Making More From Sheep

MODULE 10

Wean More Lambs

A joint initiative of Australian Wool Innovation and **Meat & Livestock Australia**

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Wean More Lambs

What does this module do for you?

This module provides the framework and guidelines to set in place all the important management steps to improve flock reproduction rates and lamb survival to weaning. It enables you to:

➜ Understand how to get most ewes in-lamb.

➜ Value the importance of nutrition for reproductive performance.

➜ Develop a management plan to prepare ewes for lambing and optimise lambing performance.

➜ Understand the reasons for lamb losses at lambing and develop management strategies to minimise lamb losses.

➜ Recognise the important steps to ensure weaner survival and appreciate the steps required for young sheep to meet growth targets and achieve acceptable first joining pregnancy rates.

➜ Prepare ewes for next joining.

The AWI Lifetimewool project has demonstrated extra profits can be achieved by improved management of ewes. Whilst stocking rate is the key driver, enterprise profits can be increased by 10-15% per ewe in flocks that are managed to appropriate condition score targets, on top of returns that can be made from optimising stocking rate. Part of the benefit comes from improving reproductive performance of the ewes and part comes from increasing the lifetime productivity of progeny.

Procedure 10.1

Ensure most ewes get in-lamb

Background information

Successful joining management starts from the previous weaning period, both for ewes and rams. The first step to weaning more lambs is to ensure most ewes get pregnant in as short a joining period as possible. Both ewe and ram management must be considered.

The single most important determinant of reproductive rate is nutrition. Ewes in higher condition score conceive more lambs. A description of how to condition score (CS) is presented in tool 10.1. Use the recording sheets in tool 10.1 to plot the distribution in the mob.

The condition score at joining is a more important indicator of reproductive rate than a change in condition score through the joining period (unless extreme loss occurs). Adopt grazing management strategies to keep ewes in as high a condition score as possible, rather than feeding ewes to increase reproductive rates.

Key decisions, critical actions and benchmarks

Timing of lambing

Where practical, aim to lamb a month before peak pasture production in Merino breeding enterprises. In a lamb production enterprise, you must decide on the most profitable compromise between number of ewes joined per hectare, likely reproductive rate, lamb sale weight and timing and market price.

Sometimes the most favourable lambing time will be outside the best phases of matching pasture growth and production. If lambing outside this time, additional supplements may be needed to maintain production and prepare ewes for the next joining. Other influences include the market choice and planned growth rates of lambs to meet market specifications (see procedures 3.1 and 3.2 in ***Market Focused Lamb and Sheepmeat Production***).

Timing of joining

Setting the time of joining for lambing is the most important on-farm management decision you make. In the most profitable systems lambing time is planned to match feed demand with feed supply (see procedure 8.3 in ***Turn Pasture into Product***). Use tool 10.2 to vary the management calendar for a breeding flock.

Oestrus activity in ewes increases after the longest day (22 December). As day length shortens, cycling activity increases to peak between March and May when most ewes are cycling and with higher ovulation rates. Cycling in Merinos, and to a lesser extent breeds such as Poll Dorsets, are least affected by day length. Breeds such as Border Leicesters, Coopworths and Romneys are most affected by day length. Typical conception rates for Merino and Border Leicester ewes are listed in table 10.1.

For out of season joining, cycling activity can be improved by the use of teasers and exploiting the ram effect to stimulate oestrus in ewes (see tool 10.3).

Managing ewe nutrition

Managing ewe nutrition is the most important factor to ensure best reproductive performance. Condition scoring is a quick and reliable tool for managing ewes to meet production targets and enable timely decisions to optimise reproduction rates (see tool 10.1). The actual condition score of the ewes is the most important determinant of ovulation rate.

AT A GLANCE

- Aim to have all ewes in condition score 3 at joining.
- Maiden merino ewes need to be at least 75 - 80% of their mature weight at joining.
- Select and prepare rams 2 months before joining starts.
- Choose a lambing time to match quality feed supply.

