

# Unit Standard 24641

## Sheep Farming

Demonstrate knowledge of features, attributes,  
identification and records for sheep

Version 1    Level 2    Credit 2





# Lincoln University

*Te Whare Wānaka o Aoraki*

AOTEAROA • NEW ZEALAND

New Zealand's specialist land-based university

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## Learning Objectives

### Sheep Breeds in New Zealand

- Students credited with this unit standard will be able to **demonstrate knowledge of the breeds** of sheep in New Zealand, being able to tell them apart by their **physical characteristics** and...
- Be able to describe breed **production characteristics** (e.g. meat, dual purpose, fine wool, carpet wool, etc.)

### Age Classes of Sheep

- Students will also be able to identify age and other classes of sheep (lamb, ewe, ram etc.), and be able to list the types of animal identification currently in use on New Zealand farms.

### Required Stock Information

- Students will be able to describe the sorts of information that need to be recorded about sheep (either as individuals, or as mobs) on the farm, and how this contributes to the running of the farm.

### Methods of Recording Stock Information

- Students will be able to describe **methods of recording stock information and their usefulness to the management of the farm**

### Methods of Animal Identification and Recording

- And finally, students will be able to describe methods of identifying individual sheep (tags, ear marks etc.).

## Introduction

Of the farms in New Zealand, 44%<sup>1</sup> are sheep and beef operations. In June 2013, it was predicted there would be approximately 30.9 million sheep farmed here, a number which is diminishing due to the influence of dairy farming. There is still land in New Zealand that cannot be farmed intensively, for example the high country and some hill country, and therefore sheep will always have their place in the New Zealand economy. This module explores the predominant sheep breeds in New Zealand and their physical characteristics such as age, production and physical characteristics. We will also study the types of sheep identification and means of record keeping.

## Sheep Breeds in New Zealand

There are many different sheep breeds in New Zealand, each has its own purpose. In 2013, the most predominant breed was the Romney, making up nearly 50% of the total sheep breeds, as illustrated in Table 1.

Composite breeds, Perendales, Coopworths, Merinos and Corriedales are also present but not as prominent as the Romney.

*Table 1 Sheep numbers and breeds*



*Figure 1 Beef + lamb, NZ. (2015).*

*Compendium of New Zealand farm facts.* Retrieved from [www.beeflambnz.com](http://www.beeflambnz.com)

<sup>1</sup> Statistics New Zealand, Agricultural Census 2012



## Terminal Breeds and Maternal Breeds

*Terminal* and *maternal* are descriptions that are used on the commercial sheep farm. The ewe flock is composed of one or more *maternal* breeds, while a proportion of the rams are said to be *terminal* breeds, meaning that their progeny will not be kept but rather sent on a one way trip to the works. To summarise:

- *Maternal rams* are used to breed replacement ewe flocks.
- A *terminal ram* is bred to produce fast growing (quick finishing) lambs that are high yielding and ultimately destined for slaughter. The progeny (lambs) from a *terminal ram* will not be kept as ewe replacements (i.e. not retained in the commercial ewe flock).

Some examples of *terminal vs maternal* are as follows:

Maternal Breed	Terminal Breed
Romney	Polled Dorset and Dorset Down
Perendale	Southdown
Coopworth	Suffolk
Merino	Texel (the Texel may also be considered a maternal breed)
Corriedale	
Border Leicester	
Halfbred	
Drysdale	
East Friesian	

Breeds can also be classified into groups based upon their purpose. *Meat* breeds (e.g. Dorper), *wool* breeds (e.g. Merino) or *dual purpose* breeds (e.g. Romney). The *dual purpose* breeds are those which are bred with an equal emphasis on producing meat and wool.

## New Zealand Sheep Breeds

Farms are commercial enterprises where breeders and growers aim to improve the genetics of their flock to increase overall profitability. Throughout this section, each of the main breeds are studied by their characteristics, including why they have been bred and the reason they were introduced into New Zealand.

To understand sheep breeding and ram selection, it is important to understand something of the individual sheep.



*Figure 2 Ram hogget's grazing.*

Tweed, Bridget. (2015).

The breeds available in New Zealand are listed below, with the most predominant breeds listed first:

### Coopworth

The Coopworth was developed in New Zealand in the 1960s from the Border Leicester and Romney breeds, by Professor Ian Coop of Lincoln College, Canterbury. This breed has been exported to Europe, the United States of America and Australia. Coopworths are found widespread throughout New Zealand on lowland and improved hill country areas.

#### Features

The Coopworth is a dual purpose breed with an emphasis on meat and wool. It is a medium to large sheep with a white face and legs clear of wool.



*Figure 3 Coopworth ram.*

Ashton Glen Coopworth Sheep Stud. (2015). Retrieved with permission from <http://www.ashtonglen.co.nz/rams.htm>

#### Body weight:

Ewes are 50-60 kg. Rams 75-85 kg.

#### Breeding/lambing:

Lambing percentages are typically 120-180%.

### Meat:

Popular dual purpose meat animal.

### Wool:

Fibre diameter approximately 35-39 microns with a staple length of 125- 175mm and a fleece weight of 4.5-6.0 kilograms.

### Use:

The Coopworth breed is a major part of the New Zealand flock. They are used for both meat and wool production. The long staple and strong wool make the wool well suited to carpet use.

## Merino

The Merino was the first sheep in New Zealand and was landed in 1773 by Captain Cook. These sheep did not survive and were re-introduced in 1834. The Merino remained the major breed in New Zealand for many years with numbers peaking at over 14 million. There are currently approximately 2.5 million Merino sheep in New Zealand.

### Features

The Merino is a fine-boned, active sheep with a white face and legs. All rams and some ewes are horned. This breed is thought to be the oldest and most established breed of sheep in the world and believed to have originated from Spain and North Africa.



**Figure 4 Merino Sheep.**

Te Ara The Encyclopedia of New Zealand (2015). Licensed under the Creative Commons Attribution-Non-commercial. 3.0 New Zealand license. Retrieved from <http://www.teara.govt.nz/en/photograph/607/merino-sheep>

### Body weight:

Ewes 35-50 kg and rams 60 to 75 kilograms

### Breeding/lambing:

Lambing percentage is typically 75-100%.

### Meat:

Traditionally the merino has not been bred for meat. It is worth noting however that merino sheep produce a very lean meat and merino lamb has recently become a delicacy. It can be found on the menu throughout New Zealand in fine dining restaurants.

### Wool:

Fibre diameter is 17-24 microns, being a very fine, highly sought-after wool. The staple length is 65-100mm and fleece weight 3.5-5.0 kilograms.

### Use:

The Merino is a specialty fine wool breed, well suited to the high country of the South Island with dry conditions and lower quality feeds. This wool is highly sought-after for quality fashion garments. Recent developments have included a Poll Merino and a high fertility strain. The Booroola strain has been used to increase the fertility in other breeds.

## New Zealand Halfbred

The New Zealand Halfbred was developed in the late 1800s by crossing a merino with some longer woolled breeds, being the Leicester, Lincoln or Romney.

### Features

The Halfbred is a dual purpose breed with the emphasis on wool production while also producing a marketable lamb carcass. In comparison to the Merino, the Halfbred are known to have improved fertility and meat as well as being proven performers in unfavourable climatic conditions (Meadows, 2008).

The Halfbred is a polled breed with a white face and pink or black nostrils. They have a woolly poll and cheeks, with a thick, fine fleece which also covers their legs. Halfbreds are a medium framed breed.



*Figure 5 Halfbred ram.*

(From Meadows, 2008 p. 130).

### Body weight:

Ewes 50-60 kg and rams 55-65 kg.

### Breeding/lambing:

Lambing percentages are traditionally low at between 85 and 100%.

### Meat:

The lamb has a good carcass with fat level above some of the more modern and traditional meat breeds.



*Figure 6 Halfbred ram*

### Wool:

Wool is 26 to 31 microns with a 75-125mm staple and an average fleece weight of 4.0-5.0 kilograms.

Wairere Merino. Retrieved from

[http://waireremerino.co.nz/?page\\_id=17](http://waireremerino.co.nz/?page_id=17)

### Use:

The Halfbred is found mostly in the foothills of the Southern Alps but can also graze with the Merinos in some of the higher regions. This breed has improved the meat and carcass confirmation of the Merino and also produces a medium to fine wool.

## New Zealand Romney

The Romney is the main sheep breed in New Zealand and accounts for approximately 55% of the national flock. The Romney came from low wet marshlands in South-East England in the mid-1850s. Found widespread in New Zealand in almost all environments. It is the most predominant sheep breed in New Zealand and has been the basis of cross-breeding with the Cheviot to create the Perendale, and the Border Leicester to create the Coopworth.



*Figure 7 Romney rams.*

The Romney has been the basis of New Zealand's high reputation in the world market place as a producer of wool and meats.

Te Ohu (2011). Retrieved from <http://www.te-ohu-romney-rams.co.nz/romneys/>

### Features

The Romney is polled with a white face. Wool present on the poll, cheeks and legs. Black coloured hooves. Thick set facial features with a square shaped frame. Well-formed, heavy body shape.

### Body weight:

Ewes 45-75 kg and rams 70 to 100 kg; medium to large sized breed.

### Breeding/lambing:

Lambing percentage is typically 100-150%

### Meat:

Large lamb carcasses ranging from 15kg to 22kg on average.

### Wool:

Coarse wool of 33-37 microns and a staple length of 125-175mm. Fleece weight ranges from 4.5 to 6.0 kilograms.

### Use:

The Romney is a dual purpose breed with an equal emphasis on meat and wool production. Romney's are also used for prime lamb production, by mating with a terminal sire. They have long, medium lustre wool, used predominantly for carpet blends, furnishings, blankets and kitting yarns.

## Perendale

This is a New Zealand breed, being a dual meat and wool breed that was developed at Massey University. It was first registered as a breed in the early 1960s and developed by inter-breeding the Cheviot and Romney. It is now a popular sheep in New Zealand and Australia.

### Features

A small to medium-sized sheep that is very active with an alert face. Both the face and legs are clear of wool. There is often a small tuft of wool on the poll. It is an easy-care breed with few lambing problems and will survive well on lower quality feeds.



*Figure 8 Perendale ram.*

Perendale NZ, 2015. Retrieved from [www.perendalenz.com](http://www.perendalenz.com)

### Body weight:

Ewes 40-65 kilograms and rams 50-80 kg.

### Breeding/lambing:

Lambing percentage is typically 100-140%.

