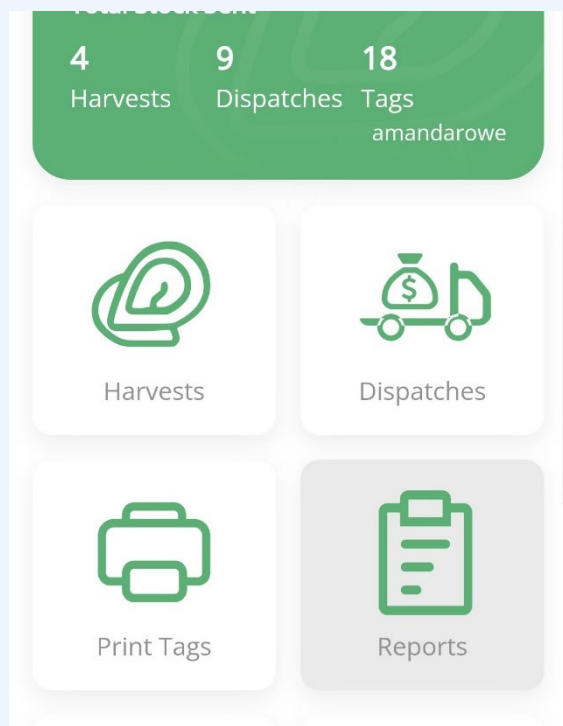# PIRSA
AgTech
Growth Fund

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SEAFOOD
INDUSTRY

Blue Farm Intelligence

Oyster traceability and cold chain pilot

A screenshot of the tag and trace app developed by Blue Farm Intelligence.

For self-confessed "IT nerd" turned Kangaroo Island oyster farmer Ken Rowe, traceability is paramount to maintaining trust with consumers. They need to know they are eating a safe and high-quality product.

Ken was able to combine his two passions of oysters and IT to develop the successful miShell app which helps shellfish growers with data collection, stock management and decision-making. miShell enables growers to track an oyster until it is harvested and packed.

However, post-harvest traceability was lacking and it was something Ken wanted to explore further – full traceability right through the supply chain from the water, to packing, transport, the wholesaler and to the plate.

With the help of the Department of Primary Industries and Regions (PIRSA) AgTech Growth Fund, Ken and his company, Blue Farm Intelligence, has been able to develop a 'tag and trace' app which is quickly garnering interest across the industry.

Government of South Australia
Department of Primary Industries and Regions

Industry challenge

The South Australian oyster industry was dealt a significant blow in 2021 with the outbreak of the vibrio bacterial infection.

Oysters infected with the infection caused food poisoning among consumers, leading to a temporary ban on sales of oysters from farms in the Coffin Bay area and product recalls across Australia. In addition, investigators had to go back and analyse cool chain data.

Upon investigation, it became clear that some oysters had been exposed to temperatures greater than 14 degrees Celsius and these were most likely to cause food poisoning. In other words, vibrio can be controlled through keeping temperatures low across the supply chain.

However, the challenge is tracking temperatures along the supply chain and enabling transporters, wholesalers and retailers to enter temperature data to ensure the oysters are safe to eat when they reach the consumer.

Approach

Ken's answer to this issue was to develop an app enabling collaboration across the supply chain that is cost-effective and easy to use for farmers.

"There are a lot of silos in technology solutions in that they don't integrate with each other," Ken says.

"The tag and trace app is a digital solution managed by oyster farmers. That was our guiding principle – it had to be useful to farmers and they had to see the value in it so they would use it."

Once oysters are harvested, the farmer can input all the relevant data into the app and print off a QR code which is then attached to the batch, be that in a sack or a box. At each stage of the supply chain, representatives can input data which links back to the same QR code, providing full traceability.

Ken says they have worked with industry and food safety regulators during the process to ensure the app captures all the required data as insurance against future outbreaks or other food safety concerns.

"The important thing about this app is it is an opt-in concept," he says.

"Mandating things to a farmer is very difficult and often met with opposition. However, because this technology is opt-in, it enables the farmer to only deal with areas of the supply chain who have the same approach to traceability and record all the required data.

"That encourages the different players in the supply chain to use it so they can prove they maintain the required temperatures all the way through and if there is an outbreak in the future, it will be obvious where the issue has occurred.

"The QR code can go all the way to the consumer, so they have traceability and truth of provenance and they know the oyster is safe to eat."

Outcomes

There are a number of oyster growers trialling the tag and trace app, and feedback has been positive.

"Growers are telling us it is saving them significant amounts of time being able to record all the required information into the app and being able to print the tags directly from the app, rather than having to hand write it all into forms or writing tags up by hand," Ken says.

"That time saving aspect and overall usefulness is so important. If it's not useful, farmers won't use it.
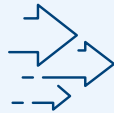
Future opportunities

Ken says the greatest opportunity with this technology is the ability to quickly trace any issues and rapidly recall stock if there are food safety concerns, ultimately saving the industry millions of dollars.

"During the 2021 vibrio outbreak, analysing cool chain data was a slow process, then stock was recalled or destroyed," he says.

"This solution could save industry millions of dollars if there was another outbreak purely through the time saving aspect."

While he knows there is a long way to go in producer adoption, Ken says they are already working on better integration in the supply chain.

"We are hoping to integrate it with sensor technology so the data could be automatically recorded," he says.

"There is also the opportunity to scale up this kind of technology and move into other areas outside of oysters."

Producer's view

Oysters SA Executive Officer Lynlee Lowe says it became clear during the 2021 vibrio outbreak that there was a significant gap with oyster traceability through the supply chain.

"Significant use of government resources and delays occurred due to lack of and difficulty obtaining information," she says.

"The tag and trace app will significantly assist in quickly obtaining information which will benefit implementation of the PIRSA Vibrio Control Plan, supply chain and industry as a whole.

"The greatest opportunity will be having most growers, processors, wholesalers and other participants in the supply chain all using the same platform.

"There are significant inconsistencies in how processors and wholesalers record information. This was troublesome during the vibrio outbreak which caused delays in case identification."

Contact

For further information about the PIRSA AgTech program:

Email pirsa.agtechresearchfarms@sa.gov.au

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