Table 10.1 Conception rate of Merino and Border Leicester ewes at different joining times

(**Source**: Sheep CRC Report 1.2.6)

Ewes	Lamb date	Joining date (day of year)	Reproductive rate (%)	Singles %	Twins %
Merino	April	1 Nov (300)	80	70	5
	May	1 Dec (330)	90	80	5
	June	1 Jan (1)	110	90	10
	July	1 Feb (32)	120	80	20
	Aug	1 Mar (60)	130	70	30
	Sep	1 Apr (90)	130	70	30
	Oct	1 May (120)	120	80	20
Border Leicester	April	1 Nov (300)	105	65	20
	May	1 Dec (330)	120	60	30
	June	1 Jan (1)	135	55	40
	July	1 Feb (32)	148	48	50
	Aug	1 Mar (60)	156	40	58
	Sep	1 Apr (90)	156	40	58
	Oct	1 May (120)	145	45	50

The target condition score at joining is a balance between reproductive performance, stocking rate and the cost of achieving that score. The response to reproductive rate in Merinos is linear between ewes in condition score 1.5 to 4.5 (at condition scores of 4 or higher the risk of Dystoria increases). The Lifetime Wool project shows an increase of about 20% extra lambs for each rise in condition score at joining. This response varies from 7% to 36%, depending on genetics and time of lambing, with later lambing likely to be more responsive.

Strategies to manage ewes for higher condition score at joining include:

➜ At weaning, condition score ewes (see tool 10.1) and draft those below score 3 into a separate management group for preferential grazing on pasture, or if pasture quality is low, feeding a supplement to increase liveweight. Pasture is usually the only economic option for increasing ewe condition score after weaning. The target is to get all ewes up to score 3 by joining (see procedure 10.5).

➜ Wean lambs at 14 weeks after the start of lambing to ensure ewes can gain weight on green pasture before next joining.

Minimum condition score 3 is the target for ewes at joining (see tool 10.4). Refer to tool 10.5 for guidelines for growth path of maiden ewes.

It is important to determine the relative benefit of supplementary feeding to wean more lambs.

Joining management

Managing ewes at joining

The following management aspects need attention in breeding flocks:

➜ Join maiden ewes and adults separately as they have different ram requirements.

➜ Ewe health is extremely important. Any health issue such as worm burdens, liver fluke or footrot will slow weight gain or cause weight loss resulting in lower reproductive rates (see procedures 11.2 and 11.3 in ***Healthy and Contented Sheep***).

➜ Avoid joining ewes within two weeks of shearing as shearing can disrupt cycling activity for two weeks.

➜ Avoid joining ewes with full wool as mating can be physically more difficult.

➜ Avoid joining ewes on pastures that may be toxic to sheep. For example, high endophyte perennial rye grass pastures may lower conception rates and lambing performance by as much as 20%, even without visible rye grass staggers.

➜ Avoid severe stress (such as more than 1kg liveweight loss per week or extreme variation in feed quality) when joining ewes, as embryo loss may be higher.

Managing rams for joining

Ram management is important to a successful mating:

➜ Give rams a breeding soundness examination at least eight weeks before joining (see tool 10.6).

Use tool 10.6 to examine your rams at least eight weeks prior to joining

➜ Shear rams at least eight weeks before joining as shearing cuts and resulting fever, or compromising temperature change, may affect semen quality.

➜ Join rams at 1% plus one extra ram for mature ewes (at least five rams for a mob of 400 ewes), at least 1.5% for maiden ewes and 2% for ewe lambs.

➜ Higher ram joining rates are necessary in large paddocks with multiple watering points or when rams are joined outside the main breeding season.

➜ If rams need to increase condition score before joining, feed a high quality feed such as lupins for 50 days prior to ensure maximum testes size and sperm output.

➜ Avoid joining inexperienced rams with maiden ewes.

➜ Minimise the risk of lambing difficulties by not joining meat breeds with high Australian Sheep Breeding Values (ASBVs) for birth weight, to maiden ewes.

➜ Allow eight weeks for newly introduced rams to acclimatise if they have been brought in from outside your district. Housed rams may need even more time to become accustomed to paddock feed before joining commences.

