



# Promoting Seed Innovation



**BRITISH SOCIETY OF  
PLANT BREEDERS LTD**

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Information from the British Society of Plant Breeders

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## ROYAL ASSENT GRANTED TO GENE EDITING

March saw the rubber stamping of the Genetic Technology (Precision Breeding) Bill which has been granted Royal Assent to become an Act of Parliament.

This is a hugely significant piece of legislation for Britain's plant breeders and farmers, the first time in more than two decades that regulations have been brought forward which seek to enable and support the use of genetic innovation in agriculture – rather than to restrict or impose additional requirements. In doing so, it recognises the importance of plant breeding innovation in meeting future food needs sustainably.

BSPB has actively supported the Bill's passage through both Houses of Parliament over the past 10 months. By accelerating the development of improved crop varieties, more precise breeding techniques such as gene editing will help plant breeders keep pace with demands for increased agricultural productivity, resource-use efficiency, more durable pest and disease resistance, improved nutrition and resilience to climate change.

While Royal Assent represents a significant milestone, however, it is not the end of the process. The Act itself provides a framework for subsequent implementing rules to be introduced through secondary legislation, a process expected to take a further 18-24 months.

For plant breeders, the most significant of these will be the Food Standards Agency's plans for a separate approval process for food and feed marketing.

BSPB will continue to argue strongly that this approval process must be proportionate to the scientific evidence of risk, and in line with the underpinning rationale for the legislation that precision bred products could equally have occurred naturally or through conventional breeding.

**Sam Brooke, BSPB Chief Executive**



## EVENTS

BSPB will be at this year's Cereals event on June 13th and 14th. Our stand is 312A so please come and see us for a chat or to ask questions about seed and plant breeding.

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# SUSTAINABLE POTATO GROWING

Hotter, drier climatic conditions and concerns over emerging pest and disease threats present challenges to potato growers throughout the UK. However, Director of Cygnet PB, Alistair Redpath explains that there is significant investment in breeding that should provide optimism for growers.

“Working with researchers such as the James Hutton Institute with access to the Commonwealth Potato Collection, built up since the Victorian era and providing many novel sources of resistances, varieties are being developed that can stand up to the changes in climate and the pressure from pests and disease.”

He suggests that the industry has been testing varieties with greater resistance to drought stress, blight and PCN. However, the process is lengthy:

“We are using marker assisted breeding to find resistance traits that can be more quickly bred into varieties. Reducing the process from 10-12 years to 4 or 5, but it can only take us part of the way to beating the issues growers face,” he explains.

He advocates that varieties need to offer growers options, with the potential for high yields in both fresh, pre-pack and processing use. Varieties introduced more recently, with higher levels of resistance to climatic conditions and pest and disease threats, offer more sustainable options to some of the more traditional ones.

“Should we continue to see the hot dry conditions that many potato-growing areas experienced in recent years, varieties like Kingsman offer the potential to produce a good crop with reduced amounts of water. These varieties have a deeper root system and so will draw more moisture from beneath the ground, making them more tolerant to heat and drought stress,” he says.

G. pallida PCN is another growing threat to growers. However, marker assisted breeding is leading to varieties such as Elland which can help growers reduce their G. pallida PCN populations, allowing them to continue to grow into the future.

“We are aware of the issues, and breeders are working hard to introduce varieties with stress disease and pest resistance that are more sustainable and reliable for growers. Growers can benefit from this effort if they invest in varieties that have been bred to be more sustainable,” he concludes.

## INCORPORATING BLENDS

To mitigate the potential threat of disease and pests, farmers have looked to blends for popular cereal crops. AHDB’s Paul Gosling suggests that, in Europe, using mixtures is more popular than in the UK, with countries such as Denmark seeing a rise from 0.5% of blended wheat seed sold in 2018 to 36% for the forthcoming 2023 harvest.

Blends are used for feed wheat. However, milling blends are likely to become available in the future. Whilst any blend helps to offset potential threat, it also poses something of a conundrum for farmers when it comes to farm saved seed. BSPB is here to help calculate the farm saved seed declaration of blends by helping farmers to declare the area sown and the seed rate.

If the same blend is farm saved again, farmers need to declare the same ratio as the previous harvest’s crop, unless there is evidence to show that one of the variety has yielded more than another within the blend.

A variety blend acts as a portfolio diversifier and an insurance policy. It may not necessarily be the top yielder on-farm, but it can provide stability by buffering against environmental stress and variation. While farmers might not see an economic advantage in every season, there should be advantages across a number of seasons.

NIAB’s Aoife O’Driscoll suggests that those looking to incorporate blends to their system should start small with a mixture of three or more varieties that have similar maturity dates and heights. She also suggests that when it comes to saving seed for the next crop, that the ratio within the blend will change and farmers should think carefully about whether the dominant variety will be the best fit for the forthcoming season.



■ Paul Gosling

For more information on blends and how to declare farm saved seed from blends, visit the BSPB, AHDB or NIAB websites.

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