

A broccoli based spin-out

From collecting wild *Brassicac*s in the 1980s, it has taken many years of conventional plant breeding, field trials and human studies into potential health benefits to deliver high glucoraphanin broccoli varieties to the public.

The Smarter Food Company is the resulting spin-out from the Quadram Institute Bioscience. The company was formed with support from technology transfer specialists, PBL (Plant Bioscience Ltd).

Broccoli has long been considered a 'superfood', with a body of scientific studies finding that eating lots of cruciferous vegetables, and broccoli in particular, may help reduce the risk of various health conditions, such as type-2 diabetes, cancer, high cholesterol, heart disease and even some neurodegenerative diseases such as Parkinson's.

A key part of broccoli's health-boosting effects is a naturally occurring compound called glucoraphanin.

When we eat broccoli, the glucoraphanin inside it is converted in our gut into its active form, called sulforaphane. Rather than acting directly on any one aspect of our health, sulforaphane helps improve the way our cells work at a very fundamental level, which in turn brings a wide range of benefits to many different aspects of our health.

1984

Wild brassica with naturally raised levels of glucoraphanin identified during Richard Mithen's PhD studies



"Glucoraphanin helps people maintain a healthy metabolism, which is associated with a reduced risk of developing age-related health conditions like type 2 diabetes, cancer and heart disease."
Prof. Richard Mithen.



John Innes Centre

Unlocking Nature's Diversity

1990

While working at the John Innes Centre he noted research regarding the anti cancer properties of glucoraphanin

1998

After more than 10 years examining the plants, a successful cross between a conventional breed and the Sicilian variety was created - Beneforté



1998
In collaboration with Plant Bioscience Limited (PBL) a priority patent is filed

2000

Licensed Beneforté broccoli to Seminis (worlds largest seller of veg seeds) who then developed commercial production varieties



The University of Nottingham

2000

Moved the research to University of Nottingham to work with Queens medical centre and undertake food studies

2002

Patents approved in Europe and USA (note that from 2003-2011 the patents were successfully defended)

2003

Moved the research to the Institute of Food Research (IFR) (note that IFR transitioned into the Quadram Institute in 2017)

2005

Monsanto spends \$1.5 billion acquiring Seminis



2010

Beneforté broccoli seeds are provided to commercial growers

2011

Beneforté broccoli goes on sale for a trial period at



"The roll-out of Beneforté broccoli to supermarkets across the UK is great news for the public and UK science alike. Research discoveries have now been translated into a commercial product, with significant potential health benefits, available to all."
Professor Douglas Kell, BBSRC Chief Executive



2013

Research suggests metabolic changes in study participants could be associated with a high glucoraphanin broccoli diet (i)

2015

Research suggests eating more glucoraphanin may help to maintain healthier cholesterol levels as we get older (ii)



BAYER

2018

Bayer acquired Monsanto and all of its seed brands, including Seminis

2018

A further hybrid was developed for commercialisation which contained even higher quantities of glucoraphanin; GRExtra

2019

In collaboration with PBL a priority patent is secured for GRExtra

2019

Research suggests glucoraphanin can help maintain healthier blood sugar levels, a key biomarker for diabetes (iii)



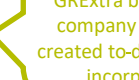
THE SMARTER FOOD COMPANY

2019

Due to difficulties of securing a health claim for Beneforté or GRExtra broccoli, the spin out company 'Smarter Food' was created to-develop food products incorporating GRExtra

2022

Smarter Naturally soup goes on sale containing the GRExtra strain of glucoraphanin rich broccoli <https://smarternaturally.com/>



2022

"Dietary interventions that provide glucoraphanin could benefit patients with prostate cancer." **Dr Tracey Livingstone, Urology registrar**



2022

Research suggests that a high-glucoraphanin diet may slow prostate cancer progression (iv)

Outcomes

Smarter Food is expected to launch a product in the USA and double in size in the next 12 months. Case studies discussing observed improvements for diabetes patients are available on <https://smarternaturally.com/>.

In the UK, the NHS spends around £10 billion a year on diabetes. Any product that can help prevent the on-set of diabetes of other age-related conditions such as cancer, cardiovascular diseases or neurodegenerative conditions could make a significant impact to society and the economy.

References

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