

CRISPR gene-edited wheat with lower carcinogenic acrylamide levels when toasted greenlighted for UK field trials

Hertfordshire-based experiments will be the first field trials of CRISPR edited wheat anywhere in the UK or Europe.

The wheat has been edited to reduce levels of the naturally occurring amino acid, asparagine, which is converted to the carcinogenic processing contaminant, acrylamide, when bread is baked or toasted.

The ultimate aim of the project is to produce ultra-low asparagine, non-GM wheat, says project leader Professor Nigel Halford.

“Acrylamide has been a very serious problem for food manufacturers since being discovered in food in 2002. It causes cancer in rodents and is considered ‘probably carcinogenic’ for humans. It occurs in bread and increases substantially when the bread is toasted, but is also present in other wheat products and many crop-derived foods that are fried, baked, roasted or toasted.”

...

During development in the lab, researchers ‘knocked out’ the asparagine synthetase gene, TaASN2.

Asparagine concentrations in the grain of the edited plants were substantially reduced compared with un-edited plants, with one line showing a more than 90 % reduction, according to project scientist Dr Sarah Raffan.

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other ‘disruptive’ innovations. Subscribe to our newsletter.

[SIGN UP](#)

The plan is for a project of up to five years, ending in 2026, with plants being sown in September/October each year and harvested the following September.

[This is an excerpt. Read the original post here.](#)