



All-Party Parliamentary Group on Science and Technology in Agriculture

Notes of Annual General Meeting held on Wednesday 6 March 2024

Meeting Room S, Portcullis House

Gene edited strawberries and potatoes heading for England?

In attendance:

Julian Sturdy MP
Lord Carrington
Lord Taylor of Holbeach
John Stevenson MP
Lord Lansley
Lord Trees
Lord Curry of Kirkharle

Guest speaker:

Muffy Koch, Senior Regulatory Affairs Manager, Simplot Plant Sciences

Stakeholder attendees:

Rebecca Sudworth, FSA; Richard Lloyd-Mills, Defra; Perry Bateman, British Sugar; Jennie Wilson, Trade Roots; Prof Tina Barsby, ex-NIAB CEO; Ian Mace, ABF; James Thompson, Dyson Farming; Prof Mario Caccamo, NIAB; Adam Whitehouse, Bayer; Dr Penny Hundleby, JIC; Grace Alston, POST; Kristabel Madera, Simplot; Michele Krucker, Simplot; Fiona Shuttleworth, HoL; Daniel Pearsall, Group Co-ordinator.

1. Annual General Meeting

Group co-ordinator Daniel Pearsall introduced the AGM formalities.

All members present agreed that the All-Party Group continued to make a valuable contribution to raising the profile and importance of agricultural science and technology in Parliament, and that the Group should continue to exist.

All members present supported the nomination of Julian Sturdy MP to continue as chair.

All members supported the nomination of Sir Robert Goodwill MP, Lord Trees and Lord Grantchester as vice-chairs, noting that this brought the Group into line with forthcoming changes to the APPG rules limiting the number of officers, including the chair, to four.

All members present also warmly supported a proposal to confirm outgoing officers Lord Cameron of Dillington and the Earl of Lindsay as 'honorary patrons', recognising their long-time support for the Group since it was established in March 2008.

All members present noted and approved a draft income and expenditure statement for the Group – attached at Appendix 1.

All members present also noted and approved a brief summary of the Group's activities over the past year – attached at Appendix 2.

2. Guest speakers

(Copies of guest speakers' slides are available to download via the Meetings section of the All-Party Group web-site www.appg-agscience.org.uk)

Muffy Koch, Senior Regulatory Affairs Manager, Simplot Plant Sciences

Muffy Koch (MK) opened by thanking the APPG for the opportunity to present, noting that Simplot had a new interest in UK developments following the passing into law of the Genetic Technology (Precision Breeding) Act last year.

MK explained that JR Simplot Company was a private US company owned by the Simplot family, headquartered in Idaho. A global food and agriculture company, Simplot is probably best known for producing frozen French fries, with production facilities in the US, Argentina, India, China and Australia, and with marketing operations around the world.

In addition to food production, MK noted that the company also operates a life sciences division in both plant and animal sciences, has a significant presence in agribusiness and agricultural extension services, and also has livestock farming and mining operations, hence the company strapline 'from mine to plate'. Simplot employs 15,000 people worldwide.

MK explained that the Simplot plant sciences division employs 90 people, so is a very small section of a very large company, with all scientific functions under one roof. To date Simplot's primary interest has been in genetically modifying potatoes for desirable traits, but more work is now taking place in gene editing of potatoes and other crops, hence the company's interest in UK regulatory and market developments.

MK noted that Simplot has been producing GM potatoes commercially since 2015. Potatoes in the US are a relatively small crop, with around one million acres grown each year – compared to around 90 million acres of corn and soybeans. And whereas over 90% the US corn and soybean plantings are GM, only around 2% of the US potato area is made up of GM varieties.

Key challenges with growing potatoes are that they are perishable, and must be stored to provide potatoes year round, which increases sugar content and affects processing quality. Potatoes can be easily bruised, and are also susceptible to a range of diseases which can impact quality and yields.

MK explained that all Simplot's GM potatoes are produced in a closed loop system, segregated from non-GM potatoes, and only sold into approved markets.

Simplot's potatoes are branded as 'Innate' because they are modified using genes from other wild and cultivated potatoes, not using foreign genes. The GM traits introduced into four popular fry and crisp varieties – Russet Burbank, Russet Ranger, Snowden and Atlantic - include non-browning, low-acrylamide potential, low sugars for improved storage, and resistance to late blight and Potato Virus Y.

MK highlighted the sustainability benefits of Innate potatoes, which ranged from reduced inputs and higher marketable yields to reduced waste and improved quality at all points in the production, processing and distribution chain.

