# England’s new Genetic Technology Act set to transform crop breeding and boost food security



**A New Era for Crop Science in England: The Precision Breeding Revolution**

England stands on the brink of a significant agricultural transformation, driven by the recently enacted Genetic Technology (Precision Breeding) Act 2023. This pivotal legislation is set to unlock the potential of innovative genetic techniques, including gene editing, revolutionising crop development. Expected innovations include high-yielding strawberries with extended shelf life, potatoes that grow in clusters and require significantly less land, and disease-resistant varieties of essential crops like tomatoes and sugar beet.

The journey to this legislative milestone has not been straightforward. Since the primary legislation was passed in March 2023, progress faced interruptions due to a General Election and a subsequent change in government. However, the recent publication of secondary legislation highlights the continued cross-party commitment to advancing agricultural innovation. If approved by both Houses of Parliament, these regulations will facilitate the commercial use of precision breeding techniques, with the first applications anticipated by autumn 2025.

This moment is historic—not simply because it marks a shift in policy, but because it reflects a long-overdue recognition that genetic innovation can enhance food security and sustainability. For more than 30 years, advancements in plant genetics have been held back by stringent regulations. Now, the scientific community is poised to harness techniques that allow for precise identification and selection of desirable traits without the cumbersome processes traditionally associated with crop breeding.

Research supports the assertion that precision bred crops are equivalent in safety and environmental impact to conventionally bred varieties. As interest in climate-resilient agriculture intensifies, the potential applications of these technologies resonate favourably with the public. A recent Ipsos poll highlighted that globally, over half of respondents endorse New Genomic Techniques (NGTs) for developing crops better adapted to climate challenges. This public sentiment could propel further acceptance and implementation of genetic technologies in Europe, particularly against the backdrop of a tightening global food security scenario.

The European Commission has recognised the necessity of modernising regulations to facilitate similar advancements within EU member states. Their recent communication, "A Vision for Agriculture and Food", advocates for biotechnological tools to enhance crop resilience and nutritional value. However, while England embraces this forward-thinking approach, challenges remain for other regions within the UK. Both Scotland and Wales have opted to adhere to EU guidelines, potentially hindering their local agricultural innovations, a sentiment echoed by scientists eager to leverage genetic technologies for their local economies.

The success observed in Argentina serves as a model for what adopting a more proportionate regulatory framework can achieve. Following their move to exempt gene-edited crops from stringent GMO regulations, Argentina has witnessed an explosion of research and development in the agricultural sector. This includes expanded applications across a variety of crops and traits, indicating that removing regulatory barriers allows for broader engagement and innovation.

In England, the early signs of a similar paradigm shift are evident. Since the introduction of streamlined arrangements for experimental trials of precision bred plants, there has been considerable interest from public sector researchers and small enterprises. With 23 notifications received encompassing various crop species, the landscape is rapidly evolving. The engagement from multiple sectors signals a promising future where smaller organisations contribute significantly to agricultural innovation.

As Mario Caccamo, chief executive of the UK crop science organisation NIAB, articulates, the Precision Breeding Act represents not just a policy advancement, but a commitment to democratise scientific innovation. By ensuring that access to advanced genetic techniques is not solely the domain of large corporations, there lies an opportunity to drive meaningful progress across diverse agricultural interests.

With the framework in place to exploit these technologies, the UK could lead a global charge towards more sustainable agricultural practices. As the clock ticks towards the anticipated launch of new applications, it’s crucial that all stakeholders—scientists, policymakers, and farmers—collaborate to harness this wave of innovation. The future of crop science in England is not just about increasing yields; it represents a broader movement towards resilience, sustainability, and equitable access to the benefits of modern science.

## Reference Map:

* Paragraph 1 – [[1]](https://news.google.com/rss/articles/CBMizwFBVV95cUxNNWdhTTk0RnI0X1k5LXJ5MVJ2ZExiU1ZjNjZFOThEMGJQWHpsRW5fLXBacy1nV3lhM0hqT1A5U0dXRkhJaXhURXYyd3Rta184eVU4NXNXd29xQUY0bFZQdVFFa1FkeUJ1SGU3X3BBWHhMdm00aXlRVjFHZXJXaVpHcTZHR2ZUVjR0MmpmNjJTYWlNYjQ3V0UybGk5aUxHWDNGTUdFOS1IdUotVzg3R3JYOTBIaGdBNTl6NF85a0JTSzlyOERNa3JVZm9KT0FHZ0E?oc=5&hl=en-US&gl=US&ceid=US:en), [[2]](https://www.gov.uk/government/news/genetic-technology-act-key-tool-for-uk-food-security), [[5]](https://www.bspb.co.uk/news/precision-breeding-bill-a-major-boost-for-crop-innovation/)
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2. <https://www.gov.uk/government/news/genetic-technology-act-key-tool-for-uk-food-security> - The UK government has enacted the Genetic Technology (Precision Breeding) Act 2023, aiming to enhance food security by enabling the development of crops that are drought and disease-resistant, and animals protected from harmful diseases. This legislation introduces a streamlined regulatory system for precision breeding, including gene editing, to accelerate agricultural innovation and align with global standards.
3. <https://www.niab.com/news-views/news/news-niab-welcomes-genetic-technology-precision-breeding-act> - The National Institute of Agricultural Botany (NIAB) has welcomed the Genetic Technology (Precision Breeding) Act, highlighting its potential to accelerate the development of higher-yielding, more nutritious, and climate-resilient crops in England. NIAB emphasizes the importance of proportionate and science-based regulations to foster innovation in plant breeding.
4. <https://www.gov.uk/government/news/genetic-technology-bill-enabling-innovation-to-boost-food-security> - The UK government has introduced the Genetic Technology (Precision Breeding) Bill to support the development of innovative technologies for growing more resistant, nutritious, and productive crops. The bill aims to remove unnecessary barriers to research into new gene editing technology, promoting sustainable and efficient farming and food production.
5. <https://www.bspb.co.uk/news/precision-breeding-bill-a-major-boost-for-crop-innovation/> - The British Society of Plant Breeders (BSPB) has welcomed the Genetic Technology (Precision Breeding) Bill, viewing it as a significant policy development in UK plant breeding. The bill is expected to encourage research and innovation to develop healthier, more nutritious food, and to make farming systems more sustainable and resilient in the face of climate change.
6. <https://www.agindustries.org.uk/resource/boost-for-domestic-crop-production-as-precision-breeding-technology-becomes-law.html> - The Agricultural Industries Confederation (AIC) has highlighted the benefits of the Genetic Technology (Precision Breeding) Act, noting its potential to improve crop resilience against climate change effects and enhance domestic crop production. The legislation is expected to lead to more sustainable and efficient farming practices.
7. <https://www.ox.ac.uk/news/2023-03-24-oxford-biologists-comment-new-genetic-technology-act> - Oxford biologists have commented on the Genetic Technology (Precision Breeding) Act, discussing potential applications such as coeliac-safe wheat, longer strawberry seasons, and climate-resilient lettuce. They emphasize the Act's role in enabling UK crop science to enhance global food security and environmental sustainability.