### Meat:

A good, dual purpose breed.

### Wool:

This wool is within the finer crossbred range and has a fibre diameter of 31-35 microns, being a medium to coarse wool, with a staple length of 100-150mm. Typical fleece weight is 3.5-5.0 kilograms.

### Use:

The Perendale is a very popular, dual purpose breed in New Zealand. The long wool has a low lustre and high bulk (due to the presence of a helical fibre crimp – like a corkscrew) which provides exceptional spring that adds to shape retention in knitted garments. It has good wool production and, being an easy-care sheep, is well suited too much of the harder hill country.

Some of the particular advantages of the Perendale are adaptability to hard hill conditions, the open face, the lambing percentage in relation to the country on which they are farmed and the easy-care factors.



## Texel

The Texel originated on the island of Texel in the North Sea above the Netherlands. It developed in harsh and bleak conditions and has an ability to thrive despite short growing seasons and poor pasture quality. It has become a very efficient converter of feed to meat. The Texel was introduced into New Zealand in 1984, and its' fast growth rate and lean lamb carcass has made it a popular choice for farmer's butchers and consumers alike.



*Figure 9 Texel ram.*

### Features

Texels are a smaller framed (low, wide body shape) breed but are very muscular with well rounded, large hind quarters. The legs and head of a Texel are relatively wool free. They can be easily recognised by their white 'pricky' ears, black nostrils and dark hooves.

New Zealand Sheep Breeders Association™ (2015). [Photograph] Retrieved with permission from <http://www.nzsheep.co.nz/index.php?page=texel>

### Body weight:

Ewes typically weigh 50-65kg and rams around 66-76kg.

### Breeding/lambing:

Well known for their excellent mothering ability. Lambing 120-170%.

### Meat:

Texels produce lean, tender, fine-grained meat; can be later maturing.

### Wool:

Bulky and very white in colour, moderate length and medium coarseness. Produce wool of approximately 33-37 micron, staple length of 75-125mm and yielding around 4.5kg per animal on average.

### Use:

Texels are predominantly a meat breed. Rams are often used as terminal sires to cross-breed with other meat producing sheep breeds. Wool from Texel sheep is commonly produced for the bedding and high quality carpet trade.

## Borderdale

The Borderdale was established in New Zealand in the late 1960s. This breed was developed by crossing the Border Leicester and Corriedale. Borderdales are well suited to irrigated or light pastures as well as rolling hill country areas throughout New Zealand. Currently only a small population in New Zealand.



*Figure 10 Borderdale ewe and lambs*

(From Meadows, 2008, p. 102).

### Features

The Borderdale is a medium to large, hardy breed with a low susceptibility to footrot. These sheep have a good growth rate and ewe lambs are able to be mated under one year of age. It is considered to be a dual-purpose breed with good milk production.

Borderdales are a polled breed with a white open face. Their poll is covered with wool and their overall fleece typically long.

### Body weight:

Ewes are typically 55 - 70 kg and rams 73 - 95 kg.

### Breeding/lambing:

Lambing percentages range from 120 -160%

### Meat:

A large, lean prime lamb with a long carcass and good hind quarters.

### Wool:

Ewe wool is 33-36 microns with a staple length of 100-150mm. Typical fleece weight ranges from 4.5-6.0 kilograms.

### Use:

A dual-purpose breed, the Borderdale is often used for cross breeding with terminal sires for meat breeds. The wool is used for home spinning, commercial hand knitting yarns and heavy-weight apparel.



## Border Leicester

The Border Leicester is an old English breed dating back to the mid-1700s and has been in New Zealand since 1859. It has been a major contributor to the high fertility and hybrid vigour in terminal flocks in New Zealand. The Border Leicester has been a contributing sire in the development of a number of new breeds both within New Zealand and around the world, however it is no longer as common throughout New Zealand. They are found mostly in stud flocks and used for cross breeding.



**Figure 11 Border Leicester ram.**

### Features

The Border Leicester is a large, long-legged breed. Its most distinctive feature is its pronounced Roman nose. It is a polled<sup>2</sup> breed with wool free face and legs.

New Zealand Sheep Breeders Association™  
(2015 Retrieved with permission from)  
<http://www.nzsheep.co.nz/index.php?page=border-leicester>

The Border Leicester is reported to be a sheep of high intelligence.

### Body weight:

Ewes 60-70 kg and rams 70-85 kg.

### Breeding/lambing:

Lambing percentages range from 110-160%. They have excellent mothering abilities and milk production.

### Meat:

Large, lean meat lambs are produced with good growth rates.

### Wool:

Strong, being 37-40 microns with a 150-200mm staple length. The average fleece weight ranges from 4.6 to 6.0 kilograms. The fleece is a high lustre wool with a low bulk.

### Use:

The Border Leicester is a dual purpose breed; the wool is most commonly used for upholstery and machine-mad carpet yarns.

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<sup>2</sup> *Polled* refers to the animal being hornless.

## Cheviot

Cheviot sheep were introduced into New Zealand in the mid-1800s, having originated from the border lands between England and Scotland. Their population declined in the early 1900s but increased again in the mid-1940s. The Perendale breed is derived from the Cheviot sheep. The Cheviot is a popular breed and often used when mating hoggets for ease of lambing because of their narrow brisket and smaller frame.



*Figure 12 Cheviot ewe and lambs*

(From Meadows, 2008, p. 104).

### Features

The Cheviot is a compact, short-legged sheep, polled with a white face and legs free of wool. Pointy upright ears.

### Body weight:

Ewes are 40-55 kg.

### Breeding/lambing:

Typical lambing percentages range from 90-110%.

### Meat:

Used for meat production. Produce a fine-grained meat.

### Wool:

A bulky, low-lustre wool with a fibre diameter of 28-35 microns and a staple length of 75-100mm. Fleece weight is typically 2-3 kilograms.

### Use:

The Cheviot sheep have been used in the Central North Island high country on some of the harder land areas as this breed is a hardy animal well able to survive on poor pasture and in harsh feed situations. The Cheviots are typically a dual purpose breed, to produce cross bred ewes and prime lambs. Wool production is low; however because of the bulk of the wool, the wool is used for carpet, knitwear and tweed fabrics.

## Corriedale

The Corriedale sheep was established in the early 1900s in the southern hemisphere having been from crosses of the Merino, Romney and Lincoln sheep. It was initially developed in the Corriedale locality in North Otago and is now is a prominent breed in the dry regions of New Zealand.

### Features

The Corriedale sheep is a flexible, medium-sized breed, well suited to a dry environment. It has a flock life of up to seven years and is described as being a dual purpose breed with an equal emphasis on both meat and wool. Corriedale rams are used for crossing with Romney or Perendale flocks to increase their body size and improve the fineness of the wool.



*Figure 13 Corriedale ram*

New Zealand Sheep Breeders Association™ (2015)..  
Retrieved with permission from  
<http://www.nzsheep.co.nz/index.php?page=corriedale>

Corriedales are polled, with soft white faces and dark nostrils. Wool present on their legs and poll.

### Body weight:

Ewe 65-80 kg and rams 85-105 kg

### Breeding/lambing:

Lambing percentages range from 90-130%.

### Meat:

This breed has a good length carcass and muscling to provide lean lambs for slaughter at an early age. The Corriedale breed heavy grade lambs are also popular.

### Wool:

The fibre diameter is 28-33 microns and a 75-125mm staple length. Fleece weights range from 4.5-6.5 kilograms.

### Use:

The Corriedale provides good lean meat while also providing a medium to fine wool that is well suited to garment production.

## Dorper

The Dorper sheep are recent introductions into New Zealand from South Africa. The Dorper is a meat breed with a low fibre production. It was bred from the Dorset Horn and the Blackhead Persian.

### Features

The Dorper is a well-balanced sheep with a strong, wide body. The rams are well muscled. The ewes are lighter in the front and bigger and heavier towards the back. They are best described as being long with a triangular-shaped body, for this reason, they are popular for hogget mating. The Dorper has long ears and often has small horns. The head is covered with a short dull-black 'hair' while the white Dorper has white 'hair'.

Dorpers shed their own hair or fleece, during the Summer months.

### Body weight:

Rams 100-114 kg and ewes 77-90 kg.

### Breeding/lambing:

150% - 180% lambing with two lambings per year producing a total of 2.25 lambs per ewe per annum. They are good mothers.

### Meat:

Long and wide rumps. Lambs have good growth rates with lambs reaching 36 kg live weight at three to four months of age.

### Wool:

Hair or wool covered. Part of their attraction to some farmers is that they don't need to be shorn.

### Use:

The sheep are well suited to a variety of conditions and adapt well to both semi-tropical conditions and arid conditions. There is a growing interest in the Dorper as a meat breed that does not require shearing often.



*Figure 14 Dorper rams.*

New Zealand Sheep Breeders Association™ (2015). Retrieved with permission from <http://www.nzsheep.co.nz/index.php?page=dorper>



*Figure 15 Dorper lambs*

New Zealand Sheep Breeders Association™ (2015). Retrieved with permission from <http://www.nzsheep.co.nz/index.php?page=dorper>

## Dorset Down

The Dorset Down is an old English breed from the early 1800s and was developed by mating the Southdown ram with large Hampshire Down, Berkshire and Wiltshire ewes. The Dorset Down breed was first introduced into New Zealand in the 1920s but re-evolved from the mid-1940s. It is a popular breed in New Zealand with the rams used as terminal sires.

### Features

This is a medium-sized sheep with a brown face, ears and legs. Rams will produce a meat with a very high meat to fat ratio.

### Body weight:

Ewes 60-80 kg and rams are 100-130 kg

### Breeding/lambing:

Lambing percentages are typically 100-140%.

### Meat:

High proportion of meat to fat.

### Wool:

A fine wool, being 26-29 microns with a 50-75mm staple length. The typical fleece weight is 2-3 kilograms. The wool can be contaminated with black fibre as there is a potential for black kemps within the fleece.

### Use:

The wool is used for hosiery, fills and bedding while the lambs provide a good quality meat with a lean, high-yielding carcass.



