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EU survey highlights urgent need for regulatory reform on gene editing

Ahead of a forthcoming Defra consultation on post-Brexit regulation of new precision breeding techniques, the British Society of Plant Breeders (BSPB) has highlighted a recent industry survey which found that potential investment in new breeding techniques such as gene editing is being stifled by current EU rules.

The survey of 62 plant breeding companies in Europe, conducted by EU plant breeders' organisation Euroseeds and published in the journal *Frontiers in Plant Science*, confirmed very strong commercial interest, regardless of company size, in using new breeding techniques (NBTs) across a wide range of crop species and traits.

However, the survey also highlighted the negative impact on EU-based research and investment of a July 2018 European Court ruling which classified varieties developed using these new breeding techniques as GMOs. The ruling may also have hit smaller European breeding companies the hardest because they are less able to move research activities outside the EU.

Key highlights of the Euroseeds survey:

- The 62 plant breeding companies surveyed comprise 10% large (> €450m turnover), 37% medium-sized (> €50m) and 53% small (< €50m);
- 100% of the large companies, 85% of medium-sized and close to 50% of small companies are actively engaged in NBT-related research;
- Research activity ranges between technology development (ie to improve existing techniques), gene discovery and product/trait development;
- Regardless of company size, NBT research activity covers a very wide range of crop types (eg cereals, vegetables, fruits, oilseeds, pulses, ornamentals, sugar beet, maize and sorghum);
- NBT research activity across all company sizes also covers a wide range of agronomic, climate-proofing and consumer-facing traits (eg yield, food/feed quality, pest/disease resistance, heat/drought tolerance and industrial non-food applications);
- Around 40% of SMEs and 33% of the large companies stopped or reduced their NBT-related R&D activities after the ECJ ruling;
- The top three factors currently limiting the potential use of NBTs are:
 - Regulatory costs and timelines under the current EU GMO legislation

- Uncertainty over future regulations including timelines for product approval
 - Public acceptance under GMO regulation
- 100% of the larger companies, 86% of the medium sized, and nearly 70% of the small companies would increase investment in NBT-related R&D if the resulting products were not regulated as GMOs.

Commenting on the survey, which included responses from a number of BSPB member companies, BSPB chief executive Samantha Brooke said:

“The Euroseeds survey highlights the strong interest among plant breeding companies of all sizes in using new precision breeding tools such as gene editing to enhance the speed and accuracy of crop breeding programmes. The findings also demonstrate the diverse range of potential applications, from improved crop quality and performance to better nutrition, climate resilience, and developing renewable, plant-based sources of industrial products and materials.”

“Advances such as these are urgently needed for crop production to meet society’s future expectations in terms of climate change, healthier diets and more sustainable approaches to providing a secure supply of safe, affordable food.”

“But the survey also confirms that potential investment in these techniques is currently being stifled by EU rules classifying them as GMOs – a regulatory stance at odds with the rest of the world.”

“BSPB welcomes the UK Government’s objection to the ECJ ruling, and Ministers’ commitment to consult on taking simple gene editing techniques out of the scope of existing GMO regulation post-Brexit. We look forward to the public consultation on this legislative change, which would give a boost to prospects for investment and innovation in UK breeding programmes, and for more productive, climate-friendly and sustainable crop production,” concluded Ms Brooke.