➜ If ewes are being supplemented during joining, make sure rams are accustomed to the same supplementary feed as ewes to avoid rumen acidosis.

Length of joining

Join rams with ewes for two 17 day cycles or five weeks. If your flock is mated outside the peak breeding season (before February), use teasers to stimulate oestrus in ewes that aren't cycling spontaneously. Alternatively join ewes for six to seven weeks. Most ewes get pregnant in two cycles.

On more intensively run farms, extending the joining for longer periods is not recommended because the 2-4% of extra lambs holds up completion of important management events such as marking and weaning. Delaying weaning for a few late lambs can result in serious worm burdens, leading to weight loss in both ewes and lambs. In winter lambing Merino flocks, the late lambs generally have poor survival rates because they have a lower bodyweight over summer. They also compromise ewe weight recovery for the next reproductive cycle.

Avoid joining ewes within two weeks of shearing as shearing can disrupt cycling activity for two weeks

Join rams with ewes for two 17 day cycles or five weeks

Joining maiden ewes

Bodyweight is the critical factor with maiden ewes. Management practices such as regular monitoring of bodyweight and condition score are essential for a successful joining and a higher percentage of lambs weaned to ewes joined.

Grow maiden Merino ewes to be at least at 75–80% of mature liveweight for successful joining (see tool 10.5).

Maiden crossbred ewes can be successfully joined at 7–9 months at a minimum of 45kg bodyweight at joining, provided they have access to good quality feed during pregnancy to ensure they are condition score 3 at lambing. Do not attempt joining at 7–9 months if adequate feed cannot be provided.

What if ewes fail to get in lamb?

When joining in the peak breeding season, at least 90% of Merino ewes and up to 95% of crossbred ewes get pregnant in the first two cycles. Pregnancy rates can be 10% lower if joined outside the normal breeding season.

If more than 15% of ewes are not pregnant in the target mating time an investigation to determine the reason for ewes failing to conceive is necessary.

Both ewe and ram problems can contribute to poor results. Consider pasture toxicities, including syndromes such as perennial rye grass toxicosis (see procedure 11.4 in ***Healthy and Contented Sheep***) or oestrogenic clover infertility. Consult your animal health adviser to investigate problems.

Visit www.sheepgenetics.org.au or Module 9 to explore the possibility of including genetic traits that can help assist in higher lamb survival rates such as BWT, NLB, NLW (especially if using maternal rams).

Signposts

Read

Lifetime Ewe Management Handbooks for your region. Available from www.lifetimewool.com.au:

Lifetime Wool Regional Guidelines: a series of guidelines and recommendations for managing ewe flocks throughout the year. Visit the Lifetime Wool website: www.lifetimewool.com.au/guidelines.aspx

Managing ewes for successful joining. Practical wisdom notes series available from www.sheepcare.org.au

View

Grazfeed®: a decision support tool to help graziers improve the profitability of livestock production, through more efficient use of pastures and supplementary feeds. Grazfeed® can be purchased by contacting Horizon Agriculture on www.hzn.com.au/grazfeed.php

MLA Tips & Tools

45x7 - Joining ewe lambs for more profit. Stock reference LP1790. Get your copy by:

- Calling: 1800 675 717
- Emailing: publications@mla.com.au
- Downloading from: www.mla.com.au/ search for 45 x 7

Lifetime Wool - Tools for Management: a wide range of tools to help sheep producers manage their ewe flock more effectively. Visit the Lifetime Wool website at: www.lifetimewool.com.au/toolsmgt.aspx

Feed testing services analyse the quality of a range of feeds, and are provided by a number of organisations including:

- Agrifood FEEDTEST. Call 1300 655 474
- NSW DPI Feed Quality Service. Call the Customer Service Unit on (02) 6938 1957
- Independent Lab Services (WA). Call 08 9242 5876

If ewes are being supplemented during joining, make sure rams are accustomed to the same supplementary feed as ewes to avoid rumen acidosis

Attend

Lifetime Ewe Management: a workshop focused on ewe nutrition and reproductive performance, along with the development of sheep producers' skills in sheep assessment and feed budgeting. Contact the Rural Industries Skill Training (RIST) centre on:

- Telephone: (03) 5573 0943
- Email: ristvic@rist.com.au
- Website: www.rist.com.au or
- www.sheepcrc.org.au

Wean More Lambs: a workshop for sheep producers who want to improve the reproduction rate of their flock.

