

## Professor hails 'world-changing' technology proven to extend shelf life of fruit and veg

April 12 2016

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Trials of potentially 'world-changing' technology aimed at prolonging the life of fresh produce have proved successful.

Raw fruit and vegetables saw their shelf life increase by up to one day in a study which involved produce being sprayed with an electrically-charged solution that kills bacteria responsible for spoilage.

Testing carried out in cold storage revealed that use of the novel system, developed at the University of the West of England (UWE Bristol), had

no effect on the taste or appearance of the produce.

UWE Bristol's Professor of Health and Environment, Darren Reynolds, says the technology could be implemented commercially within a year if the [food](#) industry is convinced by its benefits. He believes the approach could reduce waste, save millions of pounds and even play a role in helping resolve world hunger.

Tomatoes and cucumbers responded particularly well to treatment with the solution, which is produced by passing salty water through an electro-chemical cell. The activated solution, which is inexpensive to make can be created on demand, kills bacteria commonly found on the surface of [fresh produce](#) but is harmless to human skin.

The recent trials – which involved treating produce post-harvest – also saw carrots, peppers, potatoes and tropical fruit doused in the activated liquid.

Professor Reynolds, who pioneered the technology, said: "For some types of produce, we could make a significant impact. We could demonstrate scientifically it would impact on the quality of food in terms of how long it can be stored. It showed we could increase the shelf life by about a day.

"Ultimately, it will make the whole production, distribution and sale process more efficient. That's where I have to head to – a more sustainable world where we are wasting a lot less. With fresh produce, you have to drive it somewhere, and treat it. The waste is not just the bits you put in the bin – the whole chain around waste is growing.

"We have to stop wasting stuff – we can't afford to be as wasteful with our resources and everybody knows that. I can't think of one person who doesn't see the mountain of waste and think it's a disgrace.

"If you really want to change the world, one of the things you could do is extend the shelf life of a cherry tomato by one day. That sounds like a dismissive thing to say but it would allow producers to be more strategic in the way they crop and give them more time to distribute food before it goes off or gets spoiled. Such small things can actually make a huge difference in the whole [food supply chain](#)."

Professor Reynolds said the project – which began in 2013 and has seen academics team up with food suppliers and supermarkets - was now in the 'persuasion phase'.

He said: "People who have a stake in this industry need to adopt it in a way which has end users on board. They have to convince the end users, including supermarkets, that this is a good idea. It's important because the world produces four billion tonnes of food and as much as 40 per cent of that never reaches the human tummy.

"It's possible we can apply this technology in other spheres as well, like potato blight, which is a problem in parts of Canada. If anything is going to happen it will happen quickly. From my perspective, all you can do is present a solution where you have laid out and contextualised the risks scientifically."

The project, named Microbial Management of Fresh Produce Preservation, Protection and Intervention, began in April 2013 and has received £250,000 in funding. It attracted investment from DEFRA through the Technology Strategy Board and is being led by food technology developers, Norman Pendred & Company.

A research team from UWE Bristol has also worked with food producers and suppliers from Thanet Earth, the Fresca Group and technology partner Bridge Biotechnology.

Of the results of the trials, Professor Reynolds, academic lead for the project, said: "It's fantastic. As a scientist, it's as good as it gets. There's been lots of enthusiasm and I feel I have made a difference. That's the key thing and that's what motivates people like me – I want to make a difference and want to show our students that science can make a difference."

Provided by University of the West of England

Citation: Professor hails 'world-changing' technology proven to extend shelf life of fruit and veg (2016, April 12) retrieved 25 April 2024 from <https://phys.org/news/2016-04-professor-hails-world-changing-technology-proven.html>

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