



All Party Parliamentary Group
Precision Breeding Working Group
U.K.
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Global Food & Agriculture



Global Food



Global Services



Life Sciences



AgriBusiness



Land & Livestock



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Simplot Plant Sciences

Biotech potato product developers

- Established in 2000
- ~ 90 employees
- Startup functions all under one roof
 - Molecular
 - Transformation
 - Agronomy & Pathology
 - Food Science
 - Regulatory



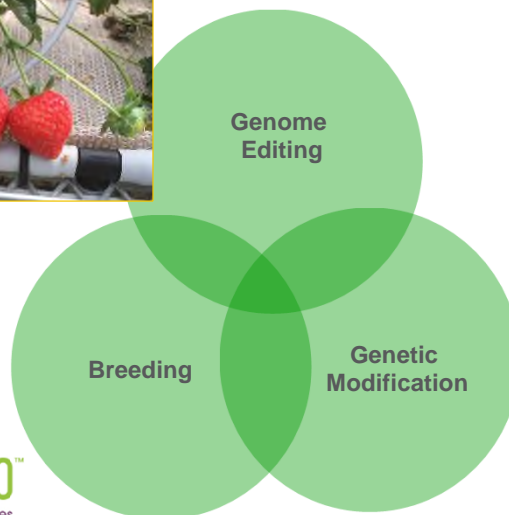
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SPS Technology



Heading into our 10th Crop Year

Gen1 – 2015
 Gen2 – 2017
 Gen3 – Coming Soon!



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1 Million Acres of Potatoes in the U.S.



~ 90 million
acres of corn



~ 88 million
acres of soybean



~ 2.2 million
acres of canola

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Potato Challenges

- Perishable
 - 80% Water
- Storage
 - Providing potatoes year round
 - Increase sugar content
- Bruising
- Disease



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Innate[®] Potatoes

- Genes from wild and cultivated potatoes, **no foreign genes**
- 4 popular fry and crisp varieties

Traits added

- Non-browning
- Lower acrylamide potential
- Low sugars, improved storage
- Late blight protection
- Potato Virus Y protection



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Who has used Innate[®] Potatoes?

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Innate[®] Potatoes: Sustainability




Farm

Fewer inputs; higher useable yields; less waste




Storage

Consistent sugars, late season storage



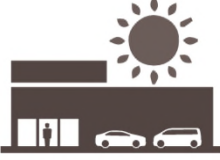
Shipping

Reduced bruising, black spots



Processing

Potential for increases in recovery



Consumer


Low bruise, less waste, and healthier option

BENEFITS:

- Late blight disease resistance
- Lower sugar content
- Less browning and black spot from bruising
- Reduced acrylamide when cooked

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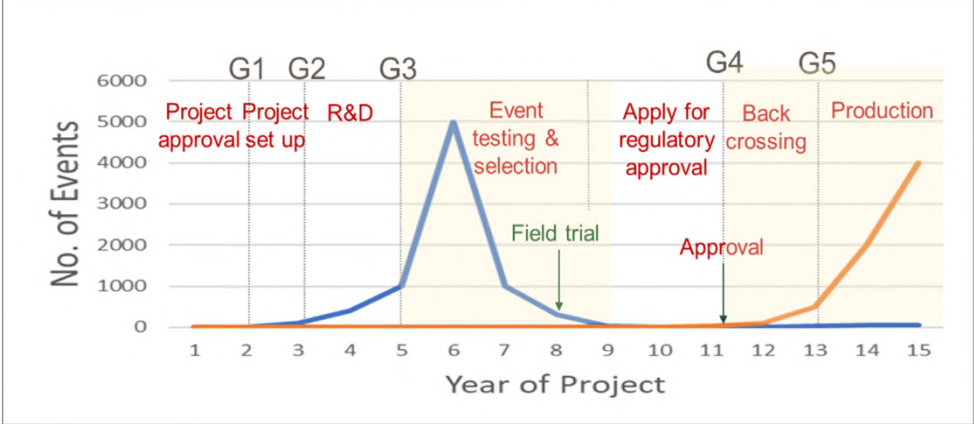
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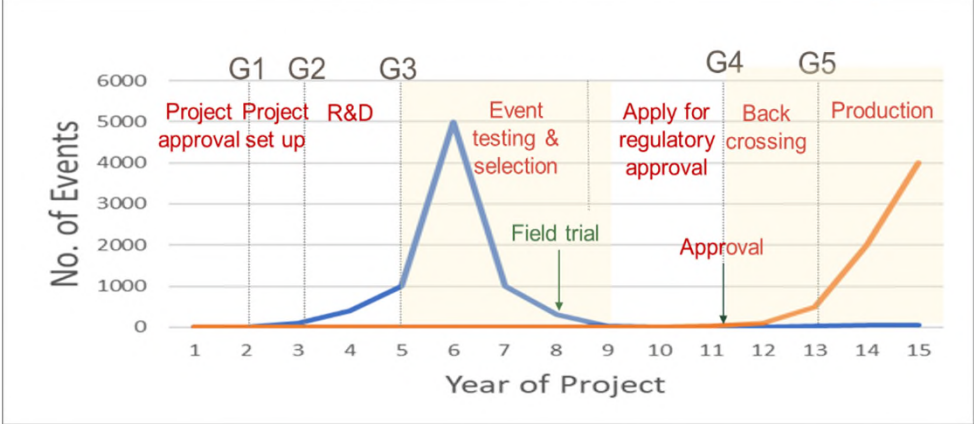
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GM Product Development