MMFS workshop in your area on "Wean more lambs"- contact your state co-ordinator. See www.makingmorefromsheep.com.au

Procedure 10.2

Manage your ewes to improve lamb survival

Background information

Poor survival of newborn lambs is a major source of lost productivity in breeding enterprises where lambing percentages of 110–130% born can result in a marking percentage of 70–90%. Most of these losses are associated with poor nutrition during pregnancy. By contrast, the number of ewes that fail to get in-lamb is normally less than 10% of the mob.

Ewes that are pregnant and lactating produce about 20% less wool than a dry ewe. Ewes that lose a lamb at birth produce about 10% less wool than a dry ewe. This is in addition to the economic loss of the lamb.

Introduction

Important management aspects of nutrition in the pregnant ewe include:

➜ At about 40 days after conception the placenta begins to grow and continues its rapid growth until about day 95. This is followed by accelerated foetal development from day 90 through to lambing at around day 150.

➜ Good nutrition in late pregnancy can overcome poor nutrition in early pregnancy. A condition score change in ewes up to day 90 of pregnancy will change lamb birth weight by 0.3 kg and a condition score change after day 90 will change birth weight by 0.5 kg.

➜ The placenta and foetus represent a considerable mass in late pregnancy and feed quality needs to be high to enable sufficient intake of nutrients. This is particularly the case in the last two weeks of pregnancy.

➜ In normal seasons, spring lambing flocks require few additional nutrients through joining and early pregnancy until 100 days after the start of joining.

➜ Ewes can lose a small amount of weight (0.3 of condition score) if green pasture can be accumulated for grazing and weight gain in late pregnancy.

➜ When pasture conditions do not enable gains in late pregnancy, it is most profitable to maintain condition throughout pregnancy.

➜ Aim to keep ewe condition around score 3 in autumn lambing flocks.

➜ Supplementary feeding grain to day 100 of pregnancy to increase lamb survival has few economic benefits.

AT A GLANCE

- Management of ewe nutrition during pregnancy increases lamb birth weight and survival.
- Ewes in condition score 3 at lambing are likely to wean more lambs.
- Manage twin-bearing ewes to be at least condition score 3 at lambing.
- There is considerable economic loss when ewes get pregnant but fail to rear a lamb.

➜ Improving ewe nutrition during late pregnancy will normally increase birth weight and lamb survival, increase wool production in ewes but also increase fibre diameter.

➜ The birth weight of a lamb is determined by the following factors: sex, litter size, placental development, ewe condition, genetics, length of gestation and the timing, quality and quantity of pasture during pregnancy.

➜ Optimum birth weight for lamb survival is between 4.5 and 5.5 kg. Survival decreases sharply if lambs weigh less than 4 kg or more than 6kg at birth.

➜ Recent research has shown that potential lifetime wool production of the progeny can be compromised by poor ewe nutrition during mid and late pregnancy. A 10kg drop in liveweight between joining and day 90 reduced progeny fleece weight by 190g and increased fibre diameter by about 0.3 micron. The effects of changes in ewe liveweight during late pregnancy were similar. The effects from both periods are cumulative.

➜ If ewes lose condition in early pregnancy and gain condition in late pregnancy, the effects are similar to maintaining condition throughout pregnancy. During pregnancy, foetal losses are relatively small. Toxicities that cause death of the foetus and infectious abortions can occur in some situations (see procedure 11.4 in ***Healthy and Contented Sheep***).

The challenge for management is to adopt strategies that are cost effective and wean more lambs.

Key decisions, critical actions and benchmarks

Managing ewes during pregnancy

The most favourable nutritional strategy during pregnancy has the following key features: (see tool 10.4)

➜ Ewes can manage a fall from condition score 3 at joining to condition score 2.7 at day 90 of pregnancy where quality pasture is available to allow a gain in weight back to condition score 3 for late pregnancy. Otherwise, maintain condition throughout pregnancy.