MK compared the development cycle for a GM potato with a gene edited potato. For GM product development the timescale could stretch up to 15 years to market, whereas for gene edited products that timeline could effectively be more than halved to seven years, with a much faster process in terms of research, field testing and regulatory approval.

However, MK noted that Simplot will still need to use the GM method alongside gene editing because certain traits, eg disease resistance, are not currently achievable without GM.

Rapid improvement of vegetatively propagated crops such as potato and strawberry using gene editing had enabled Simplot to develop desirable traits in already popular commercial varieties. These include high (bunched) tuber set in small potatoes – allowing the same yield to be achieved on a third of the land area used previously – and longer flowering strawberry traits which allow varieties to produce fruit earlier and for up to three times longer than their conventional equivalents.

MK also noted that the high tuber set potatoes took just two business days to get regulatory approval from Health Canada.

For Simplot's gene edited S4A strawberries, MK explained that the company had taken a market leading short day variety, which usually fruits for a month, and extended the fruiting period to three months, with up to five times higher yield per plant, and with no deleterious traits as a result of the gene edited trait. She noted that the gene edited strawberries also offered improved storage properties, reporting that the company's chair Scott Simplot had stored GE berries in his fridge for 31 days which were still good to eat.

Describing Simplot's criteria for bringing a product to market, MK explained that they must be well-tested, perform better than existing products, be safe for environmental release and consumption, and have market demand.

MK explained that Simplot also observes US and Canadian industry guidelines for bringing new biotech products to market, which includes transparency and engagement with food value chain stakeholders, meeting national regulatory requirements in both production and import markets, as well as post-marketing stewardship.

Focusing on market acceptance of Simplot's Innate GM potatoes, MK noted that 2024 would be year 10 of commercial production, with over 1.4 billion servings sold to date, with a 70/30 split between foodservice and retail. Over that period, a total of just 192 calls had been received to the company's GM helpline number, of which 8% were product complaints, 10% seeking more product information, 25% asking where to buy the product, and 25% wrong number!

MK also highlighted three recent consumer surveys in the US which showed that while there is still confusion and a lack of knowledge about biotech foods among consumers, the technology has been in use for a long time in foodservice and retail and is here to stay. Other trending food concerns such as gluten-free and other allergies, lab-based meat and Kosher feature much more prominently in consumer concerns.

The US-based research also showed that foodservice operator perceptions towards biotech foods had also softened over time.

Summarising the impact of different labelling formats in the US, including the bioengineered food label and the QR code used for products containing GM ingredients, and the Non-GMO Project label used for foods produced without GM ingredients, MK noted that across frozen potato and crisp products the different biotech labels are having no differential impact on sales volumes or prices compared with the Non-GMO label.

In relation to strawberries, market research has shown that foodservice operators purchase fresh strawberries all year round, regardless of season, and most (58%) are not negatively impacted by GM or gene edited labels. Operators' primary concern with fresh strawberries is short shelf life, 76% are interested in a longer shelf-life strawberry, indeed longer lasting strawberries are the only innovation operators would be prepared to pay more for.

MK explained that the reason Simplot was visiting the UK was to meet with Defra and FSA officials to discuss plans to run line selection trials in England in 2025 of longer-fruiting, higher-

yielding gene edited strawberries, including storage and taste trials, engagement with the value chain and ultimately leading to variety registration and commercial production. She noted that longer-fruited 'remontant' strawberry varieties were already available and grown in England, but that the major advantage of the gene edited trait was that it had been introduced into a popular variety with much better post-harvest storage characteristics.

MK complimented England on its enabling regulations for gene edited products. Simplot would also be interested in the European market, but needed the EU to sort out its regulations first. The same would apply to countries like Egypt, which is a major exporter of strawberries to the EU.

3. Questions and discussion

It was noted that while production of gene edited strawberries would only be possible in England, the harvested fruit could be sold in all parts of the UK under the Internal Market Act (provided they were not further processed outside England).

MK noted that while Simplot's primary focus in the US was on foodservice operators – restaurants, fastfood outlets, schools, hospitals – it was clear from initial discussions over here that food retailers played a much more significant role in determining and influencing market acceptance.

In relation to the potential for Simplot's gene edited potatoes to be brought to market in England, MK indicated that the company would consider commercial activity wherever there was market demand.

