

Smart food sensors could push down price of fruit 'n' veg

September 7 2009

The price of fresh food in shops and supermarkets could be reduced if innovative work at The University of Manchester to develop intelligent low-cost sensors is successful.

Scientists and engineers at The Syngenta [Sensors](#) University Innovation Centre are working on technology that will allow more scientific 'best before' dates to be set by food producers and retailers.

Researchers are looking at how sensors integrated with Oyster-card type Radio Frequency ID (RFID) technology can be used to track real-time stresses suffered by perishable goods from when it leaves the farm to when it arrives with the retailer.

Britain throws away £20 billion of food every year and food makes up the single largest source of commercial waste at roughly 21 per cent.

Now chemists, engineers and physicists are working together to develop a system that uses battery-free RFID tags to monitor and record stress profiles, which costs around 10p to 20p - rather than £20 at present. It is predicted this low-cost will help fuel the widescale deployment of the technology.

Dr Bruce Grieve, Director of the Syngenta Sensors University Innovation Centre at The University of Manchester, said: "There are both economic and environmental drivers behind the desire for this kind of technology.

“The economic motivation for companies in the food supply chain is to reduce the hidden costs that we all bear when purchasing fresh produce. Only a percentage of that produce makes it all the way to our plates and so when we shop we are paying an invisible fee for these losses.

“Through real-time inventory management of produce, based upon accurate forecasts of shelf life on a box-by-box basis, these losses may be minimised and costs recouped.

“As consumers we may see some of this saving reflected in cheaper [fruit](#) and [vegetables](#), while the companies that introduce and invest in this technology will also gain economically.”

Dr Grieve also highlights the environmental benefits of the technology, which should reduce the amount of unfit produce that reaches the shelves.

“This will help reduce fuel usage by minimising transportation of the stressed and rejected produce. It could also help reduce the environmental impact of unfit produce going into landfill,” he said.

“But most importantly for climate change, it could also reduce the total synthetic fertilisers and nitrogen usage per tonne of food consumed. This currently accounts for around 70 per cent of carbon used in typical crop production.”

Dr Grieve and colleagues will be working with colleagues in industry to integrate knowledge of the way seeds have been bred and farming techniques with ‘stress profiles’ from sensors to create more meaningful best before dates.

Dr Grieve added: “The first generation of this technology will be based upon silicon but our plan is to use plastic printed electronics in later

generations to make the sensor tags compatible in cost with the humble bar code.

“This is adventurous research and won’t be with us tomorrow. Realistically we will have ironed out the major scientific hurdles by around the end of 2010 and then there is a significant step to translate this into a final device using appropriate manufacturing techniques.

“The commercial silicon sensor-tag could be with us in about three to five years whereas the printed plastic equivalent may be here in 2015.”

Source: University of Manchester ([news](#) : [web](#))

Citation: Smart food sensors could push down price of fruit 'n' veg (2009, September 7) retrieved 24 April 2024 from <https://phys.org/news/2009-09-smart-food-sensors-price-fruit.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.