➜ Ewe condition score needs to be at least score 3 at lambing to minimise mortality and optimise wool and meat production of progeny (tool 10.4).

➜ Single bearing ewes can be too fat at lambing and their condition should not exceed score 4. Twin bearing ewes are rarely at risk of being too fat due to higher nutritional demand.

➜ When condition score cannot be increased by grazing management in late pregnancy, it is most profitable to maintain condition throughout pregnancy. If the ewes lose weight, supplementary feed.

➜ The least cost option to meeting condition score targets is to match the breeding cycle with pasture availability (see procedure 8.3 in ***Turn Pasture into Product***).

➜ In dry or drought years when the cost of supplementary feeding is very high, consider allowing ewes to fall to condition score 2.5, but feed to maintain ewe conditionin late pregnancy whatever the season. (see procedure 11.5 in ***Healthy and Contented Sheep***).

➜ Supplementary feeding in late pregnancy to increase liveweight is unlikely to be of economic benefit. It can cause an increase in lamb birth weight to the point where dystocia (difficult births) may become a problem.

➜ A tactic may be to increase the pasture quantity available for late pregnancy by deferred grazing in early pregnancy.

➜ Abortions and pasture toxicoses (such as vibrio abortion, onion weed and perennial rye grass toxicosis) occasionally cause major losses during pregnancy and at full term. Investigate any abnormal losses with your animal health adviser.

As a guide for spring lambing flocks on mixed perennial pastures:

➜ Single bearing ewes need Feed On Offer (FOO) of 700–900 kg green dry matter (DM)/ha and twin lambing ewes a FOO of 1,000–1,200 kg green DM/ha during mid-pregnancy. Note: Feed on Offer (FOO) is a measure of total pasture available to ground level.

➜ On annual clover based pastures manage lambing paddocks to achieve a minimum FOO of 1,200 kg green DM/ha at the start of lambing. A FOO of 1,500 kg green DM/ha is recommended for single bearing ewes.

➜ Twin bearing ewes need FOO of 1,800 kg green DM/ha on annual clover-based pastures.

➜ Aim to have twin bearing ewes in condition score 3–3.3 at lambing to optimise survival.

➜ Use the pasture assessment tools in tool 7.6 in ***Grow More Pasture***, PROGRAZE® courses and Lifetime Wool manuals.

For information on clostridial diseases and parasite control during pregnancy see procedures 11.2 and 11.3 in ***Healthy and Contented Sheep***.

Twin bearing ewes need to be condition score 3-3.3 at lambing to optimise lamb survival

Pregnancy scanning ewes

The decision to pregnancy scan ewes, either for wet/dry or multiples is an important one and benefits vary with season, the reproductive rate of the flock, the management of the scanned ewes and whether their number will affect the overall flock structure. Tool 10.7 looks at the pros and cons of pregnancy scanning as a routine management practice.

Timing of routine husbandry practices

As a general rule:

- Shearing ewes pre-lambing increases ewe feed requirements by 25–30% when shearing coincides with cold winter weather.
- Being held off-pasture for shearing results in weight loss in ewes and possibly higher supplementary feed requirements, especially in poor pasture growth seasons.
- If shearing happens to coincide with wet weather there is also greater risk of metabolic problems and pregnancy toxaemia. Ewes in condition score 3 are more able to withstand the effects of cold weather after shearing.
- Crutching within four weeks of lambing is not as risky as shearing, as ewes are less likely to be held off-pasture for extended periods.
- Carry out 6-in-1 vaccination of ewes between 2-6 weeks before lambing.
- In areas where ewes require a pre-lambing drench, make it close to lambing to gain the benefit.
- Trace element treatments may be given at this time or at shearing or crutching, but this should be discussed with your animal health adviser.
- Controlling fox predation is vitally important especially in twinning paddocks. Undertake fox control procedures before lambing commences. See tool 5.11 in ***Protect Your Farm's Natural Assets.***

In the last 4 to 6 weeks of pregnancy there is a greater risk of toxaemia or metabolic syndromes such as hypocalcaemia. This can be off-set by managing routine procedures to minimise stress on ewes. Refer to procedure 11.5 in ***Healthy and Contented Sheep*** and consult your animal health adviser for further information.

