

New products: Data loggers aid in chilled export beef performance

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Sam O'Leary, Australian Organic Meats business development manager holding the Escavox tracker on their North Star property in NSW.

WITH a growing proportion of Australian red meat leaving these shores in retail-ready chilled form, next generation data-loggers are providing greater insight into cold-chain performance once the product leaves the processing plant.

Newly-developed data loggers and support systems have a range of features that assist red meat exporters to analyse the supply chain journey from processing plants to final destination, in a bid to gain confidence in the shelf life for products packed in Vacuum Skin Packaging (VSP).

Unlike first generation data loggers which simply produce a CSV raw data file once the device is retrieved after end-point delivery, latest versions are linked to easy-to-use data analytics and an online dashboard, which can be accessed by all links in the cold chain if required. Latest data loggers can also provide real-time data while en-route.

A pilot trial using Escavox logging devices and data management systems focused on chilled portioned cuts and beef and lamb primals in VSP. The technology delivers exporters valuable, data-driven insights into how their

red meat consignments perform in transit, helping retailers to retain product in market for longer than currently prescribed.

If widely adopted, the new approach to supply chain monitoring and management could collectively save the red meat industry millions of dollars in lost sales and food wastage, the developer says.

Exporters who take up the opportunity will be following recent trials that were conducted on domestic supply routes, which showed supermarket retailers could keep red meat products in VSP on shelves well beyond their mandated 'best before' dates.

Both trials have been made possible due to the involvement of supply chain analysis providers Escavox, who deploy custom-built technology to accompany the product as it moves through the supply chain.

Organic beef chain early user

One of Australia's leading organic red meat supply chains has deployed the Escavox system into its shipping containers bound for markets in the US.

Simone Tully, director of Australian Organic Meats, said the data and analysis collated would enable her company to provide independent, verifiable feedback to supply chain partners about the overall condition of the product from its point of origin until arrival on the retail shelf.

Ms Tully said she saw three major benefits from obtaining an end-to-end view of her product's supply chain journey:

- Protecting price premiums for longer due to extended shelf life at optimum quality.
- Reducing waste by retaining product in front of the consumer for longer and
- Opening access to a larger pool of export markets based on the Escavox-generated intelligence that will inform how long the product can remain in-transit without compromising quality and safety.

"It's quite unique when you have this cutting-edge technology meeting real world application that will be giving us a clear line of sight into what our products experience, from the moment of pack here in Australia until arrival in our customers' overseas retail outlets," Ms Tully said.

"It is information that I am keen to share with all of our supply chain partners so that we can collaborate further on what the data is telling us, and then make adjustments accordingly to our logistics planning to ensure we get the very best out of our product every time.

Ultimately this was about returning more value to customers, enhancing the eating experience for the consumer and reducing unnecessary waste, Ms Tully said.

“It also potentially opens new opportunities in different markets that once upon a time we may have thought were off-limits because they were too far away, or we couldn’t get logistics to line up in the timeframe required to support the integrity of the product,” she said.

“We believe the Escavox analysis will give us the confidence to make firmer forecasting into the performance of the product in-transit, giving our customers greater assurance.”

Domestic and export trials

Trials conducted on domestic red meat supply chains across Australia using the Escavox technology and the MLA shelf-life predictive model indicated retailers could be discounting or discarding their products too early by basing their shelf-life forecasts on modelling aligned to older packaging methods such as Modified Atmosphere Packaging.

Escavox co-founder and red meat category manager Darryl Lyons said without knowing the supply chain journey in detail and not aligning the logistics with the attributes of VSP, retailers could be cutting the shelf-life of their red meat products too early, depriving the outlet of potential sales.

“The data we received from the domestic trial suggests these findings could bring about significant improvements, potentially saving the supply chain millions of dollars a year in retained sales and reduced waste due to markdowns,” Mr Lyons said.



Escavox is now undertaking an export trial, and anticipates that the data will show there are also significant opportunities to be realised with overseas customers.

“As more exporters come on board with the program, it will provide an even clearer picture of the steps our red meat supply chain should consider taking to increase sales and extend market access,” he said.

Export pilot trial recommendations

Project funding partner on the domestic and international trial, MLA, cautioned that there was a high risk of product being marked-down in price or destroyed too quickly when abnormal temperatures are experienced during transport.

For example, abnormalities can be determined by temperature checks on arrival at distribution centres, which have limited value in determining food safety or shelf-life of product.

The project recommends a continuous review of the transit from processor to regional stores and undertaking a larger pilot trial to validate temperature control and consistency through the chain, which is a key factor in demonstrating the benefits of monitoring supply chains and controlling shelf life, especially for VSP beef.

In line with the recommendations, the data capture and analytical service provided by tech start up Escavox – an Australian company entering its third year of operation – is proving critical in providing the detailed intelligence food suppliers need to refine their supply chain arrangements.

“We’re really looking forward to the next phase of this project that will allow us to drill deeper than we’ve ever gone before into the long-haul supply journey of red meat exported out of Australia,” Mr Lyons said.

“The more exporters we have on board the better that picture will be, ultimately assisting all of us to pull more product through the system. That has benefits for the whole supply chain from paddock to plate.”

About Escavox trackers

Escavox designs and builds customised data trackers, the size of a standard mobile phone, that are placed with the product in a carton or container at the time of pack.

The trackers continuously capture information regardless of connectivity, remaining with the product as it moves through each transition point en-route to its destination, logging critical details such as dwell-time and temperature consistency.

Data is then fed into an algorithm that collates, analyses and interprets the information.

The shelf life model, developed by researchers at University of Tasmania, and jointly funded by MLA and Australian Meat Processor Corporation, takes the history from the Escavox trackers and provides the predicted remaining shelf life.

The full story of the product's journey, not only where it has been physically, but what it has experienced and how it is therefore likely to perform once it moves from the distribution centre to the retail shelf and beyond to the consumer, can then be told.

Already used extensively in the fruit and vegetable category, Escavox trackers are now receiving increased uptake within the red meat sector.

Source: Escavox