MK confirmed that gene editing is sequence specific, so if the same sequence does not occur elsewhere in the genome the chances of so-called 'off-target effects' are very slim, and Simplot also runs checks of sequence information for any foreign DNA, although she cautioned against any regulatory requirement for full genome sequencing which would put these techniques out of reach for smaller companies and public sector researchers.

MK confirmed that bioengineered and QR code labels are not required for gene edited products in the US, although she considered that US consumers do not really differentiate between GM and gene edited in relation to biotech foods.

MK explained the planned route to market in the US for the gene edited small potatoes, which was via a closed loop of dedicated growers then processed by Simplot into frozen ready roasted baby potatoes.

MK noted that while McDonalds do not currently accept GM potatoes, it is not yet clear what their position will be in relation to gene edited potatoes.

Given the huge home-gardener demand in the US for the GM purple tomato developed at the John Innes Centre, MK noted that the home-grown and PYO market might be an option to consider for Simplot's gene edited strawberries.

MK noted that Health Canada maintains a transparency register of approved gene edited products, most of which are also on the US market.

Discussion of the benefits of a self-declaration or notification approach to regulation in supporting quicker innovation and access to market, a 'trusted trader' approach rather than a bureaucratic and burdensome approach in which regulators are required to test and provide an assurance of product safety.

Appendix 1

DRAFT INCOME AND EXPENDITURE STATEMENT

Name of group: All-Party Parliamentary Group on Science & Technology in Agriculture

Period covered by this statement: 11 February 2023 – 10 February 2024

Income and Expenditure

The group receives no direct income from membership subscriptions, monetary donations, trading income or interest and therefore incurred no direct expenditure over the course of the year.

Value of benefits in kind

Source	Description	Value £s	Received
Front Foot Communications Ltd	<p>Front Foot Communications Ltd provides the secretariat to the APPG: primarily this involves organising meetings, liaising and corresponding on behalf of the group, producing the group's annual report and maintaining the group's web-site.</p> <p>Front Foot Communications Ltd is paid by the following organisations to act as the APPG's secretariat: National Farmers Union, National Institute of Agricultural Botany; UK Flour Millers; Maltsters Association of Great Britain; British Society of Plant Breeders; Agricultural Biotechnology Council; CropLife UK; Agricultural Industries Confederation</p>	22,501 - 24,000	02/03/2023 – 01/03/2024

Appendix 2 - 2023/24 in Review

It has been another busy year for the All-Party Group.

Over the course of the past 12 months the Group hosted the launch of a new report from the Royal Society calling for reform of restrictive GMO rules inherited from the EU after almost 30 years' safe and effective use of GM crops.

Harnessing the power of farm level data and sustainability metrics has long been a key focus for the All-Party Group, and we were delighted to host the recent launch of the Farm Data Principles certification scheme, a new national initiative which aims to promote good governance of the use of farmers' data, and so give farmers the confidence to share their data.

In 2023, the Group issued a major new report on Farming Innovations to deliver Net Zero, the culmination of a three-month inquiry, and highlighting how scientific advances in areas such as plant and animal breeding, precision agriculture, alternative proteins, feed additives, indoor farming and other sectors can support increased domestic food production and economic growth while delivering on the Net Zero agenda for British agriculture.

We have continued to highlight the need for a science- and evidence-based approach to the development of farming policies and the regulation of farming innovations.

That's why we called on Defra to publish a full impact assessment of its Environmental Land Management and Sustainable Farming Incentive policies on agricultural productivity growth and domestic food self-sufficiency, in the context of the government's Food Strategy commitment to maintain national food production at current levels.

It's also why we recently wrote to the Nuffield Council on Bioethics urging them to review and update their 2021 report on genome editing in farmed animals, challenging the report's characterisation of our food production system as 'morally indefensible and unsustainable', and citing evidence of significant and ongoing improvements in livestock breeding and farm animal welfare standards, driven by science.

Just under a year ago, the Genetic Technology (Precision Breeding) Act received Royal Assent, a piece of legislation initially called for by members of this All-Party Group through a proposed amendment to the Agriculture Act in 2020, and a regulatory development we have actively supported throughout.

Over the past year we hosted a delegation from Canada to hear about their approach to regulating precision breeding technologies such as gene editing, and the Group also submitted a response to the Food Standards Agency's consultation on proposals for a new framework in England for the regulation of precision bred organisms used for food and animal feed.

Today we are delighted to welcome visitors from the J.R. Simplot Company in the US to discuss their plans to bring gene edited strawberries, and possibly gene edited potatoes too, to the market in England following the enactment of the new legislation.