GM events



GM planting material (ha)



G1 G2 G3

G4 G5

Project approval set up

Project R&D

Event testing & selection

Apply for regulatory approval

Back crossing

Production


Field trial

Approval

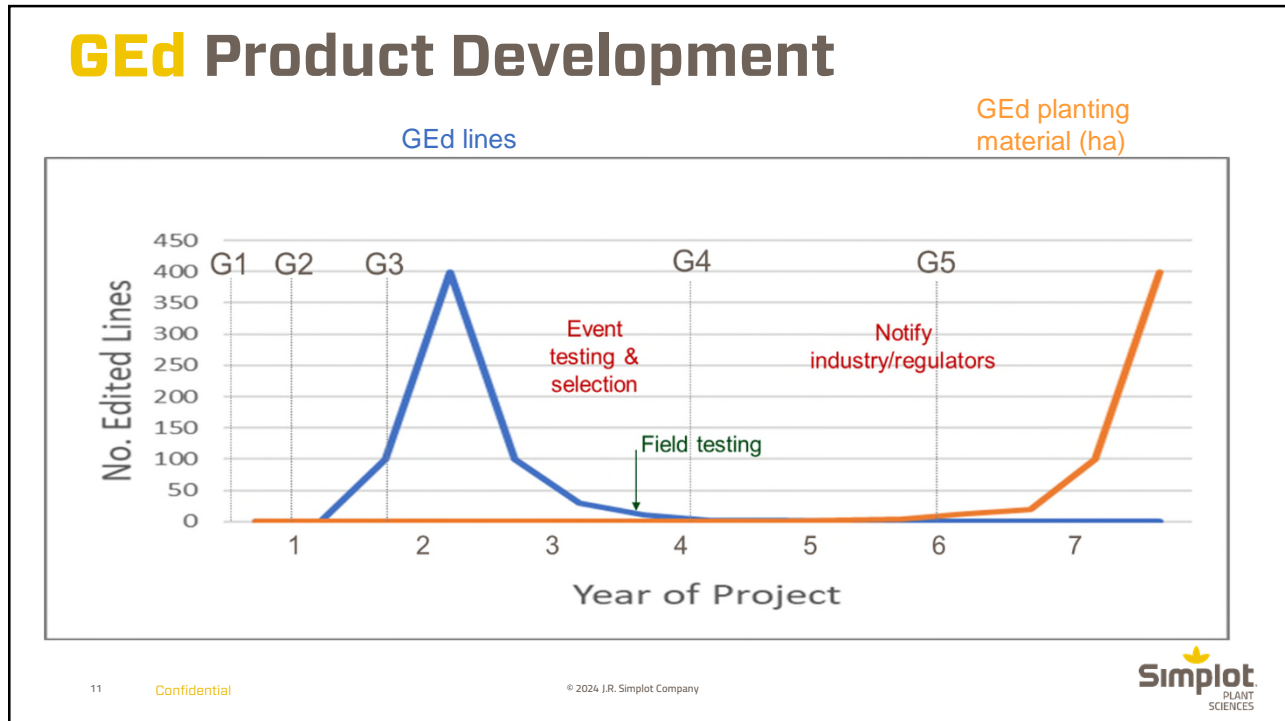
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Genome Editing is Important

- Rapid improvement of vegetatively propagated crops such as potato & strawberry
 - About 7 years
- Like GM, varieties retain commercial quality traits that the market expects

JA36
High tuber set - small potatoes

Genome Edited Strawberry
Early blooming, longer flowering season, more fruit

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Genome Edited S4A Strawberry

- CRISPR-Cas9 edited strawberry: short-season to long-season fruiting
 - Plants bloom earlier and produce fruit longer
- U.S. commercialization in a few years

Goal

- Reduce food waste (better storage variety)
- Sustainable production: more berries using the same resources



Parent Strawberry

Genome Edited Strawberry

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Flowering + Berries

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Criteria for Product Commercialization

