



Victorian Farmers
Federation
Livestock Group

Livestock Factsheet

➤ RFID for Sheep Management



What is RFID?

Radio Frequency Identification (RFID) is a method of recording a unique number that has been assigned to an electronic identification device carried by an animal. This provides each animal in the flock with its own individual identification number and forms part of the National Livestock Identification System (NLIS). RFID technology can be used as a means of tracking animals on property, through saleyards, feedlots and abattoirs to provide traceability. It may also be used on-farm to collect individual performance data such as weaning weights or used in conjunction with an automated drafting system. Electronic identification (EID) of sheep involves using RFID devices that can be carried externally on the animal such as an ear tag or internally with an RFID bolus.

Do I have to use RFID?

No. The use of RFID tags is voluntary, but are accepted under the current visual NLIS system for sheep and goats.

RFID Tags

The use of one type of device or both may be used to identify animals. Like the visual tag requirements, the standard for one-piece RFID tags now includes the colour system, e.g. lambs from the 2013 drop should be identified with a yellow coloured tag. Post-breeder tags, regardless of birth year, must be pink. These external tags may be preferred as producers can visually identify the age of the animal and prefer to have their property name printed on the tag as well as the NLIS number incorporating their property identification code (PIC).

RFID tags can either be one-piece like the current visual tags used or two-pieced such as an NLIS button. The tag component carrying the electronic microchip should always be placed on the inside of the ear. When using a two-piece button-like device, be mindful of tag orientation in the ear. When running sheep past a panel reader, the microchip is often on the underside of the ear due to the natural position of the sheep's ear. This can sometimes affect the reading ability.

Under NLIS law, tags are not allowed to be removed and reused. For example, a tag removed from a deceased animal must not be used to tag another animal. If a non-vendor bred sheep loses its electronic tag, then the animal must be tagged with a pink post-breeder tag. Currently electronic NLIS tags for sheep are available through DPI at the subsidised price of \$0.90 per tag.

For more information on the standard for RFID devices visit <http://www.mla.com.au/Meat-safety-and-traceability/National-Livestock-Identification-System/NLIS-devices>.

How does it work?

EID devices carry a microchip which stores the animal's individual identification code and requires specific RFID scanning equipment such as an RFID panel reader or hand-held wand to register the animal. When an electronically tagged animal is scanned by a reader, the reader sends out a signal to be received by the RFID tag or bolus. The reader is still able to scan tags that may be covered in mud or wool grease. Once received, the electronic device transmits a signal containing the animal's individual identification number back to the reader. Once the reader receives the number, information can be stored by the reader or sent to another storage device such as a weigh scale monitor or computer via Bluetooth or connecting a cable directly from reader or monitor to the computer.

Data analysed from the previous scanning may then be used to upload selection criteria into your RFID device to assist you with drafting the mob next scanning. For example, ewes identified as potential culls can have their identification number loaded into your RFID stick reader, so when the ewes are scanned again the reader will tell you which ewes you have identified as needing to be culled.

Do I need to purchase RFID reading equipment?

Electronic tags provide the ability to record sheep movements when required. This may not necessarily be on-farm and may occur along the supply chain, such as at the saleyards or abattoirs. Tagging your sheep with RFID tags does not mean you have to purchase EID reading equipment. RFID readers and

automated drafting systems should only be considered if you are looking to use precision sheep management (PSM) in your business and electronically record animals on-farm.

Contractors can be employed to scan electronically tagged sheep. They have their own RFID reading equipment, which they temporarily set up on-farm and are able to scan a large number of sheep per day. Contractors can also be employed to manage your scanned data, transferring data to your pc or phone in an easy to read format. This may be an option for those starting out with EID, as data management can often be an overwhelming process.

Things to consider

The decision to implement an electronic identification management system can be overwhelming; however it does not mean spending thousands of dollars on the most complex equipment available.

Before introducing an RFID management system into your business, it is strongly recommended that you do your research. When you make the decision to implement an EID management system, firstly decide what information it is you would like to record and the benefits you wish to gain.

Remember to consider the following questions before purchasing any equipment;

- Do I want to change my current practice? What am I looking to change?
- Will EID help me achieve these changes?
- What information do I want to record?
- What existing equipment, such as a computer, internet access and suitable yards, do I already have?
- What equipment, such as wand or panel reader, appropriate software, would I need to purchase?
- Am I capable of operating the software and equipment or would I need further training?
- Will it increase my income when I sell or buy stock?
- What are the direct and indirect costs?
- What will be the benefits or savings?

What information can I record?

If you are looking to use EID, the information you record will entirely depend on your own management needs and your short and long term business goals. Data that might be relevant to your needs may include;

- Weight gain
- Fleece yield and quality
- Animal health history

- Genetics and breeding history
- Nutrition
- Paddock-to-paddock movements

RFID management systems

Basic

Simple systems are available and are relatively inexpensive to set up.

Portable handheld/stick readers are entry level readers and are easy to use. This device, sometimes referred to as a wand, allows the producer to scan the electronic NLIS tag of each animal to record the RFID number. The RFID number is transferrable to a *weigh scale indicator*, smart phone or computer. This allows the producer to electronically document the RFID number of each animal which is valuable tool for recording stock numbers and movement (off the property to saleyards, abattoirs etc). Portable readers are useful for producers with multiple properties or yards. RFID numbers can also be uploaded to the reader for drafting. Latest portable handheld readers with built-in bluetooth and internal memory retail for \$1200-\$2000.

