
Managing animal identification

Introduction

Please read this entire document before taking any steps in terms of animal identification. This will ensure that the process you take is the best possible and that you get the results you require.

The accurate identification of recorded animals is essential for several reasons.

- Accurate identification is critical to ensure that the correct performance information is linked to the appropriate animal.
- The identification of lambs to their sire and dam is essential in order to build a robust pedigree. Pedigree is very important, especially for traits that are poorly inherited (such as number of lambs born and survival). Performance information from relatives helps to build up a picture of genetic merit, when the performance of individual animals is heavily clouded by random environmental events.
- Knowledge of pedigree is important to manage matings to avoid problems associated with inbred lambs.

The identification (ID) scheme

The new Sheep Ireland identification scheme enables lifetime animal identification through modification of the existing NSIS system.

On entrance to the Sheep Ireland LambPlus scheme, there is a requirement to adopt a modified animal identification system that has been established to facilitate accurate lifetime identification of individuals; irrespective of how many times they change from one flock to another.

The key attributes of this system are outlined below.

Inventory update

The permanent identification of existing ewes, rams, hoggets, and lambs in your flock will be required. This will entail not only the inclusion of a new tag into the right ear of the animals (see double tagging below) but also the linking of existing identification (whether it be a tattoo or within flock ID) to the new Sheep Ireland Identification so that Sheep Ireland can ensure that the existing performance information for each animal is linked to that animal's new permanent ID.

This will require you to do the following:

- For existing animals record the NSIS tag against the tattoo
- Record the sex of the animal (if required)
- Update the date of birth for each animal (if required)
- Update the animal's breed (if required)
- Complete the pedigree (sire and dam) for each animal (if required)
- Indicate whether the animal is still on your farm, has died on farm, or has been moved off your farm.
- Add any animals that are not listed in your inventory that are on your farm

This is carried out through a LambPlus service called inventory update, either via the web or by paper. If you are a web-based client then logon to the website to find inventory update and if you are a paper-based client you will have the necessary documents to complete the inventory update. All fields must be filled out for each animal.

Identification procedure

The new system (herein defined as the LambPlus ID) associated with Lambplus has a number of modifications and key attributes. The following protocols should be adhered to in the advent of the situations outlined below:

1. In the case of adult animals in a participating flock that have an NSIS tag in the left ear only, an identical tag can be placed in the right ear. In the case of animals that have entered into the flock and have a tag in the right ear, that right ear tag can be replaced with an identical tag to that in the left ear.
2. Double tagging at birth of all lambs with permanent, identical NSIS tags. This will not only provide lifetime identification of the animals but offers the ability to recover identification if it is lost from one ear.
3. The original left NSIS tag would become the permanent identifier. This will stay with the animal for its lifetime.
4. The like-for-like replacement of the NSIS tag (white) for all animals in either the flock of birth or another flock, providing the flock owner is a Sheep Ireland participant. This will ensure that no animal within the Sheep Ireland performance recoding scheme will have a change of ID (if a tag is lost), while involved.
5. If an animal moves from one participating LambPlus flock to another flock participating in LambPlus, the two original tags can be left in place.
6. If the animal moves to a non-participating flock, the normal NSIS rule applies and the right ear tag is replaced with the new flock owners tag. For Sheep LambPlus participating flock owners who purchase in stock from a non-participating flock or from abroad, like for like replacement of tags is allowed.

Some important comments about animal ID

Animal ID is fundamentally important. Where sufficient animals have a known sire and dam, Sheep Ireland builds a pedigree for a flock. When Sheep Ireland performs genetic evaluations, it uses the permanent LambPlus ID tag to build this pedigree. If errors in the pedigree (or parentage) have been found and they are corrected, the next time a genetic evaluation is performed, the new pedigree will be generated and used. So it is important to correct errors in ID when you become aware of them. The link developed between recorded progeny and the sire is not immediate in a sheep breeding situation (as it is in a cattle breeding situation). With natural mating, an association is made between the ram and the ewe by the mating group the ewe was in (this is recorded on a mating pre-list). It is not until the lamb is recorded to the dam that a link (essentially via the dam) is made

between the sire and the lamb. This is dissimilar to a cattle breeding situation where the sire is recorded at insemination.

Double tagging

Below are protocols for implementation of double tagging of existing animals, for LambPlus pedigree breeder flocks, including double tagging requirements and timing of tagging. Also included is a protocol for tagging lambs.

Pedigree breeders

Tagging existing animals

For pedigree breeders double tagging will be required with an identical tag to that of the existing NSIS tag in the left ear to be placed in the right ear. These tags will be ordered by Sheep Ireland once the inventory update is complete.

Timing of tagging

It is recommended that application of the second tag to existing animals be carried out as soon as possible (i.e. immediately after joining LambPlus). Application during the winter months will minimise infection of the tagged ear.