Signposts

Read

Lifetimewool Ewe Management Handbooks for your region Available from www.lifetimewwool.com.au.

Lifetime Wool Regional Guidelines - a series of guidelines and recommendations for managing ewe flocks throughout the year. Visit the Lifetime Wool website: www.lifetimewool.com.au/guidelines.aspx

Attend

Lifetime Ewe Management – the workshop focuses on the health issues associated with the Merino ewe and develops sheep producers' skills in sheep assessment and feed budgeting. Contact the Rural Industries Skill Training (RIST) centre on:

- Telephone: (03) 5573 0943
- Email: ristvic@rist.com.au
- Website: www.rist.com.au

Managing Pregnant Ewes workshop, hosted by your local pregnancy scanning contractor and the sheep CRC.

MMFS workshop in your area on "Wean More Lambs" - contact your state co-ordinator. See www.makingmorefromsheep.com.au

Procedure 10.3

Keep maximum number of lambs alive to weaning

Background information

The profitability of high-performance lambing systems depends on targeting those management practices that are cost effective and will improve lamb survival. Most lamb loss occurs in the first three days after birth so reducing lamb losses must focus on factors that can improve survival of new-born lambs.

As the condition score of ewes at lambing increases, so does lamb survival, especially in twin bearing ewes.

Introduction

Important principles to increase lamb survival are:

➜ Select a lambing time that is likely to maximise survival of new-born lambs.

➜ Ewe condition at lambing is the most important determinant of lamb survival, due to its effect on lambs birth weights.

➜ Cold, wet and windy weather increases lamb mortality, particularly with lambs that have a low birth weight. Manage ewes to minimise the impact of weather at lambing. Plan to have sheltered paddocks available for lambing.

➜ Early selection of lambing paddocks on the basis of size, availability of shelter, and pasture quality and quantity available for ewes are critical management decisions affecting the ability to wean more lambs.

➜ The effects of prolonged birth and the combination of hunger and mismothering account for the majority of lamb deaths.

➜ If ewe nutrition is poor, there is delayed production of colostrum and new-born lambs are at risk if they do not receive a drink soon after birth. In addition, mothering ability and lamb behaviour are depressed when ewe nutrition is poor.

➜ The longer a ewe stays at the birth site, the greater the chance of the ewe and lamb forming a bond.

AT A GLANCE

➜ Select a lambing time likely to maximise survival of new-born lambs.

➜ Manage ewe density and mob size for best lambing results.

➜ Early selection and pasture preparation in lambing paddocks ensures that lambs reach target weaning weights.

➜ Depending on the individual ewe and the breed type, it takes up to six hours for a ewe to recognise her lamb and in this time a ewe may accept any lamb as her own. It also takes lambs twice as long to recognise their mothers and if a lamb is abandoned within six hours of birth it has little chance of survival. Merino ewes do not recognise twins very well.

➜ Ewes about to give birth may 'pirate' recently born lambs only to abandon them when their own lamb is born.

➜ When the number of ewes lambing is at its peak, the lambing paddock is a busy and cluttered place. Best practice is to minimise any disturbance in the lambing flock.

Focus on factors that can improve the survival of new-born lambs

➜ Predators can account for between 5–10% of losses in some situations. But predators are usually of secondary importance compared with hunger, mismothering and hypothermia.

➜ When predators are known to cause lamb loss, start baiting well before lambing and continue until well into lambing.

Key decisions, critical actions and benchmarks

Lamb survival rate targets

Lambing management needs to aim for lamb survival better than:

➜ Merino ewes: single bearing – 90% survival; twin bearing – 70% survival

➜ Crossbred ewes: single bearing – 90% survival; twin bearing – 80% survival

As ewe condition score at lambing increases, so does lamb survival, especially in twin bearing ewes.

In the period from three days after birth to before weaning, aim to keep lamb death rates at less than 3%.

Selection of lambing paddocks

Several key features need to be considered when selecting lambing paddocks.

