

# NEWS RELEASE

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## **Plant breeding delivers £1 billion in additional value to UK economy**

Headline findings of a major new economic impact study suggest that the annual contribution of plant breeding exceeds £1 billion in additional value within the UK farming and food supply chain - equivalent to a 40-fold return on the seed royalty income received by breeders to improve the yield, quality and performance of home-grown crop varieties.

The work, which focused on three key crops – wheat, barley and forage maize – also estimates that the benefits of plant breeding help safeguard an additional £1.2 billion of economic activity in the UK each year which could otherwise be lost to overseas competition.

The BSPB-funded study, conducted by independent economists from DTZ's life sciences group, builds on the findings of earlier research by NIAB which found that over 90% of the increase in national average cereal yields over the past 25 years is due to innovation in plant breeding.

Economic benefits of improved varieties identified in the DTZ study range from increased yields and input savings at the farm level through to import substitution, export earnings and enhanced processing efficiency within the food and drink manufacturing sector.

In wheat, for example, the yield increase attributed to plant breeding is valued at between £373 and £445 million per annum, while the development of high protein, hard-milling UK varieties for breadmaking helps safeguard up to 750 UK milling jobs and £300 million of annual turnover in the UK flour milling industry.

Higher yielding barley varieties provide UK farmers with an additional £75 million of barley per annum, while the development of malting barley varieties with lower beta glucans for improved processability for brewers, and increased spirit yield for distillers, contribute between £238 and £592 million in extra value to the UK economy each year.

In forage maize, DTZ found that the combined economic benefit of higher dry matter intake, lower production costs and increased milk yield attributable to improved varieties is worth £66 million per year at the farm level.

Based on the findings, DTZ confirmed that the 40-fold return on investment associated with plant breeding significantly outperformed other research-based sectors and industries, which averaged between 5:1 and 15:1.

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Newly elected BSPB chairman Nigel Moore welcomed the study as a clear demonstration of the economic contribution that has been made by the UK plant breeding industry.

“The recent resurgence of high-level interest in plant breeding, reflected in a growing body of related reports, consultations and research initiatives, is also extremely welcome in highlighting the future demands of crop production.” he said.

“It is now clearly recognised that crop genetic improvement will be a key factor in delivering the sustainable increases in agricultural productivity needed to address global challenges of food security and climate change.”

“Our expanding knowledge of plant genetics certainly opens up major new opportunities to develop crops with increased yields and improved climate resilience. But the investment needed to exploit this rapidly advancing knowledge-base remains greater than commercial plant breeders can manage alone.”

“Without new sources of investment and improved collaboration between public and private sector research, current rates of genetic yield gain deliverable from the limited royalty income available to plant breeders will fall short of the food security goals set for 2030,” he warned.

“Global food supplies must increase by up to 50% over the next 20 years, but the policy response to date has been largely piecemeal, and is only now becoming more focused on optimising the productive potential – both current and future – of UK crop production. There is an urgent need to develop crop-specific targets for sustainable output to 2030, and more coherent research strategies to meet those objectives.”

“Since commercial plant breeding provides the only route to market for genetic improvements, the central involvement of breeders in setting and delivering the R&D agenda will be essential,” said Mr Moore.

Looking to the future, he warned that it is essential for the whole supply chain to work together with policy makers and regulators to create a stimulating environment for crop science, plant breeding innovation, and delivery of improved varieties to farmers. Forging these links within the UK and Europe is a priority for BSPB.

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## Notes

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DTZ's Life Sciences group has a deep understanding of science, its commercialisation and the resulting implications for client business and property strategies.

In economies around the world there is a recognition that science and innovation are vital in enhancing competitiveness and wealth creation. DTZ brings a detailed understanding of the academic, business and financial drivers needed to create the right conditions for success.

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