*Figure 16 Dorset Down ram.*

New Zealand Sheep Breeders Association™ (2015). Retrieved with permission from <http://www.nzsheep.co.nz/index.php?page=dorset-down>



*Figure 17 Dorset Down rams.*

Image by Andrew Ritchie, 2015. Licensed under creative commons Attribution-NoDerivatives 4.0 International

## Drysdale

The Drysdale breed was developed in New Zealand in the 1930s, by Dr Francis W Dry, at Massey University. The Drysdale is a result from crossing a Cheviot and a Romney, more specifically a Romney which carried a mutant gene for hairiness (the 'Nd' gene). In the late 1920s, Dr Dry began researching the inheritance of the hairiness from the mutant gene. Very hairy fibres (halo-hairs) were identified and a search was made for rams which carried this gene. By the 1940s, the gene that caused the halo-hairs was established and the Drysdale breed developed. There was a commercial goal underlying this development. At the time, the fibre from the Drysdale was highly sort after as it became a vital component in New Zealand carpet blends.



**Figure 18 Drysdale ram.**

### Features

The Drysdale sheep is a horned breed that has a white face. It is a medium to large sheep with both the legs and the face clear of wool. It is described as being a dual purpose animal for both meat and its' very coarse hairy wool. The horns on the Drysdale ram are typically heavy and curled while the ewes tend to have shorter and only slightly curled horns. The fleece is heavily *medullated*<sup>3</sup> and often very long.

Te Ara The Encyclopedia of New Zealand (2015).  
Licensed under the Creative Commons Attribution-  
Non-commercial. 3.0 New Zealand license. Retrieved  
from  
<http://www.teara.govt.nz/en/photograph/16647/drysdale-ram>

### Body weight:

Ewes 55-70 kg and rams 75-100 kg

### Breeding/lambing:

Lambing percentages regularly exceed 120%.

### Meat:

A good quality lean meat.

### Wool:

The wool typically has a fibre diameter of 40+ microns with a staple length of 100-150mm harvested twice a year. The fleece weight ranges from 6.5-8.0 kilograms. The fleece can be teased out into two distinct fibre groups; being the short fine fibres that are underneath the long coarse fibres.

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<sup>3</sup> *Medullated* is a term used to describe how hollow or partially hollow the core of wool fibre is; the hollowness gives the fibre different physical properties for example bending resistance or even its ability to take up dye.



### Use:

The wool is known for its whiteness and has special carpet manufacturing qualities due to the medullated fibres. The medullated fibre makes a stiff and harsh fibre that is well suited to carpet use. It is generally free from black fibres, contamination and has very low levels of kemping<sup>4</sup>. It has a very high bulk fibre. The breeding of the Drysdale sheep is a very good example of how a recessive or dormant gene was identified and crossed to a position where it became the most common (homozygous) gene in a breed.

## East Friesian

Introduced in 1992 as a milking sheep and also to improve the level of fertility in some meat-producing breeds.

### Features

The East Friesian is a sheep with a large frame, a thin tail, very clean back end and legs clear of wool. They have a very high level of fecundity (ability to have multiple births) and high milk production. They are occasionally used to cross with other milking sheep breeds (to improve milk production) or with meat breeds to improve fecundity and milk production. The East Friesian is therefore considered to be a dual purpose breed with the sires suited to creating crossbred ewes or as a terminal sire.



*Figure 19 East Friesian Ram.*

Graham Meadows Ltd. Retrieved with permission from <http://www.gmpl.co.nz/>

### Body weight:

Ewes 65-85 kg and rams 100-125 kg

### Breeding/lambing:

Lambing percentages of up to 280% in mature ewes have been recorded.

### Meat:

Very good lamb growth rates and a good lean carcass is produced.

This breed is the most productive milk sheep breed in the world producing 500-600 litres from a 210-230 day annual lactation.

### Wool:

Coarse wool of 35-37 microns with a 120-160mm staple length and an average fleece weight of 4.0-5.0 kilograms.

### Use:

This sheep is mostly used for milk production for milk powders, cheeses and other dairy sheep products. It makes an ideal carpet weight. It is a very fertile sheep that is used for cross breeding to increase fecundity

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<sup>4</sup> *Kemps* are a short, coarse hairy fibre found in fleece; short hollow fibres.

of a flock. The East Friesian is similar to the Finn in many instances with up to ¼ crosses used to improve the fecundity and milking ability of a flock.

## English Leicester

This is a very minor breed in New Zealand with a population of around 15,000 (Meadows, 2008). The English Leicester is one of the early breeds introduced into New Zealand and is currently used in stud flocks and for cross breeding. In early days, it was used extensively as a cross breeding sire to help develop sheep well suited to New Zealand conditions. At the turn of the century it was the third most common breed in New Zealand. Flock numbers began to decline from the early 1900s but it is still crossed with the Merino to produce the New Zealand Halfbred.



*Figure 20 English Leicester ram.*

New Zealand Sheep Breeders Association™ (2015). Retrieved with permission from <http://www.nzsheep.co.nz/index.php?page=english-leicester>

### Features

This sheep has a curly-locked wool. It has a strong neck, a level back and a deep carcass. The long and curly-locked fleece is a distinctive feature of the breed.

### Body weight:

Ewes 55-70 kg and rams 73-93 kg

### Breeding/lambing:

Typically achieve lambing percentages of 100-150%.

### Meat:

Deep body with good meat production.

### Wool:

37-40 microns with a staple length of 150-200mm and a fleece weight of 5-6 kilograms. The staple is long and lustrous with good bulk and a well-defined crimp.

### Use:

A dual purpose breed, mainly used for creating the well-known New Zealand cross-bred ewe. The wool is well suited to clothing and other fabrics and the breed has been used for improving the meat quality of the Merino. The New Zealand Halfbred is an English Leicester/Merino cross.



## Finn or 'Finnsheep'

The Finn sheep is an ancient breed native to Finland. They are also known as Finnish Landrace and are one of several north European short-tail, landrace breeds. This breed is famous for its very high fecundity (with 3 or 4 lambs per birth being standard). In New Zealand, Finns have developed into a dual purpose breed, not only do they produce fine wool but a lean, non-fatty carcass too.



*Figure 21 Finnsheep.*

### Features

Finn sheep are very active and highly fertile. They have an excellent mothering ability and are also highly resistant to facial eczema. A shorter tail is also present.

New Zealand Sheep Breeders Association™ (2015). Retrieved with permission from <http://www.nzsheep.co.nz/index.php?page=finnsheep>

This breed has a polled white face with a pink nose and white lustrous wool. It has a long body with long, wool free legs. Finns can be found throughout New Zealand in a wide range of climatic conditions.

### Body weight:

Ewes 50-70 kg and rams 66-93 kg

### Breeding/lambing:

Lambing percentages of 175-250% are common but have the ability to lamb over 300%.

### Meat:

Finnish sheep produce a lean carcass.

### Wool:

Fibre diameter of approximately 24-27 microns with a staple length of 75-125mm. Fleece weight is typically 2.5-4.0 kilograms.

### Use:

Wool from purebred Finn sheep is used for interior textiles. It was anticipated that the Finn sheep could continue to add flexibility to the New Zealand flock with its high level of fecundity, rapid lamb growth, long, lean carcass and fine lustrous wool. However, because of the negative genetic gains in constitution of the progeny, many farmers in recent years have either moved away from or reduced the percentage of Finn in their maternal flock. The resistance to facial eczema is extremely important in the North Island. Many farmers will cross the Finn into a flock to improve the lambing percentage especially with the Romney, East Friesian or Texel. The proportion of Finn in these instances rarely exceeds a 1/8<sup>th</sup> in today's flocks.

## Hampshire

The Hampshire sheep was developed in Hampshire, England, during the 19<sup>th</sup> century by crossing the Southdown rams with the old Yorkshire Horn and Yorkshire Knot breeds. Both of these are now extinct. The Hampshire officially became a breed in 1889 but was already in New Zealand in 1861.



*Figure 22 Hampshire rams.*

### Features

This is a sturdy, active sheep that requires little care and generally has a trouble-free lambing. The conformation of the New Zealand Hampshire has changed over the years to meet meat-grading changes and today has a finer shoulder and a more open face. The Hampshire is a black/dark faced, polled breed. They have dark nostrils and long, thick dark ears which have a slight curve. They have a short down-type fleece and often wool present on cheeks and the poll area. Legs and hooves are also dark.

New Zealand Sheep Breeders Association™ (2015). Retrieved with permission from <http://www.nzsheep.co.nz/index.php?page=hampshire>

### Body weight:

Ewes 80-100 kg and rams 100-120 kg.

### Breeding/lambing:

Lambing percentages are traditionally between 95 and 120%. Ewes have good mothering ability and milk production.

### Meat:

An excellent producer of prime lamb as the meat is lean and of good quality with very good colour. The conformation of the sheep provides for a maximum meat cover with minimum fat cover.

### Wool:

The wool diameter is 26-30 microns, being a finer down wool free of black fibre. Typical staple length is 50-75mm and the fleece weight ranges from 2.0-3.0 kilograms.

### Use:

The wool is used in the hosiery industry and for hand-knitting and yarns. The ram is often used as a terminal sire. Sire selection is based on early maturity, a minimum number of over fats and a high survival rate from trouble-free lambing. The lambs have a good growth rate.

A feature of the meat is there is plenty of length from the last rib through to the tail and good muscle in the back legs. The carcass is described as being deep and symmetrical with a broad, straight back, flat loins and a wide rump. There are approximately 5000 ewes in New Zealand. The importance of the breed is not readily reflected in the number of ewes in New Zealand as it is the lamb production and the use of terminal sires from that gives the breed any importance in this country.

## Lincoln

The Lincoln is one of the oldest, long-woolled breeds and is known to have been in existence since the mid 1700's. The breed arrived in New Zealand in the 1840's and was originally crossed with the Merino. The use of the Lincoln breed peaked in 1900 when over 40% of the rams used in New Zealand were Lincolns. The Lincoln, along with the Merino and Romney, was an important breed in the development of the Corriedale. The Lincoln breed developed the reputation of being one of the heaviest wool-producing breeds and the heaviest meat-producing breeds in the world.



*Figure 23 Lincoln ewe and lamb.*

New Zealand Sheep Breeders Association™  
(2015). Retrieved with permission from

<http://www.nzsheep.co.nz/index.php?page=lincoln>

### Features

The Lincolns are known to have a strong and lustrous wool.

They are moderately resistant to foot rot and the lift fleece weight of the progeny from almost any cross.

The ewes have good mothering ability and produce early maturing lean lambs.

Lincolns are polled with a white face. They have a distinctively long, thick fleece with wool present on legs, right down to their hooves.

### Body weight:

Ewes 55-70 kg and rams 73-93 kg.

### Breeding/Lambing:

Lambing percentage ranges from 100-130%.

