AMPC

SNAPSHOT

Electronic collection for animal health data

Background

Engaging with processors to provide accurate, timely feedback to producers has been a high priority for producer Peak Councils in recent years. Processors too have recognized the value of establishing timely and effective lines of communication between producers and processors. These processors are focused on creating a supply chain relationship which guarantees the quantity and quality of incoming livestock.

Supply chain assurance systems have the potential to improve the quality of incoming stock and an overall improvement in yield. An important part of the feedback is the timely provision of information especially health data.

Project Objectives

This project focused on the available technologies and software specifically adaptable to the meat inspection process and could improve the speed and accuracy of recording the diseases and conditions at post mortem. The focus was on capturing this data in high throughput sheep processing plants where chain speed makes it difficult to record health data either manually or on touch screens. This leads to a degree of estimation and memory work which can lead to errors in a pressured situation.

The project also focused on taking the health data and creating a database which can be used to produce reports for the processor, producers and national animal health databases.

This project has also identified the next steps in terms of rolling out the system, technologies and software to be used for a long-term trial in a production environment.

Gathering data on the slaughter floor

Post mortem Inspection on high speed sheep chains requires inspectors to make dispositions on viscera and carcases every 6 seconds. In that time the inspector can be looking for symptoms of up to 20 different diseases and condition. If comprehensive health data reports are to be gathered then the inspector will have to remember the incidence of diseases and conditions in a specific lot and record this before inspection on the next lot begins. If this is to be recorded on a touch screen or manually on record sheets it will still require more than the allotted 6 seconds especially if there is more than one disease to be recorded.

The project sought to assess the viability of voice recognition software and the electronic recording of the health data against a specific Lot. In particular, the project team was looking to create a system that would essentially be hands free and that would give the inspector audio feedback to know that the system was recording the data correctly without having to consult a screen.

Hardware and software for gathering inspection data

The slaughter floor is a challenging environment on which to operate such a system. The slaughter floor is a very noisy environment. Thus the initial challenge was to get a noise cancelling microphone and head set with a blue tooth function. There have been major advances in noise cancelling microphones and a unit produced by Dragon proved to function well in very noisy environments.

Initially, the voice recognition software was a free generic program which operated very well when operated in a simulated factory environment if it was trained for each inspector's voice. The computer and the headset had a Bluetooth connection and the system worked well in a simulated noisy factory setting. The software developed collated the incidence of a disease as called by an inspector e.g. hydatids called six times in a lot, liver fluke called twelve times in a lot. The software can prepare reports on each lot on the kill sheet. When the details of the NVD are entered into the software against the relevant lot a sheep data report can then be prepared for the producer, the processor and if required uploaded to the national sheep health data base

However, when the system was trialed on the slaughter floor it turned that the Bluetooth functioned at best spasmodically. It is likely that the electric motors on the floor interfered with the Bluetooth function. The system worked well with noise but not the interference.

To overcome this issue the microphone was cable connected to a very light Surface Pro carried in a harness under an inspector's white lab coat. In this configuration the hardware and software operated with 98% accuracy and reliably produced reports for the processor and producers.

A full-scale trial of the inspection data system

The system now needs to undergo a large-scale trial on three high speed sheep chains. The trials will enable any issues with hardware to be identified, assess the impact on inspectors and look at the format and content of reports and their usefulness to processors and producers.

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