ROYAL HIGHLAND SHOW 2023
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RHASS Presidents' Initiative for 2023

The RHASS Presidents' Initiative for 2023 will raise awareness of the critical role science plays in our food and drink sector.

CASE STUDY: Automated weighing technology a gamechanger for Scottish beef finishing sector

AGRIEPICENTRE
Engineering • Precision • Innovation

Case Study Partner

Technology pioneers, Agri-EPI provide scientifically robust and commercially viable solutions to improve productivity and sustainability within the food production system using cutting-edge precision technologies, robotics and autonomous solutions and engineering technologies, and using data to reduce variance at producer level.

Overview

A commercial success story for Scottish agriculture in recent years has been the creation and adoption of the Ritchie Beef Monitor, an automated weighing unit which reduces labour needs and allows for higher accuracy of finishing cattle live weight and weight gains.

Innovations in technology such as automated weighing platforms have proved a gamechanger for Scotland's beef sector, improving data collection, driving better management decisions and boosting overall performance.

Ritchie Beef Monitor was borne out of a multi partner collaboration between David Ritchie (Implements) Ltd, SRUC, Scotbeef, and others (Harbro, Innovent Technology Ltd, Wm Morrison Supermarkets), driven by a shared determination to improve data collection and efficiency in Scotland's beef herds.

Technology pioneers, Agri-EPI Centre, were an early adopter of the system, working with several farmers to trial the platform on the ground.

CEO Dave Ross explained how the technology evolved into the success story it is today.

"These technologies eliminate the guesswork, improve data collection accuracy, reduce labour pressures and enhance animal welfare on farm."

– Agri-EPI Centre CEO Dave Ross

"The Ritchie Beef Monitor was borne more out of a need to automate and simplify data collection, to improve efficiency in farming operations."

Simplifying data collection

"Back when discussions first began, it was apparent that technologies for the dairy sector were way more advanced than that in the beef sector.

We weren't measuring performance factors such as average daily weight gains, so the Ritchie Beef Monitor was borne more out of a need to automate and simplify data collection, to improve efficiency in farming operations."

The weighing crate is fitted with a water trough, so when animals go to drink, they step on to the weighing platform and using EID ear tags, an accurate weight of each animal can be recorded and sent to the cloud, enabling beef finishing units to closely monitor the growth rate of their cattle.

Dave Ross continued: "Farmers want to know what their weight gains for individual animals are to assess productivity and efficiency. Poor productivity levels could be related to a poorly performing animal or one that is sick, and the data is able to differentiate the two.

One of the major benefits is it allows farmers to track optimum finishing points for individual animals and select the ones which meet certain finish conditions."

"This technology was a gamechanger for the industry, improving accuracy of finishing cattle live weight gains and ensuring we weren't turning out too fat cattle."

Farmer trials

One of the first farmers in Scotland to trial the new technology was Robert Neill of Upper Nisbet Farm in the Scottish Borders, who runs a herd of 300+ Limousin cross cows with all progeny finished on farm.

Robert took part in an Agri-EPI trial four years ago, which involved setting up two beef monitor stations on the farm and recording cattle weights over a three-month period.

"You can't monitor what you don't measure, so for us, this was an opportunity to capture data, particularly daily live weight gains, to make sure the nutrition we were using was doing the job correctly and to help us get to the target weight for fattening," he explained.

"Four years ago, when animals were plentiful, we were getting penalised for anything over 400kg carcase weight, this technology was a gamechanger for the industry, improving accuracy of finishing cattle live weight gains and ensuring we weren't turning out too fat cattle.

"The crate also allows cattle to be weighed multiple times a day without the use of labour and without moving cattle from their pens.

"We are lucky to have a good handling system on the farm, but for many who don't, or are short of labour, it minimises stress and time for both the stockman and their animals and improves health and safety.

"These technologies are helping us to be more efficient, but they are also a draw for the next generation who want to be working with the latest gadgets and seeing progress in the sector. I see this first hand working with my two sons on the farm, so if we can streamline these technologies to make them more reliable and workable, it is a no brainer for farming."

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This case study is one in a series, highlighting where farmers, across a range of different sectors, have benefited from scientific advancements.

Technology updates

Ritchie were the deliverers of the Beef Monitor and MD Andrew Edwards reflected on developments to the technology since its early release.

"This was a novel product for us to develop, as it was the first time we had moved away from essentially being metal fabricators, to adding value with technology, which would allow farmers to have live time monitoring of what is going on in the finishing pen," he explained.

"Since Ritchie Beef Monitor was launched four years ago, we have been in regular talks with farmers to hear their feedback on the technology and what changes they would like to see. This has resulted in a new app and SMS alert system which we launched this May, that sends messages to farmers if certain cattle aren't performing as expected, but also to let them know when an animal is ready for market.

"We now also have the ability to power the units with solar panels, allowing them to be used in fields, away from power sources.

"Farmers tell us that they are much more confident about sending animals to the abattoir knowing they won't be penalised, and the technology has also allowed them to push their weights up for additional productivity, without the risk of going out of spec.

"This is a very exciting space to be working in and the collaboration with farmers, ensures we are developing the technology in line with the demands of the industry."

Science and innovation

Mr Ross concluded by highlighting the huge role science and technology has to play in driving efficiencies in Scotland's food and drink sector.

"Science and innovation are the engine of improvement in agricultural output and have demonstratively been that engine throughout history. There are high levels of variance between the performance of the top and bottom 10% of farmers and what is missing, is the data to inform on management decisions and to optimise performance.

"One of the things we found astonishing when working with the Ritchie Beef Monitor was the national data on how many animals had been going to the abattoir over fat and the penalties farmers were receiving for overweight animals. These technologies eliminate the guesswork, improve data collection accuracy, reduce labour pressures and enhance animal welfare on farm.

"Science and innovation are an essential part of the delivery mechanism for a more sustainable future for agri food, one which delivers both economic and environmental success for food producers."

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Future case studies will be available at:

https://rhass.org.uk/presidential-initiative/

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