Suggested times:

- Pregnancy scanning
- 30 days pre-lamb at clostridium vaccination
- At lambing (allowing ewes and lambs to be double tagged at the same time)
- 40 day weighing
- At weaning

Tagging Lambs

There will be a requirement to tag lambs at birth, unless you are using DNA parentage. If you are using DNA parentage lambs will need to be double tagged at 40 days of age when DNA is collected. It is recommended that disinfectant be used around the tags at this time.

DNA parentage (DNA parentage recording flocks)

DNA parentage provides the opportunity to not only minimise the disturbance of lambing ewes and accurately identify each lamb to a dam, but also provides the opportunity to store DNA samples potentially valuable in the future. DNA parentage will be used to allow multi-sire mating, ensure accuracy of parentage recording, and reduce the work load required at lambing. This will mean that all ewes, rams, and lambs in flocks utilising a DNA-based parentage system will be DNA sampled.

As a participant in Sheep Ireland LambPlus breeders using DNA parentage:

- You will be required to record lambs at birth (data of birth and litter size), or alternatively detailed pregnancy scanning to determine litter size at scanning and foetal age can be used to obtain birth data. It is recommended that lambs be birth date recorded by spray marking on a weekly basis the lambs born in that time period, if detailed pregnancy scanning is not available.

DNA parentage (MALP flocks)

DNA parentage provides the opportunity to not only minimise the disturbance of lambing ewes and accurately identify each lamb to a dam, but also provides the opportunity to store blood samples potentially valuable in the future. DNA parentage will be used to allow multi-sire mating, ensure accuracy of parentage recording, and reduce the work load required at lambing. This will mean that all ewes, rams, and lambs in flocks utilising a DNA-based parentage system will be DNA sampled.

As a participant in Sheep Ireland LambPlus MALP:

- You will be required to record lambs at birth (data of birth by spraying colour codes for timeframe – the recommended protocol for this is outlined below), or alternatively detailed pregnancy scanning to determine litter size at scanning and foetal age can be used to obtain birth data. It is recommended that lambs be birth date recorded by spray marking on a weekly basis the lambs born in that time period.

General protocols for collection of DNA samples are presented.

General protocol

- These protocols are applicable to general sampling only using DNA ear tags; however specific sampling instructions will be provided by the technology company offering the product/ service, once this has been established.
- The ideal time for collection of DNA samples on progeny is at 40 days of age via ear cartilage with a DNA tag.
- Ewes and rams can be DNA sampled at any stage (prior to any selection or culling points in the progeny with time allowed for parentage to be established and genetic evaluation to be carried out) but it is recommended that this be done at mating. Over time, it might be expected that the majority of parents have had their DNA samples taken as lambs and repeat samples should not be necessary.
- Whichever instructions are used, they should be adhered to, to avoid contamination or ineligible DNA samples being taken.
- Ensure that prior to tagging the required numbers of tags are available.
- Read and understand the entire instructions before beginning.
- Ensure that enough information is recorded with the tags to enable identification of the animal (i.e. Sheep Ireland ID, sex, year etc).
- Ensure samples remain dry, cool and out of sunlight.

Some important comments about DNA parentage recording

The DNA sample does not need to be taken from lambs at birth; however, there is considerable importance in pregnancy scanning ewes whose lambs are to be matched using this method because:

- If DNA samples are not taken from dead lambs, there is no way to determine litter size of ewes and therefore DNA samples should be taken from dead lambs; and
- If recording of birth date and birth rank is not practical, then foetal aging (with ultrasound) is required (early-born, mid-born versus late-born) as a proxy for date of birth in order to correct for the environmental advantage accruing to lambs born earlier in the season and consequently having a higher age at measurement. Number of lambs present at pregnancy scanning should also be recorded.
- Alternatively, and easily achievable, lambs can be identified into weekly birth time frames by colour marking and location marking (i.e. shoulder versus rump) of lambs during lambing.

DNA parentage information

- Effective DNA parentage matching requires mating group and tail ringing group information to be recorded accurately. In DNA parentage, the sire and dam of the lamb are predicted as accurately as possible, however on occasions where the potential dam is established to half sisters, for example, the parentage may only be established to one of two dams. By providing mating and tail ringing group information (or 40 day tagging groups) the likely parents can be limited as much as possible. Ensure that mating and 40 day tagging group information is collected for ewes and lambs.

Electronic Identification (EID) (Flocks using EID)

This protocol can also be used by those performance recording flocks utilising EID. Electronic tagging will simplify data collection for all traits and also simplify animal management (drafting, feeding management, record keeping). The ewes may also be electronically identified. Tagging may be in the ear or via a bolus.

Training will be required in the installation and operation of electronic ID tags, hardware, and software, and this will be dependent on the product used and required systems for that product.

General protocol

- Installation of a race reader for sheep management will be required, and this to be integrated with electronic weigh scales and farm management software
- Installation of EID ear tags in lambs at birth. Using a bolus will require tagging at a later age only (weaning)
- Ensuring the maintenance of tags during the lifetime of the animal is essential (i.e. retag animals that have lost tags and ensure the appropriate data is linked to the new tag)