to 50% lower than the control variety Cadenza. Once ground into flour and cooked, the amounts of acrylamide formed were also significantly reduced by up to 45%.

The field trail was an important step in determining whether the new GE wheat would be viable. Indoor trials under glass had proved successful, but only by planting out in experimental fields could the research team be sure that the new strain could deliver for farmers.

Prof Nigel Halford, who led the research said, “The study showed that gene editing to reduce asparagine concentration in the wheat grain works just as well in the field as under glass.”

“This is important because the availability of low acrylamide wheat could enable food businesses to comply with evolving regulations on the presence of acrylamide in food without costly changes to production lines or reductions in product quality. It could also have a significant impact on dietary acrylamide intake for consumers.”

“However, GE plants will only be developed for commercial use if the right regulatory framework is in place and breeders are confident that they will get a return on their investment in GE varieties,” he added

The results of the trial are timely as the Genetic Technology (Precision Breeding) Bill, which will make provision for the release and marketing of GE crops, is in the final stages of its passage through Parliament.

Publication

Raffan, S., Oddy, J., Mead, A., Barker, G., Curtis, T., Usher, S., Burt, C. and Halford, N.G. (2023), Field assessment of genome-edited, low asparagine wheat: Europe's first CRISPR wheat field trial. Plant Biotechnol. J. <https://doi.org/10.1111/pbi.14026>