Precision dairy technology

Electronic cow identification

What is the technology?

Individual cow identification is the tool that enables tracking of animals and their associated records. It relies on being able to distinguish two different animals and therefore manage them or their records independently.

In relation to this technology there are two main types of cow identification that have two different purposes:

1. The official National Livestock Identification System (NLIS)

This is the national program that assigns every NLIS accredited cattle tag in Australia a unique identification that is used to identify and record movement of these animals within a database in order to be able to trace them at any given point. Each NLIS identification number is unique and there are no two cows in Australia with same identification number.

All farmers in Australia must comply with the NLIS cattle program if they intend to move animals off a property. The farmer is not forced to tag animals at a particular point in time. As long as the animals are tagged prior to leaving that property then the producers are meeting their legal obligations. If the livestock do not move off the property of birth, then the farmer doesn't have to legally tag his animals.

It is an offence to remove an NLIS tag from an animal and apply another tag, unless the original tag is not working or has fallen out. NLIS-accredited devices for cattle must be electronic radio frequency identification (RFID) device such as an ear tag, or a rumen bolus/ear tag combination.

Types of NLIS-accredited RFID ear tags

2. The within-farm cow management identification

This is a system used within farms where each animal has a unique device that helps identify and keep records associated to that animal within a particular property. Unlike the NLIS cattle program, this system of cow identification is not compulsory, but farmers choose this within farm cow identification system to assist them in identifying individual cows and to assist them in better managing their herd.

There is no official accredited device to suit this management purpose, and there is a wide range of devices that are commercially available. Examples include numbers on a collar, a plastic ear tag with numbers or some type of electronic ID, neck collar or leg ID. Any within-farm cow management identification must not impede the operation of a NLIS accredited tag. Farmers might also choose other ways of identifying their animals such as photographs, freeze bands or collars. Cattle breeding organisations such as Holstein Australia might also require that registered animals carry additional identification such as two physical identifiers.

How do electronic cow identification systems work?

The electronic cow identification enables the farmer to identify the animals and to track a series of records, such as health, reproduction or management information of that particular animal. They also enable the farmers to adopt other technologies that monitor or collect other data or information as well as assist in farm routines and management practices. Other technologies that may also be linked to the within farm cow identification system include activity meters, sorting gates, milk meters, cow weigh scales or feeding systems.

For example, a farmer might choose to use electronic ID collars on the cows. Whenever the cows arrive in the milking parlour, the herd management system identifies in which position the cow is being milked and if the parlour has milk meters installed, the milk yield of each individual cow may be recorded. As the cow leaves the dairy, the operator might chose to sort cows that have produced below a certain threshold. Therefore, when the cows walk past a sorting gate, the antenna reads the electronic ID and sorts the cow.

What data do they provide?

The within farm electronic cow identification system in itself does not provide any information per se. However, the farmer is able to link it with other data, such as health treatments, animal performance and breeding records that may be collected, often electronically, so that the farmer has this data for each individual cow within their herd.

How can you use this information?

The within farm cow identification system allows the farmer to collate records and information on individual cows within the herd, so that they may be able to make much better informed decisions about future management of individual cows or the herd as a whole. They are also able to ensure traceability within their property.

The NLIS system is critical to be able to ensure traceability of animals as they progress through the whole supply chain. Each time that livestock are bought, sold or moved from one property to another, a livestock movement must be recorded on the NLIS Database. A National Vendor Declaration (NVD) or Waybill form may also need to be completed by the producer to comply with state legislation.

Potential issues

In the case of within farm electronic identification there may be a proportion of them that could be faulty and would need to be replaced. It is also possible that some cattle might lose the identification device at some stage and these would need to be quickly replaced.

Farmers must be very diligent in relation to record keeping and information management to ensure accuracy throughout the whole process. Every time a management decision is taken, the farmer should record it against that particular cow.

In the case of NLIS tags, it is an offence to remove them from an animal and apply another tag, unless the animal's original tag is not working or has fallen out. Every animal can be tagged with an NLIS-accredited breeder device in the property of birth.

Once an animal has been tagged, the tag should remain with the animal for life, but if it stops working/falls out and the animal is no longer on its property of birth, the farmer must tag the animal with an NLIS-accredited post-breeder device. To maintain lifetime traceability for the animal the replacement process must be uploaded to the NLIS Database.

Suppliers and cost

For the NLIS cattle identification system, a list of Accredited Devices for cattle can be found on NLIS website:

› Download the list of Accredited Devices

Some of these also connect to external sensors such as herd management software and cow weighing scales provided by other suppliers.

For the 'within farm management system', there are quite a number of suppliers of electronic ID systems embedded in tags and collars, usually commercialised through the suppliers of milking equipment. They include:

› DeLaval: delaval.com.au
› Daviesway: daviesway.com.au
› GEA Farm Technologies: gea-farmtechnologies.com

Further information

More detailed information about the use of cow identification is available from the following resources and websites:

› **National Livestock Idenitification System:** nlis.com.au
The NLIS website contains all the information relevant to the NLIS cattle identification program.

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