### Meat:

The Lincoln has a long cannon-bone and heavy, well-muscled carcass and produces good export lambs. It has a long, lean carcass with a meaty leg muscle.

### Wool:

This is a long, coarse, lustrous wool with a soft handle and heavy fleece of 37-42+ microns with a staple length of 145-200mm. The fleece weight ranges from 7.0-12.0 kilograms.

### Use:

Lincolns are predominantly used for cross-breeding where increased wool weight is required. The wool is used where high strength is required and specialist upholstery yarns. It is often used to make wigs for Barristers.

Some of the particular advantages of the Lincoln are exceptionally heavy wool weights, good mothering and early maturing lambs. There is an immediate lift of up to 25% wool weight when crossed with almost any breed and there is an increased wool pull on lambs.

Lincoln sheep are a hardy breed and have the ability to withstand cold, harsh and wet conditions.

## Oxford

This breed was developed in the 1830's by crossing the Cotswold and the Hampshire. It first came to New Zealand in 1906, it later died out but was re-introduced in the 1980's. Currently, there are limited stud flocks of Oxford sheep in New Zealand, with numbers thought to be around 400 (Meadows, 2008).



*Figure 24 Oxford rams.*

### Features

The breed produces a large, meaty carcass and has a very high wool production when compared with other terminal sires. The Oxford was the largest and fastest-growing of all British breeds and wool production is higher than other down breeds.

New Zealand Sheep Breeders Association™

(2015). Retrieved with permission from

<http://www.nzsheep.co.nz/index.php?page=oxford>

Oxford sheep have a brown face and brown nostrils. They also have wool present on their cheeks and poll area. Their fleece is short and consists of down-type wool.

### Body weight:

Ewe 65-80 kg and rams 85-106 kg.

### Breeding/lambing:

Lambing percentage is typically 90-120%.

### Meat:

A large carcass with lean meat.

### Wool:

A down-type wool of 33-37 microns, a staple length of 100-150mm and a fleece weight of 3.0-4.5 kilograms.

### Use:

The Oxford provides a quality terminal sire for prime lamb production. The heavy carcass has lean muscling and an above average body weight carcass.

## Poll Dorset

The Poll Dorset was developed in Australia by a Dorset Horn studmaster who saw the advantage of breeding horns out of the breed. A Corriedale ram and Ryeland ram were used. It took approximately ten years to establish the lines with two copies of the poll gene stabilised. The Poll Dorset breed was established in New Zealand in 1959.



*Figure 25* Poll Dorset rams.

New Zealand Sheep Breeders Association™ (2015). Retrieved with permission from <http://www.nzsheep.co.nz/index.php?page=poll-dorset>

### Features

The Poll Dorset provides a long, well-muscled carcass, free of excess fat. Ewes will breed over an extended mating season and therefore capable of breeding out-of-season lambs. Ewes may breed twice a year. It is a hardy and vigorous breed with rapid growth rates and ewes with good mothering and milking ability. The ram is typically used as a terminal sire.

The Poll Dorset has a white face, clear of wool. Pink skin and pink nostrils. Wool is present on the poll of the sheep, they have a fine, dense fleece with minimal wool present on the legs.

### Body weight:

Ewes 65-85 kg and rams 80-120 kg.

### Breeding/lambing:

Lambing percentage is 130-180%. Ewes have good mothering and milking ability.

### Meat:

Meat production for early and out-of-season lambs. There is a very rapid carcass growth recorded.

### Wool:

A short, down-type wool that is comparatively fine. It is very white wool with a typical fibre diameter of 27-32 microns, staple length of 75-100mm and fleece weight of 2.0-3.0 kilograms.

### Use:

The Poll Dorset is predominantly a meat breed, used as a terminal sire. The wool harvested is mainly used for the production of dress fabrics, flannels, fine tweeds, hosiery. The skins can also be used to line boots and shoes in the fashion industry.

## Polwarth

This breed was established 100 years ago in Victoria, Australia. It is a dual-purpose breed, developed around 1880, from the original Merino and Lincoln. It was originally selected for its wool type, fertility and meat production and is considered to be a very versatile breed. It was established in New Zealand in the mid-1930s, with current numbers of around 160,000 (Meadows, 2008).



*Figure 26 Polwarth ram.*

### Features

The conformation of the sheep for wool and meat production is the main basis for the development of the Polwarth. They are identified by their polled, wool free white faced appearance, with pink nostrils. Wool is located on legs right down to the white hooves.

New Zealand Sheep Breeders Association™  
(2015). Retrieved with permission from

<http://www.nzsheep.co.nz/index.php?page=polwarth>

It is a big-boned, framey, medium-sized, fine woolled, hardy breed. Although it is a dual purpose breed, there is a major emphasis on wool production. The ram is often used for cross-breeding to finer Down flocks that have coarser wool to increase the staple length, the crimp and the quality of other breeds.

### Body weight:

Ewes 50-60 kg and rams 66-80 kg.

### Breeding/lambing:

It should be noted that the Polwarth can be bred at any time of the year and they have an easy, care-free lambing at 100-120%.

### Meat:

Meat is generally said to have reduced fat cover and very good eye muscling. It is early-maturing.

### Wool:

A typical fleece is 23-25 microns, being a fine wool. Fleece weight is 5+ kilograms and it is very resistant to fleece rot in areas with a high rainfall.

### Use:

The Polwarth is a dual purpose wool and meat breed, well suited to a wide range of farming enterprises. They have an ability to maintain body weight under extreme conditions. This breed has high wool quality, high weights, sound feet and the ability to produce good lambs.



## Ryeland

This is an old English breed developed in the 15th century and first came to New Zealand in 1903. The breed was developed for its hardy constitution and its wool-growing ability. The Ryeland was originally a small breed of sheep, it has since developed into a strong, medium-sized breed popular throughout many countries around the world but not so common in New Zealand.



*Figure 27 Ryeland ewe and lamb.*

New Zealand Sheep Breeders Association™ (2015).  
Retrieved with permission from  
<http://www.nzsheep.co.nz/index.php?page=ryeland>

### Features

The Ryeland is a moderately small breed, easy to handle (docile) and is very tolerant of a wide range of conditions. It is often considered well suited to small lifestyle farms.

Ryelands can be identified by their broad pink noses and their short down-type fleece which carries well down the legs to the feet. They also have a broad straight back.

### Body weight:

Ewes 50-65 kg and rams 66-80 kg.

### Breeding/lambing:

Lambing percentage is typically 100-120%.

### Meat:

The lambs are heavy and the meat grades well in most cases. They are well suited to the butcher trade. It is a well fleshed, lengthy commercial cross-bred carcass.

### Wool:

23-32 microns with a varying staple length of 75-175mm and an average fleece weight of 5.0 kilograms. It is a short, down-type wool that is comparatively fine with a dense staple.

### Use:

The Ryeland is a docile sheep and the wool is well suited to hand spinning. It has a good meat quality and is often a sheep of choice for small-lot farmers. Rams are used as terminal sires predominantly.

## Southdown

This was the original down bred from the rolling country of Sussex, England, and was one of the early arrivals to the sheep industry in New Zealand in the 1840s. The Southdown is an early maturing and compact sheep which, at one stage, totally dominated the New Zealand fat lamb sire market. Changes in carcass requirement has meant the Southdown has lost market share and is no longer common in New Zealand.



*Figure 28 Southdown rams.*

### Features

It is a moderate sized sheep with a mousey-coloured face covered in short wool. It has a compact but well-built body on short, woolly legs.

Retrieved from [www.southdownsheep.org.nz](http://www.southdownsheep.org.nz)

Southdowns can be identified by their broad foreheads and mousey-brown coloured faces. Their fleece consists of a short down-type wool which extends down their legs.

### Body weight:

Ewes 50-80 kg rams are 100-150kg.

### Breeding/lambing:

Lambing percentage is typically 100-120%.

### Meat:

Rapid growth rates can be seen in the Southdown-cross lambs. They produce a fine-grained meat which has a sweet taste. Carcass weights can reach 13-15kg at around 12-15 weeks.

### Wool:

A short down wool with a fibre diameter of 23-28 microns, a staple length of 50-75mm and a typical fleece weight of 2.0-2.5 kilograms.

### Use:

The wool is mostly used for knitwear blends and bedding. The breed is used as a terminal sire. There are very good lamb growth rates with a Southdown Romney lamb able to reach marketable carcass weights in 12-14 weeks under suitable rearing conditions. Southdowns were formerly an ideal fat lamb sire but as meat and carcass requirements have changed, so has the dominance of the Southdown. The term "fat" has been replaced with "prime" to reflect the current market requirements which penalise farmers for fat production.



## South Suffolk

The South Suffolk first appeared in New Zealand in the 1930s as the demand for leaner meat became evident. The South Suffolk was first registered in 1955 and is described as a large, comparatively heavy meat breed with the rams used as the terminal sire for early prime lamb production.

### Features

A large heavy sheep with a good length and a long well-muscled loin. The breed has a fine down wool and black clean faces and black clean legs.

### Body weight:

Ewes 65-90 kg and rams 90-120 kg.

### Breeding/lambing:

Lambing percentage of 130-160%.

### Meat:

The high-yielding carcass is ideal for further processing. A 16 kilogram carcass at 12 weeks of age can be produced. The lambs have the ability to grow into heavier weights within grading requirements.

### Wool:

Short, fine, down-type wool with a 27-33 micron diameter and a staple length of 75-100mm. Average fleece weight is 3.0-4.0 kilograms.

### Use:

The South Suffolk is an ideal terminal sire producing early maturing lambs that produce a good quality, high yielding carcass. The wool is used for apparel and knitting yarns.



*Figure 29 South Suffolk.*

New Zealand Sheep Breeders Association™ (2015). Retrieved with permission from <http://www.nzsheep.co.nz/index.php?page=south-suffolk>



*Figure 30 South Suffolk ram.*

Image retrieved from <http://www.victoriansouthsuffolksociety.com>

## Suffolk

The original Suffolk was the result of crossing the Southdown ram and the Norfolk Horned ewe. It was first recognised as a breed in the early 1800s. The original breeders took the Southdown, which they described as a large sheep without horns with fine bones and a long neck and mated it with a horned sheep, being a wild and hardy breed that had a very muscular body. The Suffolk is described as a well-muscled animal with stamina, noted for its long and active life.



*Figure 31 Suffolk.*

### Features

The sheep are large without horns. They have black faces and legs with long fine necks. The breed is low in the front with high shoulders and light forequarters.

