

Precision breeding

What precision breeding is and its potential applications.

What is precision breeding?

Precision breeding is a way of changing the DNA of plants or animals in a precise way, using techniques including gene-editing. Gene-editing uses specialised enzymes to cut DNA at specific points. These changes must be equivalent to those that could have been made using traditional plant or animal breeding methods.

This makes precision breeding different to genetic modification. Genetic modification is when genes from one plant or animal species are inserted into another unrelated species in a way that is not possible using traditional breeding methods.

Precision breeding can have many practical applications for food production, by introducing desirable traits in crops and livestock that could otherwise take many years to develop. This could include improving the nutritional content of plants, or by making crops more resistant to disease.

Products developed from precision breeding in the UK

Currently there are no crops or animals resulting from precision breeding technology that have been authorised for sale as food or animal feed in the UK.

The Precision Breeding Act became law in England in March 2023. This is an England only Act, meaning that it has provided a new category for precision bred organisms to be authorised in England. In Wales, Scotland and Northern Ireland, these organisms will remain classified as genetically modified organisms.

The Act also creates powers for Ministers to set out how precision bred plants and animals for use in food and feed should be regulated in England.

Our role

As a result of this change in legislation, the FSA is developing a new authorisation framework to regulate the use of precision bred organisms in food and feed products in England.

This framework will consider any risk these organisms pose on a case-by-case basis and will ensure that all associated food safety risks are proportionately assessed, managed and communicated to Ministers to inform their decision on whether the organism is safe to be marketed for use in food and feed.

This means that we can be confident that all precision bred organisms will be safe for people to eat.

Precision bred products will only be authorised if they are judged:

- not to risk health
- not to mislead consumers

- not to have lower nutritional value than their traditionally bred counterparts

What happens next

We have launched a [public consultation](#) on proposals for the new framework in England for the regulation of precision bred organisms used for food and animal feed. Feedback is required by 8 January 2024.

Wales

The Act applies only to England. However, under UK Internal Market Act 2020 (UKIMA), foods/feeds containing authorised Precision Bred Organisms in England can be sold in Wales. The UKIMA does not apply to processing after sale. Any Precision Bred food/feed which is sold in Wales under UKIMA market access principles would, if further processed there, be subject to legislation regulating Genetically Modified Organisms (GMOs).