

Packaging that knows when food is going off

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Packaging that alerts consumers to food which is starting to go off is being developed by researchers at the University of Strathclyde in Glasgow, Scotland.

The project aims to improve [food safety](#) and cut unnecessary [food waste](#) by developing a new type of indicator, made of 'intelligent plastics' which give a warning, by changing colour, of when food is about to lose its freshness because it has broken or damaged [packaging](#), has exceeded its 'best before' date or has been poorly refrigerated.

An estimated 8.3 million tonnes of household food- most of which could have been eaten- is wasted in the UK each year.

The indicator is to be used as part of a form of [food packaging](#) known as modified atmosphere packaging, which keeps food in specially-created conditions that prolong its shelf life.

Freshness indicators typically take the form of labels inserted in a package but these come at a significant cost. Strathclyde researchers are looking to create a new type of indicator which is an integral part of the packaging, and so is far less expensive. The project has received £325,000 in support from the Scottish Enterprise Proof of Concept Programme.

Professor Andrew Mills, of the Department of Pure and Applied Chemistry, who is currently leading the Strathclyde project, said: "At the moment, we throw out far too much food, which is environmentally and

economically damaging.

"Modified atmosphere packaging is being used increasingly to contain the growth of organisms which spoil food but the costs of the labels currently used with it are substantial. We are aiming to eliminate this cost with new [plastics](#) for the packaging industry.

"We hope that this will reduce the risk of people eating food which is no longer fit for consumption and help prevent unnecessary waste of food. We also hope it will have a direct and positive impact on the meat and seafood industries."

By giving a clear and unambiguous sign that food is beginning to perish, the indicators being developed at Strathclyde could resolve potential confusion about the different significances of 'best before' dates and 'sell-by' dates. They could also help to highlight the need for food to be stored in refrigerators which are properly sealed.

Lisa Branter, acting head of the Proof of Concept Programme, said:
"Through the Proof of Concept Programme, we are creating the opportunities to build high value, commercially viable spin-out companies from ground-breaking research ideas. What we want to achieve are more companies of scale created as a result of the Programme, and this project is a great example of an idea which offers real business opportunities."

Provided by University of Strathclyde

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