New Zealand Sheep Breeders Association™

(2015). Retrieved with permission from

<http://www.nzsheep.co.nz/index.php?page=suffolk>

### Body weight:

Ewes typically weigh 70-90 kg and rams can be over 100 kg's.

### Breeding/lambing:

Lambing percentage are typically over 120%.

### Meat:

A fine-grained, low-fat meat.

### Wool:

A short, fine, down-type wool of 25-33 microns with a staple length of 50-75 mm.

### Use:

The rams are used as terminal sires in New Zealand, providing a fine-grained meat and heavy carcass weights. The wool is used for thermal fillings in garments and bedding.

### Easy Care

*Easy care* was a great catch cry in the late seventies. Then it meant not having to lamb ewes (trouble free lambing), because at that time it was generally expected that a large number of sheep, hogget's and two tooth's in particular, would need assistance. Now it means much more than that, and some people are claiming that they do not shepherd their sheep at all. These systems are referred to as being *less intensive* versus a stud breeding unit for example, which is *intensively* managed.

Farmers have become more selective about the genetics they introduce into their flock. One of the key components when selecting sires is the progeny's history of having a trouble free lambing. Traditionally, farmers would look over their sheep during lambing more than two times per day. Now, most farmers are checking sheep no more than twice a day and many farmers are culling sheep that require shepherding.

Other farmers are going around once per day but they will be prepared to go around twice a day in rough weather to put covers on new born lambs or move them into more sheltered areas where possible.

**Task:** Visit a variety of stud stock breeder's web pages and read about their claims to lambing ability for their breed.

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## Meat Yield

*Meat yield or dressing out percentage (DOP)* is calculated by dividing the hot carcass weight by the pre-slaughter live weight of the animal.

With the shift towards meat (versus wool) producing sheep breeds growing, the focus on meat yield has increased. The ultimate goal is to get lambs off to the works quickly, at a higher yield. Some key points to note:

- Lambs slaughtered at weaning (often referred to as *milk fat lambs*), straight off their mothers can yield up to 50%.
- Lambs slaughtered post weaning (when they have reached the required live weight on grass or even a lamb fattening crop) yield between 40-45%, most commonly 43.5%.
- For example, a 40kg live weight lamb may yield 17.5kg when slaughtered

*Meat yield* is also influenced by breed. Some examples:

- Throughout Southland, the Texel x Coopworth x East Friesian is the overall the highest yielding breed.
- In comparison to reach a higher yield, a Romney for example, needs to meet a higher live weight. Romney's tend to mature in the bone before filling in muscularly, therefore taking longer to mature.

## Wool Yield

Wool yield is defined by Trafford and Trafford (2008) as the “proportion of useable fibre present in a quantity of greasy wool, expressed as a percentage”. The yield and characteristics of wool fibre between breeds varies greatly, as illustrated in the table below.

**Table 1.19: Fibre Characteristics and Principal End Uses of the Main Wool Types**

Breed	Fibre Diameter (micron)	Staple Length (mm)*	Bulk (cm <sup>3</sup> /gm) **	Average Yield (%)	Fleece Weight (kg)***	Lustre	End uses ****
Romney	31 - 41	125 - 175	20 - 24	75 - 80	4.5 - 6.0	med	12345
Perendale	30 - 37	100 - 150	22 - 26	75 - 80	3.5 - 5.0	low	12345
Coopworth	32 - 42	125 - 175	19 - 23	75 - 80	4.5 - 6.0	high	13
Borderdale	30 - 35	100 - 150	20 - 24	74 - 78	4.5 - 6.0	med	3457
Border-Leicester	35 - 42	150 - 200	17 - 21	76 - 81	4.5 - 6.0	high	134
Drysdale	>40	200 - 300	22 - 26	77 - 83	5.0 - 6.0	low	1
Corriedale	27 - 34	75 - 125	24 - 29	65 - 72	4.5 - 6.0	med	24589
NZ Halfbred	25 - 31	75 - 110	28 - 32	65 - 72	4.0 - 5.0	low	4568
Merino	17 - 24	65 - 100	29 - 33	69 - 72	3.5 - 5.0	low	68
Cheviot	28 - 34	75 - 100	31 - 35	75 - 79	2.0 - 3.0	low	89
Downs	25 - 32	50 - 75	34 - 38	50 - 70	2.0 - 3.0	low	589 10

Notes:

\* Typical full year's growth

\*\* Loose Wool Bulk

\*\*\* Total greasy wool grown over 12 months (not including belly wool)

\*\*\*\* Principal end uses:

1. Carpets
2. Blankets
3. Heavy woollens / overcoatings
4. Furnishing fabrics
5. Handknitting yarn
6. Fine apparel
7. Heavy apparel
8. Knitwear
9. Tweeds
10. Wool filling

**Figure 32 main wool types**

Source: Trafford & Trafford (2011)

## Sheep Improvement Limited

In New Zealand, SIL or Sheep Improvement Limited, is the main resource available to ram breeders for providing genetic information. SIL is a division of Beef and Lamb New Zealand.

The ultimate goal of SIL is to improve the overall quality of the sheep flock in New Zealand, by focusing on genetic traits such as:

- Growth (e.g. weaning weight, ewe weight, carcass weight)
- Meat (e.g. fat, lean; based upon the results of ultrasound)
- Wool (e.g. 12 month fleece weights, lamb fleece weight, ewe fleece weight, fibre diameter)
- Reproduction (e.g. number of lambs born)
- Survival (e.g. survival of lambs)
- Disease (e.g. parasite resistance)

More information on SIL can be located on their website [www.sil.co.nz](http://www.sil.co.nz).

## Study questions #1

1. List four reasons why the Romney is the most popular breed of sheep in New Zealand.
2. What is the major production feature of a Merino?
3. How was the Drysdale breed established?
4. What are the major features of the Coopworth?
5. Traditionally the Southdown has been a favourite terminal sire. Why?
6. The Texel and its crosses have come into favour as a terminal sire. Why?

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## Age Classes

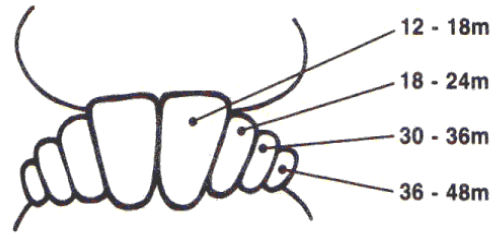
So far in this module, sheep have been classified according to their breed. On the farm, sheep are also classified according to their age.

Classification is made by the number of teeth a sheep has. As the sheep ages, more teeth become present in its mouth. This has the effect of making the jaw wider. Older sheep (mixed age sheep) have a wider jaw than younger stock e.g. two tooth. The two tooth generally has a more pointed face than the older sheep.

Classification	Description
<b>Lamb</b>	From birth until the end of autumn (about 8 months of age).
<b>Hogget</b>	From the end of the first autumn, until the end of the second spring (at which time the first permanent incisor teeth erupt).
<b>Two tooth</b>	From start of second summer until start of third summer – first year as a mother, the “newbie” in the ewe flock.
<b>Four tooth</b>	A ewe who is either preparing for her second lambing, or caring for her second lamb(s) – a second time lamber.
<b>Six tooth</b>	A third time lamber.
<b>Full mouth</b>	A fourth time lamber.
<b>One year ewe</b>	A ewe that is deemed to have one more productive lambing year in her. She has to be sound in limb and udder, and still have some wear left in her teeth.
<b>Ram</b>	A male sheep (of any age).
<b>Wether</b>	A ram that has been castrated by removal of the testicles.
<b>Teaser (or teaser ram)</b>	A ram that has been rendered infertile by the removal of a section of the vas deferens (the sperm carrying duct). Such a ram willingly identifies and mates with the ewes, but cannot sire lambs.



**Left:**  
The timing of eruption of the front (incisor) teeth in the sheep



**Fig. 1 : Ages at which permanent incisors erupt.**

*Figure 33 Incisors erupt*

Source: MAF Information Services, FPP 629



**Fig. 3 : The progression of incisor wear from normal (1), to slight (2, 3), moderate (4), and severe (5).**

*Figure 34 Progression of incisors*

Source: MAF Information Services, FPP 629

**Right:**

The wear of the incisor teeth in a full mouthy ewe.

The slight to moderately worn mouth of ewes 3 and 4 would be acceptable in a "One Year Ewe".

The following excerpt details the age at which the incisors erupt and the common term used to describe the age.

Teeth	Age at Eruption	Common Term
First or central pair of incisors	12 - 18 months	2 tooth
Second pair of incisors	20 - 24 months	4 tooth
Third pair of incisors	26 - 30 months	6 tooth
Fourth pair of incisors	34 - 40 months	full mouth

## Study Questions #2

1. How would you tell a 9 month old hogget apart from an old ewe, just by looking at the mouth?
2. How old is a six tooth ewe mouthed at weaning in December?

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# Animal Information Systems

## Introduction

Over the years farmers have found that by selecting top performing animals they can breed permanent genetic gains into their flock. Ultimately, this provides the farmer with much better financial returns. For instance, by selecting sheep that have better growth, the farmer can achieve higher income by breeding to retain and improve the growth rate of lambs.

However, it can become increasingly difficult over time to remember what each animal is capable of, and which animals have been bred to which, unless each animal has a unique and easy to read identifying mark, and careful records are kept associated with that identifying mark. Through the careful recording of productivity measures (and associating of those records with the animal's unique identification mark), a farmer can identify the good animals and make mating decisions that improve the genetics of the flock. Or a farmer can use this information to identify the genetically poor or damaged stock and cull them. Animal and flock productivity will thus improve and profits increase. It is also important that the animal records are stored and processed in a way that enable effective decision making. There are four necessary components to the Animal Information Systems on the farm:

- Unique and easy to read stock identification (e.g. ear tags).
- Efficient and reliable information harvesting methods (weigh scales, tuppings marks etc).
- Efficient and reliable information storage methods (e.g. a sheep's back can hold a raddle mark, or an ear cull tag).
- Efficient and reliable information processing and presentation methods (pen and highlighters on a paper based list also serve well).

There are a range of methods for identifying animals. Two of the crucial factors are the **coding system** used, and the **tagging system** used – i.e. the data (for example a colour or a number) and the mechanism for recording the data.

## Coding Systems

### Numeric Coding

The best permanent identification system for animals is to use a two-part number on the ear tag, brand or tattoo. This number consists of:

- The animals individual number (usually three digits) and
- The birth year.

To assist this numbering system, the farmer can also use *colour coding* and *alphanumeric coding*.

