

## Potato Greening

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In the UK, potato tuber greening is directly linked to 116,000 tonnes of household potato waste each year with an associated estimated loss of £60m p.a. to UK retailers. Field losses due to tuber greening costs the industry £37m p.a and greening can also be a significantly negative factor in consumer purchases where a 1% increase in sales is worth £3m p.a. to producers.

This collaboration between industry and academia aims to address an un-met demand for controlling potato greening. The 18 month research project will be carried out through collaboration between academic partners, the James Hutton Institute's Dr Mark Taylor and Dr Glenn Bryan, and from the University of Southampton, Dr Haruko Okamoto and Professor Matthew Terry.

The project will explore the commercial potential for developing methods to reduce greening using multidisciplinary approaches that combine material science, crop genetics and molecular physiology. Although the greening trait is due in part to the depth of tuber formation, stolon length and agronomic factors, sensitivity to light is a vital component. It is hoped that research can facilitate the rational design of new packaging films that can filter out wavelengths that impact on greening. There is also the possibility to modify light regimes during storage and in store.

Alongside the above, recently developed potato genetic approaches will be used to identify markers for genes associated with reduced greening providing the foundation of a longer term strategy to produce new non-greening potato varieties.

The project brings together partners that span the food chain from production, through packaging, to major supermarkets, who will work with the academic researchers. Commercial partners have the potential to deliver any resulting innovations and a clear route as to how they could be deployed within the potato supply chain. They include;

- Branston Ltd, a leading British potato company
- Amcor, the largest packaging company in the world
- Tesco
- Waitrose

The project is part-funded by Innovate UK.

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