Products are commercialized only once they are:

- Well tested
- Perform better than existing products
- Safe for release & use
- Have market demand



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Route to Market

- Market pull
- Customer participation
 - Internal
 - External




U.S. & Canada Industry Guidelines for bringing biotech products to market

- Consultation with food value chain stakeholders
- Transparency
- Meet regulatory requirements
 - Production countries
 - Importing countries
- Pre- & post-commercialization steps


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Market Acceptance of Innate® Potatoes


CY24 is our 10th Crop Year

- Have sold over 1.4B servings
 - 70/30 split foodservice & retail
- 192 calls to 1-800 number since 2015
 - 8% related to product complaints
 - 10% more product information
 - 25% asking where to buy product
 - 25% wrong number



Proudly raised in the heart of potato country, these special White Russet™ potatoes stay white longer when cut or cooked so they're more convenient and create less food waste. And, since they're less vulnerable to bruising and black spots, potato farmers can grow more on less land so they're better for the environment too!

www.whiterusset.com

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U.S. Consumer Acceptance of GM & GED

Recent Market Research

Foodservice Operator Study, 2023

Consumer Study – BIO, 2023

Consumer Study – Crisps, 2022

- Still confusion & lack of knowledge around biotech foods
- GM has been around a long time, is ubiquitous in foodservice & retail, and is here to stay
- Majority say not asked about GM foods at all
 - GM topic is old
 - Other trending food concerns e.g., gluten free, allergies, modified animal protein, & Kosher



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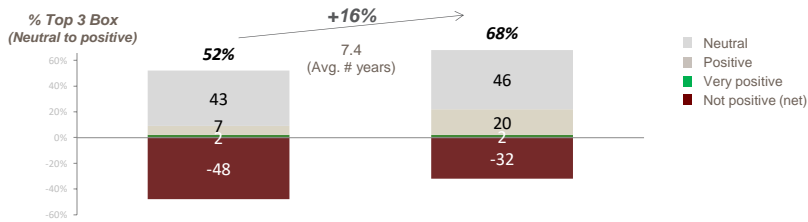
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Operator Feelings re GM Softened Over Time

- Near 50% negative perception is now about 33%
- Positive impressions have increased
- Just under half of operators were originally & continue to be neutral to the term.



% top 2 box "positive/very positive" by segment

Segment	First Heard	Now	Increase
FSR (138)	8	20	+12
LSR (49)	8	18	+10
C/U (50)	6	22	+16
Hospital (50)	8	32	+24
K-12 (47)	13	19	+6

Increase in positive feelings

Base: 334 (familiar with GM)

Q. Think back to when you first heard about foods that were GM. What were your feelings towards GM foods then? Were they positive, negative, or neutral? How do you feel about GM now? (5 pt. scale)

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Prevalence & Impact of Labeling in Retail

NielsenIQ - Latest 52 Wks - w/e 07/15/23

2016; 2022	2022 court request	
"Bioengineered Food" or "Contains a Bioengineered Food Ingredient"		
	HIGH LIKELIHOOD OF GMO INGREDIENTS	
13.8B Units in F&B 7% of all F&B	77.2B Units in F&B 40% of all F&B	15.8B Units in F&B 8% of all F&B
Units % Change YA = -1%	Units % Change YA = -2.6%	Units % Change YA = -2.3%

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No impact on Sales & Price due to BE Labeling

NielsenIQ - Latest 52 Wks - w/e 07/15/23

		
Bioengineered Food" or "Contains a Bioengineered Food Ingredient"	Frozen Potato - Sales, 1 y = +4.2% - Price increase/unit = +34%	Potato Crisps - Sales, 1 y = +19.7% - Price increase/unit = +6%
	- Sales, 1 y = -10.5% - Price increase/unit = +24%	- Sales, 1 y = +3.1% - Price increase/unit = +12%
High Likelihood GMO Ingredient	 - Sales, 1 y = -0.1% - Price increase/unit = +26%	- Sales, 1 y = -3.5% - Price increase/unit = +13%

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Strawberry Market Surveys – U.S.

Food service operators purchase fresh strawberries, year-round, regardless of season

Most operators (58%) are not negatively impacted by GM or gene edited labels



Operators' top complaint = short shelf-life

76% are interested in a longer shelf-life strawberry

Longer lasting strawberries are the only innovation most operators would pay more for

Ongoing discussion & consultation with food service and retail operators

Datassential, 2021

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Gene Edited Strawberry in the U.K.

- Working with DEFRA and FSA to run line selection trials in England in 2025
- Market test fruit storage and taste
- Value chain outreach
- Variety registration
- Commercial production



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Feedback & Questions

What value chain outreach would you like to see in the UK?



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