### Alphanumeric Coding

Alphanumeric coding uses a combination of letters (alphabet), and numbers (numeric) – hence 'alphanumeric'.

This form of coding provides the farmer with a lot more character combinations through the use of both numbers and letters. It also means that the number system can be kept simple – avoiding the need to number in to the thousands, or to put full-stops (as occurs in government legislation, legal documents and accounting filing systems), between numbers to represent categories and sub-categories. Thus, using a coloured tag, along with a number, and along with a letter – can replace the need to have a code such as 02.162.23. The code is simplified, and automatically becomes more ‘user-friendly’ to work with.

A specific letter of the alphabet is popularly used to signify the year that the animal was born in, and sometimes the sex of the animal, or other such information.

### Coding by Location of Tag or Ear Mark

A very basic method of ‘coding’ is in the simple placement of the tag or information. Thus, the farmer can ‘code’ by choosing to place the tag on either the right ear or the left ear depending on the gender of the animal. They could place a tag on alternate ears for alternate years, and so on. This ‘placement’ method means that the information provided is of a binary nature – i.e. a choice of two options – male/female, odd year/even year, etc – but it is still very effective for simple and easy reading and interpretation.

## Temporary Identification

### Raddle

Raddle means “little red”. The term raddle was first seen in English literature in 1572 and refers to red ochre, a red earthy hematite, used as a pigment. Today, raddle has come to mean any form of temporary mark to identify and organise livestock. Examples of raddle used for temporary sheep identification include:

### Chalk Raddle

Chalk raddle can be seen lying on the shelf in most sheep yards and shearing sheds, ready to mark the back or head of a sheep once it has been assessed. The sheep with a raddle mark can be easily identified by the person on the drafting gate, then drafted out for further attention. One example of this is when lambs are assessed by a freezing works representative or a butcher. Those marked with a touch of, say, blue raddle may be drafted off ready for slaughter, while those who are given some red raddle may be “Over fat” and need to be “slimmed down”.



*Figure 35 Bright Line Raddle.*

Donaghys (2015). Retrieved with permission from <https://www.donaghys.com/sheep-and-beef/products/stock-marker>

## Stock Marker

*Stock marker* or sometimes referred to as *spray raddle* is an aerosol spray paint used for temporarily marking of sheep.



**Figure 36 Sprayline**

Donaghys (2015). Retrieved with permission from <https://www.donaghys.com/sheep-and-beef/products/stock-marker>

It can be kept in the top pocket of the overalls ready for instant application in the yards or paddock.

Used on sheep farms to mark twin lambs at lambing, a ewe with black wool at shearing (indicating to the farmer that the ewe may have to be culled) or to mark the head of a ram during mating, so he can be easily identified from the ewes.

## Ram Crayons

Ram crayons are also a form of temporary identification used at mating time on a sheep property. Nowadays, ram crayons are more commonly used on stud farms, as scanning has become increasingly popular in commercial operations.

A harness is fitted to the ram which has a crayon located on the brisket. During mating, the crayon marks the ewe above the tail leaving a temporary coloured mark.

This indicates to the farmer:

- the ewes that have been mated first cycle, then again those mated on the second cycle
- which ram has mated which ewe (the sire of the progeny can then be recorded)
- the ewes which have not been mated

Further information on the use of ram harnesses and crayons can be found in the section on 'Data Management Systems'.



**Figure 37 ). Ram Crayons.**

Donaghys (2015) Retrieved with permission from <https://www.donaghys.com/sheep-and-beef/products/stock-marker>

## Permanent Identification

A *tag* is any sort of *label* that has been placed on something to help with *identification and classification* purposes. From this, it is easy to see where the modern term for graffiti on property has acquired its nickname of 'tagging' – a process whereby someone is making a statement (providing 'information'), although usually about themselves rather than the item they are 'tagging'.

In this day and age we have the advantage of being able to access a range of modern technological innovations for tagging stock. In previous times, before plastic tags became available, metal, rope and paint were common identifiers. These latter options lacked permanence and hence the tattoo was also frequently used as a method of identifying stock.

## Permanent Colour Coding

Permanent colour coding (at least as long as the sheep is alive and the ear and tag intact) is afforded by plastic tags of different colours, with the colours being strong and easily identifiable as to which characteristic they distinguish. The colour system cannot be used by itself to provide a fully comprehensive record, but they complement the numeric system by providing some of the most important information located on the animal (e.g. the colour can link to a particular year), and by being easy to recognize and access. Thus a coloured tag is advantageous because it:

- Provides information itself – i.e. the colour itself provides information, for example the year of birth
- Is easy to access – i.e. it can be spotted and interpreted at a glance
- Is easy to spot at a distance – i.e. a coloured tag can be seen some distance away
- Coloured tags can change colour slightly over time, so it is important for the farmer to use contrasting colours which cannot be mistaken if this does happen.

## Ear Tags

### Plastic

These are applied by a special applicator. The tag is loaded in the plier-like applicator, which is then closed through the ear (self-piercing). This tag can provide the animal's identification number, and can contain other information. It also has the benefit of being available in a number of different colours, and the colours are useful for providing specific information within the coding system.

It can be used as the only method of identification but it is safer to use brass identification tags as well because the plastic ear tags can be lost more readily than brass. Plastic generally succumbs to weather conditions (brittle after repeated frosts, and UV light, fading through weathering, etc) more readily than brass. The plastic tags, as mentioned earlier, can be

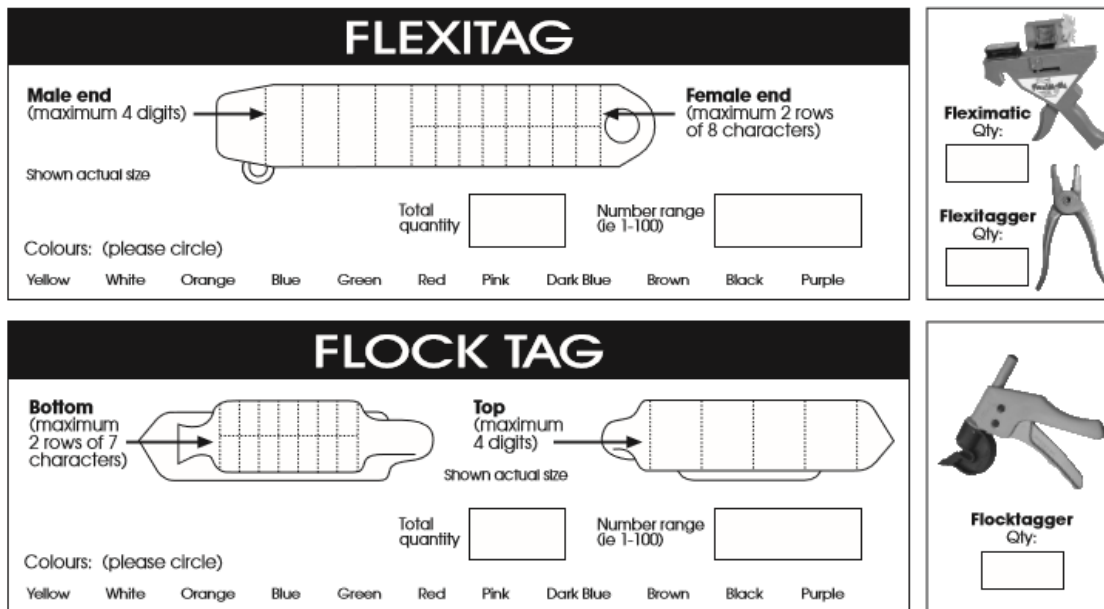
*Maltese sheep's face with ear tag.*



**Figure 38 Maltese sheep's face with ear tag.**

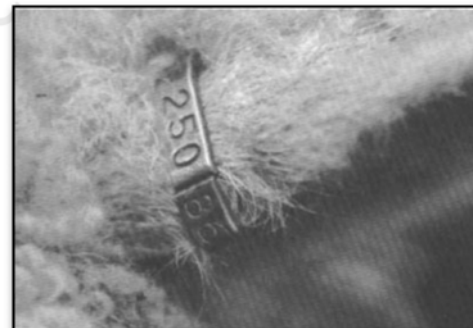
Wikimedia Commons. (2014). Licensed under the Creative Commons Attribution 2.0 Generic. Retrieved from [https://commons.wikimedia.org/wiki/Category:Sheep\\_with\\_ear\\_tags#/media/File:Sheep%27s\\_face,\\_Malta.jpg](https://commons.wikimedia.org/wiki/Category:Sheep_with_ear_tags#/media/File:Sheep%27s_face,_Malta.jpg)

seen at a considerable distance, ensuring ease of recording. However, because of their shape and size they sometimes catch on fences or yard rails and can, as a result of this, cause damage to the animal's ear, or be wrenched out and lost. The examples illustrated below are from [www.allflex.co.nz](http://www.allflex.co.nz):



### Brass Ear Tags

Brass ear tags are applied by using an ear punch to cut out a neat hole in the ear. The tag is then closed through the ear with pliers. This is a hygienic method of tagging to use, as the hole cut by the ear punch is neater and heals more quickly (reducing the risk of infection) than the hole created by a self-piercing tag. Brass tags are permanent and a good means of identification.



### Nickel-Plated Ear Tags

These are similar to brass tags but have less likelihood of grease and dirt sticking to them. The grease and dirt can be a problem on brass tags as they can obscure the numbers. The glare of the sun on brass and on nickel in particular, can make it hard for the farmer to read numbers.

### Aluminium Ear Tags

Similar to brass tags, these are self-piercing (and hence perhaps run the risk of a rough wound, slower healing process, and possible resulting infection), but may wear out faster.

### Neck Tags

Outdated by plastic ear tags, these are pieces of plastic with a large number on them. They are tied around the animal's neck with special cord, and care must be taken to use the correct cord and to tie it at the correct length.



## Tattoos

Tattoos are hard to read and apply, so they are not in general use. They are however, an economical method of tagging an animal in that there is only one simple tool used and no 'consumable' items involved. Also, because of their permanent nature – (they are not easily removed and are not generally damaged through environmental wear and tear) - they are used as a security measure on valuable animals.

## Earmarking

Earmark is a term that dates to the 16th century, originally referring to cuts or marks in the ears of cattle, pigs and sheep made to show ownership, age and/or gender. Nowadays in New Zealand, farmers may still use earmarks to identify age or sex, especially in sheep, but ear tagging has become the preferred and main method of identification.



