# Q&A: Trapping Ethylene May Extend Shelf Life of Food

### *Interview with Greg Pavett, President, It'sFresh!*

It’sFresh!, a company delivering solutions to enhance food freshness and reduce food waste, announced a new sustainability goal; the diversion of 10 million pounds of fruit from the waste-stream by 2015 as a result of its technology. It'sFresh! is a paper-thin, food-grade sheet that accompanies berries, tomatoes, avocados and other fruit through the supply chain to trap ethylene, extend shelf life and eliminate waste, which can be especially prevalent at the store-level.

It'sFresh! President Greg Pavett spoke with *Food Manufacturing* about how the technology is curbing the global food waste issue and what its use is in major retailers throughout the world.

### Q: What is the need for shelf-life sensitive packaging in food manufacturing?

**A:** The most recent report from the Food and Agriculture Organization of the United Nations estimates that 1.3 billion tons of food are wasted globally every year, resulting in direct, annual economic losses of $750 billion U.S. dollars. Some 3.3 billion tons of greenhouse gases are pumped into the planet’s atmosphere in order to grow food that is eventually tossed into landfills, which, incidentally, further emit damaging methane gas. It is unfortunate that food waste has become a “cost of doing business” that is included in the P&L every year. The reasons for so much waste are complex, but we do know that fresh produce contributes to a large percentage of that waste due to premature ripening.

### Q: How do food manufacturers benefit from reducing food waste?

**A:** The food manufacturing industry’s efforts to extend shelf life will have commercial and environmental benefits. Longer shelf life means less wasted inventory, better selection and value for consumers, and an overall reduction in agricultural inputs, such as water usage and transportation emissions. Lower agricultural inputs lead to lower costs and a more efficient supply chain. Plus, in a world where we need to feed more people every day, tangibly reducing waste is also a great opportunity for the industry to show that it’s serious about making current agricultural resources go further.

### Q: How can this type of packaging benefit manufacturers?

**A:** The simple culprit behind much of the wasted produce is ethylene gas, the naturally occurring ripening hormone emitted by many kinds of fruit. Ethylene is essentially a distress signal, sent to other fruit and vegetables to warn of imminent danger and communicate the need to ripen as fast as possible. The gas is responsible for changes in taste, texture, color and other ripening processes. The technology needs to be simple, non-invasive and proven to manage ethylene through the entire supply chain by slowing down the ripening clock. Removing food

waste will lower manufacturers' costs, and increase their yields. Lower costs and environmental inputs are measurable and relevant to the food production industry and especially to the world's largest retailers. Proactive ethylene management ensures the quality is good and the product is enjoyed.

**Q: How does the It'sFresh! technology work?**

**A:** The It'sFresh! technology relies on a proprietary blend of minerals and clay that filters and traps ethylene. The minerals and clay are packaged within paper-thin, food-grade pads and sheets, which are safe, easy-to-use and have a stronger efficacy than any other material. The sheet traps nearby ethylene molecules as they are released at any stage of the supply chain. In other words, the technology accompanies and immediately upon postharvest all the way through to the consumer's home. A University of Arizona study, *Conclusion of the Impact of E+ on Shelf life of Tomatoes*, shows academic and private institutions have confirmed the technology is effective in all temperatures and atmospheres and extends shelf life by as much as three extra days. The Plant Science Laboratory at Cranfield University also studied why removing ethylene should extend the post harvest life of strawberries.

Certainly, the problem of food waste will not be solved by any single technology, law or campaign. This global issue will require a multi-faceted, global solution with contributions from scientists, regulators, academics, businesses, and consumers. However, proper ethylene management in the produce supply chain is one crucial step toward creating a more sustainable, efficient, high-quality food supply. In an era of rapid worldwide population growth alongside persistent hunger and waste, the improving technologies for combating this ripening agent are an encouraging and hopeful sign.

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