Permanent/panel readers, as the name suggests are permanently fixed onto a race and automatically reads the NLIS device. Basic versions are available and retail for around \$1600, or more capable systems are available which allow for upload and transfer of data. These systems offer connectivity with computer software and are practical for recording stock numbers and movement. Panel readers should not be mounted onto steel or aluminium as this interferes with RFID reading ability causing unreliable scanning results. If possible, panel readers should only be mounted onto wood. A wand should not be used in range of a panel reader as they cancel each other, causing tags not to scan.

Weigh scale indicators display weight and drafting statistics and have the ability to calculate average daily weight gains, carcass weight and also store tag numbers and condition scores. Entry level indicators retail from around \$1900. Top of the range indicators retail for around \$3000 and include internal bluetooth and the ability to record multiple traits and draft on RFID number and weight (with additional software).

Manual weigh crates provide producers with the ability to track, assess and record weights against the animal's individual RFID number. Manual weigh crates are lightweight (some can fit on the back of the ute) and offer easy drafting capabilities. Manual 3-way drafters are also available. Manual weigh crates retail from \$1200-\$2000.

Barcode printers and barcode scanners are available for fleece weight and data capture. Barcode printers retail from \$1000 to \$3000, while scanners retail for around \$300.

Advanced

More advanced systems, including auto drafters and handlers can be valuable tools for improving time efficiency and potentially reducing labour costs when working with large numbers of livestock and recording and analysing large amounts of data.

Sheep auto drafters are fully automated weighing and drafting systems that allow for individual sheep management. The NLIS tag on each animal is automatically read as it moves through the drafter. Sheep can be drafted on specified criteria, such as weight, condition score and micron, which allows the producer to select on performance, and therefore maximise profit. Many auto drafters include a remote control module and offer three-way drafting capabilities, meaning only one person is needed to operate the equipment. Auto drafting management systems can cost between \$10,000 and \$30,000. Read more about [Reducing Labour and Improving Efficiency with EID & Automated Drafting on the DEPI website](#).

When setting up your RFID system for your property, the equipment doesn't necessarily have to be from the one manufacturer. RFID equipment is still able to 'communicate' with equipment from a different brand. For example, a handheld stick reader from Shearwell is still able to transfer data to a weigh scale monitor manufactured by Trutest.

EID management requirements differ from farm-to-farm. Equipment suppliers and manufacturers are happy to visit on-farm to ensure suitable EID management systems are put in place.

Equipment Suppliers*

RFID Devices

Shearwell Australia
Phone: 1800 998 934
www.shearwell.com.au

Leader Products
Phone: 03 8339 9000
www.leaderproducts.com.au

Allflex
Phone: 1300 138 247
www.allflex.com.au

Victorian producers must order electronic NLIS sheep tags through the Victorian Department of Environment and Primary Industries Victoria (DEPI).

Scanning and drafting equipment

Gallagher Australia
Phone: 03 9308 7722
<http://www.gallagher.com.au/>

Shearwell Australia
Phone: 1800 998 934
www.shearwell.com.au

Technipharm
Phone: 1800 124 034
www.technipharm.com.au

Thunderbird
Phone: 03 9791 5800
www.thunderbird.net.au

TruTest
Phone: 1800 641 324
www.trutest.com.au

Software

Creative Logistics
Phone: 02 9982 1194
www.creativelogistics.com.au/

Fairport Farm Service
Phone: 08 9367 5814
www.fairport.com.au

Livestock Exchange Pty Ltd
Phone: 07 3264 6685
www.livestockexchange.com.au

Practical Systems
Phone: 02 6772 6672
<http://www.psystems.com.au/>

Sheep Software Solutions
Phone: 03 5158 0706
www.sheepsoftwaresolutions.com.au

*Not all RFID equipment and software stockists are listed, for more information visit www.dpi.vic.gov.au/agriculture/farming-management/nlis/sheep-and-goats/eid-equipment-software-suppliers.

Training

Sheep CRC and Rural Industry Skills Training (RIST)
Using eID for Sheep Management & Breeding Course
Contact RIST:
email: info@rist.com.au
Phone: 03 5573 0943

<http://www.sheepcrc.org.au/education/producer-training/eid-for-sheep-breeding.php>

For further information, please contact the VFF Livestock Project officers on 1300 882 833 or by email to livestock@vff.org.au.

Further Links

Department of Primary Industries Victoria

<http://www.dpi.vic.gov.au/agriculture/farming-management/nlis/sheep-and-goats/eid-equipment-software-suppliers>

<http://www.dpi.vic.gov.au/agriculture/farming-management/nlis/sheep-and-goats/will-an-electronic-identification-eid-system-benefit-my-sheep-production-enterprise>

<http://www.dpi.vic.gov.au/agriculture/farming-management/nlis/sheep-and-goats/on-farm-benefits-of-sheep-electronic-identification>

<http://www.dpi.vic.gov.au/agriculture/farming-management/nlis/sheep-and-goats/order-tags>

Mike Stephens and Associates (MS&A)

<http://www.msanda.com.au/sheepeid>

SheepCRC

<http://www.sheepcrc.org.au/education/producer-training/eid-for-sheep-breeding.php>

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Disclaimer

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Take Home Message

- Electronic Identification (EID) can be a valuable on-farm management tool and provides the capability for individual sheep management.
- Consider the benefits of EID to your production system.



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