Ear markers are capable of placing unique clips in the ears of lambs and calves.

**Additional Resource:** at the rear of this module is information fromASUREQuality New Zealand Ltd, detailing how to apply for a *brand* in New Zealand, along with all the available earmark designs.

## RFID Tags and Boluses

The term RFID refers to *radio frequency identification device*. RFID tags will become compulsory for use with cattle and deer and registered on the NAIT (National Animal Identification and Tracing) scheme database, as of 1 July 2015. They are currently not compulsory for use on sheep. One example where it is compulsory for sheep to be tagged with a RFID tag, in New Zealand, is when they are destined for live export.

**Further Reading:** for further information on NAIT and RFID tagging cattle and deer, visit the website [www.nait.co.nz](http://www.nait.co.nz).

RFID tags allow farmers to store and record information about individual animals, electronically. This can be useful in stud farming situations as it is on a dairy farm. A farmer can use a tag reader from meters away and instantly know the animal's tag number, allowing its offspring to be recorded at lambing without having to catch the ewe and read the tag for example. On dairy farms, readers are positioned strategically in the milking parlour. Meal rations, medications, calving dates or even the drafting of the animal into another area then happens electronically – as per the instructions the farmer has pre-programmed into the management system.

Boluses are not as common in New Zealand as they are in countries such as Australia. Ceramic boluses are inserted into the rumen of the animal; one insertion provides a lifetime of traceability (if inserted correctly). Boluses have been tested safe for use in meat and milk producing animals.

**Task:** Visit the NAIT website (<http://www.nait.co.nz/tag/reading-tags/>) and read the section on reading RFID tags.

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## Study Questions #3

1. List the forms of identification that rely upon colour coding.
2. List the forms of identifications that rely upon position.
3. List the forms of identification that rely upon visible numbers.
4. List the forms of identification that rely upon “RFID” technology.

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## Records

Commercial flocks do not record as much information as stud flocks do, but there is still a lot of individually recorded information to be made. On the commercial farm, the way they record information may not seem hi-tech, but it is both quick and effective, as you are about to find out (see “Short Term Storage of Information” below).

### Methods of Recording Information

#### Long Term Storage of Information

If you need the information long term, you write it down on paper, or you write it into an electronic memory machine (computer, weigh scales memory, Palm Pilot). Stud breeders are more likely to need long term storage of information. Once the information is appropriately stored, it can be used by computer programs to run complex statistical calculations. That way, breeding values can be calculated. The more information that can be recorded from the flock and the more accurate the recordings, the more accurately the genetic value of each animal can be calculated.

#### Short Term Storage of Information

But if the information is not required long term, it would be pointless to waste time and effort putting it into some form of long term memory system; in this case, you have some very simple short term information recording options. The commercial sheep farmer is a master of these sorts of information recording:

You can mark the animal with raddle (or you can get the ram to do that with his mating harness), or with an ear tag or ear mark. In this case, the information recorded is a form of animal identification at the same time.

You can use the drafting gates to put the sheep in a pen or in a paddock to be dealt with later (for example, those in need of foot rot treatments, or those ewes that have bad udders and have to be culled).

You can make notes on a white board.

Now that we have defined what we mean by recording information, we can list some of those types of information:

#### For Individual Sheep

This is particularly important to a stud stock breeder:

1. Birth date, weight, birth rank (single twin triplet etc)
2. Tailing date, tailing weight
3. Weaning weight
4. Various dates of weighing and weights
5. Hogget fleece weights
6. For the ewe: birth dates and numbers lambs born, numbers of lambs weaned etc.

## For a Mob or Class of Sheep

This information is of equal importance to a stud stock breeder and a commercial farmer:

1. Size of mob
2. Location of mob
3. Classification of mob, including:
  - Large male lambs nearly ready for slaughter
  - Late born lambs
  - Hoggets
  - Hogget lambers
  - Two tooth lambers
  - Cull ewes waiting for space at the works
  - Ewes mated early (with expected lambing dates)
  - Ewes mated late (also with expected lambing dates)
  - Ewes uddering up prior to lambing
  - Ewes carrying twins or triplets
  - Ewes carrying single lambs
  - Rams siring replacement lambs
  - Rams siring terminal (slaughter) lambs
4. Other details about mob, including:
  - Average weight and range of weights
  - Colour of raddle (if any) used to identify them e.g. yellow for first time tugged
  - Date of shearing
  - Date of drenching, together with meat withholding period and batch number
  - Date of Dipping or other treatment, together with meat and wool withholding periods
5. Information retained by drafting sheep off into a different mob:
  - Larger hoggets to be hogget mated
  - Small hoggets to be culled
  - Ewe with only one teat, poor udders, poor teeth, foot problems to be culled etc.

## For the Whole Farm

This information is of equal importance to a stud stock breeder and a commercial farmer:

1. It is necessary to keep records relating to paddocks (soil tests, pasture mixes, pasture tests, facial eczema spore counts, DDT test results). Farmers can keep these in a paddocks file, or in a computer with the aid of an appropriate software system.
2. It is necessary to keep records relating to use of hazardous substances (e.g. glyphosate), agricultural compounds (e.g. fertilisers) and veterinary medicines (e.g. drenches, antibiotics) and these must be to an auditable standard, not only to comply with government regulations but also for the sake of guaranteeing and maintaining overseas markets.
3. It is necessary to keep financial and GST records for the bank manager and for taxation purposes.

**Further Reading:** Recording the use of hazardous substances, agricultural compounds and veterinary medicines on farm has become mandatory for all farmers. Farmers are required by law to follow the regulations around handling, storage, administration and recording the use of these substances on farm.

Take a look at the Safer Farms website <http://saferfarms.org.nz/guides/working-safely-with-chemicals-and-fuels-on-farms/> and read about the safe use of veterinary medicines on farm.

All this information contributes to the quality of farm management, which translates into more profits, less animal welfare and human stresses, and greater job satisfaction.

Some of the ways in which this information helps on farm management is obvious. For example, you do not want to risk a fine for slaughtering sheep before they have finished their meat withholding period (the waiting time after administering a drench, antibiotic etc). Ewes “uddering up” is a good way to know when to spread them out onto the lambing paddocks.

Some of the information is more subtle. For example, date of winter shearing. If you were to shear in May, you would weigh your ewes 6 weeks later and you would probably find that the ewes had lost a lot of weight due to having to burn feed energy to keep warm. Suppose you were to shear the ewes just 4 weeks before lambing instead (use cover combs, so the wool was not too short), you would find that the ewes had better body condition going into lambing and you might even find out that they were not getting cast as often as they did when they had a full fleece on their backs. You would also refer to your lambing and ultrasound pregnancy scanning records to see what the early shearing might have done to the rates of pregnancy and lambing. You would also note the numbers of ewe deaths through winter. A thinking farmer refers to records often as day to day stock checks are made.

## Summary

- A farmer that records important information is able to work more efficiently and effectively, overall increasing profit.
- An astute farmer finds easy ways to collect appropriate information, manage it and refers to it often. The best ones actually like referring to information in order to make decisions.

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## Study Questions #4

1. List some of the things that you might want to record about a mob of ewes.
2. List some examples of information that can be stored by drafting off a category of animal and keeping them in a separate mob.
3. List some important types of information that need to be recorded on whole of farm basis

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## Recording Systems Used on the Farm

Top pocket note books and Palm Pilots are fine for quick entries and checks relating to a single animal, or perhaps to single event (such as drenching a certain mob of lambs), but when you are going to spend a day in the yards doing intensive measuring and recording, you will likely resort to the following:-

### Raddle

A mark on the sheep's back is a method of recording your findings. It is a very useful form of record keeping. Even though it is only short term, such marks make it easy for you to diagnose (for example) ewe with "crook udders" that need to be drafted off and put in a separate mob for culling to the works, or rams with a bit of foot rot or scrotal mange that needs treated.

### Paper based Record Sheets

To record sheep weights manually, a pre-numbered checklist is often used. The numbers from one to five hundred are printed in columns, and there is a space beside each number for the corresponding animal's weight to be recorded. These lists are effective in that they help to prevent another animal being mistakenly entered against the wrong identification number. The data can be transferred later to a computer, which has the advantage of not wetting, dirtying, or destroying your lap top.

### Computer based Recording System

Computers can be used in the yards to key in information, or electronic scales can input the data they collect into the computer. Electronic scales for use in the yards are a better solution, as technology means some of the scales now have large memories. They are designed specifically for the work environment, to record data, and the data can be transferred to a computer later.

Electronic scales are advantageous in that they automatically carry out functions that they have been programmed to do, reducing the amount of work that would otherwise have been done manually. The possibility of human error is also reduced. In some scales information such as tag numbers of the expected animals can be entered into the memory of the scales. After the tag number is entered the electronic programme will show up missing animals and any double ups that may have occurred.

(See references in next section re: LIC and SIL for software and data management services you might use if you are going computer based).

## Data Management Systems - Traditional

### Ram Harnesses

Using ram harnesses provides a system of data recording and management for ewe breeding and lambing. The ram harness is put on the ram at tupping time, and he “marks” the ewes as he mates. About every 7 days the colour in the harness is changed, and the system is worked so that toward the end of pregnancy the early lambers can be treated differently to the late lambers.

Key point:

- Mating harnesses and crayons are the only tools by which information on mating activity can be gathered. They enable the automatic recording of timing of mating for individual ewes.

Timing of mating records are useful to:

- Identify flock reproductive problems.
- Allow improved monitoring and management of the flock at the critical times of mating, lambing, and even weaning.
- Enable selection of hogget’s on whether they exhibit oestrus.



*Figure 39 A ram harness fitted with a crayon. When fitting to the ram, ensure they are secure and checked regularly.*

Donaghys (2015. Retrieved with permission from <https://www.donaghys.com/sheep-and-beef/products/stock-marker>)



*Figure 40 When a ram mounts a ewe, the crayon leaves a coloured mark above the ewe’s tail.*

WOOLSHED1 Blog. Ram serving a ewe in full standing oestrus. Licensed under the Creative Commons Attribution-Non-commercial. 3.0 Unported New Zealand license. Retrieved from <http://woolshed1.blogspot.co.nz/2009/01/sheep-farm-husbandry-reproduction-and.html>

## Top Pocket Notebook

Farmers have traditionally kept a diary and pencil in their shirt pocket. They got these, often as a free giveaway, from their stock and station agent. In this diary would go (for stud breeders) sheep's ear tag numbers against lambing dates, mating dates, drug treatment dates; (for commercial and stud breeders alike) mob data such as size of mob, average body weights of mob, times of drenching, tugging, crutching and shearing, and also info on paddock based treatments such as which paddocks had an application of Nitrogen, Selenium prills or Cobalt sulphate spray for example. Notes applicable to purchases of supplies and contact phone numbers would also go into the top pocket. A good farmer spends time and thought in front of the notebook, and works it in a tidy fashion.

## Office Based Paper Work

### Day Diary, Herd Record Sheets, Auditable Drug Record Books, Cashbook

These office based systems have served the farmer well, and will continue to do so. There are two major drawbacks:

- You have to transfer all records out of your top pocket diary into the office based system.
- You have to do the number crunching more or less by hand.

Any reports (for the bank manager or other business partners) must be either hand entered into a computer or put on forms. That makes for a third or fourth round of entering the numbers.

## Data Management Systems - Computerised

Farmers today are looking for ways to automate their data recording, transmitting, and retrieval processes. Let's look at what is currently available.

### Palm Pilot (Digital Version of the Top Pocket Notebook)

The Palm Pilot is a hand held computer. When it has the appropriate software installed, a Palm Pilot can be used in a similar way to the top pocket notebook. It even has a plastic stick that works a little like a pencil. The rain does not have to be a worry, because special rainproof plastic packaging protects them.

#### Advantages

1. One time only entry of data, which is then automatically transferred to the home computer, and from there via the World Wide Web to the server of the database provider.
2. Immediate retrieval of individual sheep data while still out on the farm.

In New Zealand, the most popular database provider for dairy farmers is the Livestock Improvement Corporations' (LIC) MINDA software. LIC's palm pilot software and other data management services are versatile and would definitely be of benefit to tech savvy sheep and beef farmers, especially to stud sheep farmers.

**Further Reading:** for further information on LIC and MINDA visit [www.lic.co.nz](http://www.lic.co.nz)

For the stud sheep farmer, Sheep Improvement Limited (SIL) provides a data management system for sheep records useful for genetic improvement. SIL is a major player in the New Zealand sheep industry.

**Further Reading:** for further information on SIL visit [www.sil.co.nz](http://www.sil.co.nz) and view the 'SIL Breeders Handbook'

#### Disadvantage

1. Farming is a wet and muddy business. It is therefore difficult to keep your Palm Pilot clean and free of water that might damage its electronics. Plastic protective pouches are available to prevent damage from water and mud.
2. Always ensure you have backed up the information on the device to reduce the risk of losing valuable information if it is lost or damaged.

## Study Questions #5

1. List some methods of recording information on the farm.
2. List some data management systems that are used by farmers.

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## Study questions answers

### Study Questions Answers #1

1. *Good wool, good meat, crosses well with other breeds, medium size, suits a wide range of conditions, has an adequate lambing percentage.*
2. *Fine wool.*
3. *Developed at Massey University by crossing animals displaying the hairy fibre (halo-hairs) in a Romney. The gene was a recessive gene that was repeatedly selected to produce lines of homozygous sheep.*
4. *The Coopworth was developed at Lincoln College. It is dual purpose breed with a high lambing percentage. The development was a cross between a Border Leicester and a Romney.*
5. *Small (easy lambing) and vigorous lamb at birth, "fast maturing" to get away early to the works.*
6. *Lean large lamb, grows quickly, relatively hardy sheep.*

### Study Questions, Answers #2

1. *This could be something of a trick question, since both old ewe and hogget have "full mouths". The hogget has smaller teeth and a narrow, pointy mouth (like a deer) when compared to the wide, almost dolphin like mouth of the older ewe.*
2. *3 and ¼ years*  
*She is better thought of as a rising 4 year old, or a ewe who is going to be a third time lamber*

### Study Questions, Answers #3

1. *Raddle, (spray, chalk and ram crayon), Ear tags*
2. *Ear marks, raddle, ear tags*
3. *Ear tags, tattoos, neck tags*
4. *Ear tags, Stomach boluses*

### Study Questions, Answers #4

1. *(Give yourself full marks if you could think of half a dozen or more.)*
  - Two tooth lambers
  - Cull ewes waiting for space at the works
  - Ewes mated early (with expected lambing dates)
  - Ewes mated late (also with expected lambing dates)
  - Ewes uddering up prior to lambing
  - Ewes carrying twins or triplets
  - Ewes carrying single lambs
  - Average weight and range of weights
  - Colour of raddle (if any) used to identify them e.g. yellow for first time tupped.
  - Date of shearing
  - Date of drenching, together with meat withholding period
  - Date of Dipping or other treatment, together with meat and wool withholding periods



2.

- Larger hoggets to be hogget mated
- Small hoggets to be culled,
- One teat ewes, poor udders, poor teeth, foot problems to be culled etc.

3.

- Records relating to paddocks (soil tests, pasture mixes, pasture tests, facial eczema spore counts, DDT test results). Farmers can keep these in a paddocks file, or in a computer with the aid of an appropriate software system.
- Records relating to use of Agricultural Compounds and these must be to an auditable standard for the sake of guaranteeing and maintaining overseas markets.
- Financial and GST records for the bank manager and the tax man.

## Study Questions, Answers #5

1.

- *Raddle*
- *Top pocket note book*
- *palm Pilot*
- *Record sheets and clip board*
- *Computer*

2.

- *Ram harness*
- *Top Pocket Notebook*
- *Office based data management system*
- *Computer based management systems*

## References

### Text

Meadows, G. (2008). *Pocket Guide to Sheep Breeds of New Zealand*. New Holland Publishers (NZ) Ltd.

Trafford, G & Trafford, S. (2011). *Lincoln University Farm Technical Manual 2011*. The Caxton Press, New Zealand.

### Websites

[www.nzsheep.co.nz](http://www.nzsheep.co.nz) The New Zealand Sheep Breeders Association™

[www.beeflambnz.co.nz](http://www.beeflambnz.co.nz) Compendium of New Zealand Farm Facts

[www.rarebreeds.co.nz](http://www.rarebreeds.co.nz) Rare Breeds Conservation Society of New Zealand

<http://www.inspection.gc.ca> Canadian Food Inspection Agency


[www.donaghys.co.nz](http://www.donaghys.co.nz) Images from the Stock Marker range

<http://www.ashtonglen.co.nz/> Ashton Glen Coopworths

<http://www.teara.govt.nz/> Te Ara, The Encyclopedia of New Zealand

[www.sil.co.nz](http://www.sil.co.nz) Sheep Improvement Ltd

[www.lic.co.nz](http://www.lic.co.nz) Livestock Improvement Ltd



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## LIVESTOCK BRAND REGISTRATION FACT SHEET

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### BACKGROUND

This service has been developed to **replace** the previous Brand Registration Service provided by the Ministry of Agriculture and Fisheries under the Animals Act 1967. **Its purpose is to facilitate proof of ownership of livestock.**

**The new service is in operation as at 1<sup>st</sup> July 1995 for the registration of new marks.**

Marks registered under the olds cheme have statutory protection under the provisions of the Animal Identification Act 1993 until 30<sup>th</sup> June 1998.

### KEY FACTS ABOUT THE NEW SERVICE

The new service is voluntary and discretionary.

We are offering it in response to identified farmer demand.

Marks registered under the new service are backed by the integrity and quality systems of the AsureQuality organisation, rather than by statute.

AsureQuality will maintain the new register as a service to the farmer, and will provide independent verification of any mark's registered status to whom it may concern at the owner's request.

Whilst every attempt will be made to ensure that marks registered are as unique from others in the neighbourhood as possible, the nature of earmarking technology is such that no guarantee of uniqueness can be given.

It is planned to computerise the Register within 18 months. This will enable enhanced benefits to clients in terms of ease of registration and enhanced search facilities. It will also enable automatic notification of marks coming up for re-registration.

The fee for registration of a mark is \$60 (GST inclusive) per registration. Certified Copies of the original Advice of Registration are available for a fee of \$20 (GST inclusive) per application.

Registrations are current for 5 years. On expiry, they may be renewed on payment of a further registration fee, or allowed to lapse if no longer required. This factor of the service will ensure that marks no longer required will come back into circulation for re-issue, increasing the pool of available marks. Benefits to clients will be a wider range of choice of earmark designs available and therefore enhanced capability for uniqueness from other registered marks.

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*For further information, please contact:*

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Hamilton

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# LIVESTOCK BRAND APPLICATION FORM

BRANDS/01.1

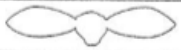




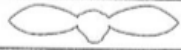
Full Name: ..... Farm ID .....


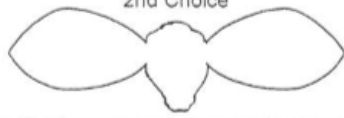
Farm Name/Trading As: .....

Postal Address: ..... Telephone: .....

Location of Farm: ..... District Council Name: .....

Property Owner Initials ..... Property Owner Surname .....

NAMES OF ALL NEIGHBOURS WHOSE STOCK ARE LIKELY TO MIX WITH MINE			
Full Name	Office Use Only	Full Name	Office Use Only
			
			
			

TYPE OF BRAND WANTED	EARMARK	HIDEMARK/FIREMARK
Cross out those not wanted, and, if you prefer a particular brand design or designs, draw it here:  <b>SHEEP:</b> Earmark Firemark <b>CATTLE:</b> Earmark Firemark <b>GOATS:</b> Earmark Firemark <b>DEER:</b> Earmark Hidemark <b>PIGS:</b> Earmark <b>OTHER:</b> _____	<b>1st Choice</b> 	<b>1st Choice</b>
	<b>2nd Choice</b> 	<b>2nd Choice</b>

Type of Registration:  New  Renewal  Transfer \*

I certify that I own livestock of a type for which the brand(s) is/are required. Signature: ..... Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Capacity in which signed: (owner, manager, etc.) .....

\* If the registration is a transfer, the current owner of the brand must complete the panel below:

I, (full name) ..... of (postal address) .....  hereby authorise the transfer of the brand(s) described above, currently registered in my name, to the new applicant.  Signature: ..... Date: ____/____/____
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This information will be used by AsureQuality New Zealand Ltd. only for the purposes of maintaining and updating the register of Brands and Earmarks, and will be managed according to the principles of the Privacy Act 1993. The purpose of the Register is to facilitate proof of ownership of livestock. Information on the Register will be made available on request to any person seeking to identify livestock based on their brands or earmarks.

Receipt # .....	Amount \$ .....
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AsureQuality New Zealand Ltd.