Pasture availability targets

The following pasture targets provide a guide to best practice:

➜ Where ewes are scanned and drafted into single and twin bearing, allocate ewes to lambing paddocks that have the best pasture/best shelter to least pasture/most exposed on the following basis:

Twin lambing low condition score	best pasture/ best shelter
Twin lambing high condition score	↓
Single lambing low condition score	
Single lambing high condition score	least pasture most exposed

➜ As a guide, aim for:

- Mixed perennial pastures: FOO of at least 1,200kg green DM/ha in lambing paddocks, and preferably more with twin lambing groups.
- On annual clover-based pastures, FOO of 1,500-1,800 kg green DM/ha is recommended at commencement of lambing.
- Prioritise the available pasture resources to ensure paddocks have adequate quantity for ewes at lambing.

➜ If pasture is likely to be limited during lambing, save pasture in early pregnancy or consider adopting strategies to increase pasture production.

➜ If pasture availability targets cannot be met on a regular basis use tool 10.2 to review your current lambing time.

Lambing paddock shelter

The factors contributing to the risk of hypothermia in lambs include combinations of temperature, rainfall and wind speed. Of these, only wind speed can be controlled by using naturally sheltered lambing paddocks. As a guide, sheltered paddocks can reduce lamb mortality rates by about 10% but shelter will provide less benefit if lambing in location/seasons with mild weather.

Ideally, lambing paddocks that are sheltered from the prevailing winds and provide shelter over the entire paddock are best for lambing. Satisfactory shelter

Lamb survival increases with increasing ewe condition score at lambing

can be provided by trees, shrubs and tussocks. It is important that shelter belts are designed properly otherwise they may act as wind tunnels when grazing livestock remove the foliage from the lower branches (see procedure 5.3 in ***Protect Your Farm's Natural Assets***).

When selecting lambing paddocks, consider the sheep grazing behaviour and paddock characteristics and avoid those where ewes are likely to lamb in exposed areas. Preferred paddocks are north and east facing, have good sunlight in the morning, are well drained and provide good access to water.

Paddocks with low worm risk
In high rainfall regions, gastrointestinal parasites are a major cause of production loss in ewes and poor growth in lambs. Ideally, graze ewes on paddocks with low worm contamination during lambing. Worm management is discussed in procedure 11.2 in ***Healthy and Contented Sheep.***

Paddock and mob size
The most important consideration is to stock lambing paddocks to match pasture availability with breeding ewe demand (see tool 7.6 in ***Grow More Pasture*** for a range of pasture assessment tools). As a general guide, keep stock densities under 18 ewes/ha in twin lambing paddocks. A smaller mob size will also improve lamb survival, most probably due to lower incidence of mismothering.

Table 10.2 outlines suggested maximum mob sizes.

These are only guides and many other factors must be considered, including the cost of subdivision and management issues with extra mobs.

Control feral predators in the three months before lambing, and during lambing

Predator control
The main predators of new-born lambs are foxes and in some regions, wild dogs and pigs. In some circumstances predators can kill more than 10% of lambs.

If foxes are a problem, baiting in the three months before lambing and during lambing, is recommended (see tool 5.11 in ***Protect Your Farm's Natural Assets***). Pig predation is best managed by selecting lambing paddocks where pigs can be controlled.

Investigating neonatal lamb deaths
Investigate excessive new-born lamb losses and discuss with your animal health or livestock adviser. Tool 10.8 contains a check list to diagnose common causes of lamb losses so you can improve management to reduce deaths in future years.

Supervision during lambing
Best practice is to minimise the disturbance of the lambing flock. If supervision is warranted, the best time to enter the maternity paddock is in the early afternoon. Develop a routine so ewes will become accustomed to human presence and will not leave their lambs. Injured ewes/lambs should be assisted or humanely destroyed.

Lamb marking and mulesing
Losses associated with marking are normally less than 1%. Time marking and mulesing for about two weeks after the last possible lambing date. Hygiene is most important for equipment.

Conduct mulesing in accordance with industry guidelines using an accredited operator (see signposts). If mulesing is conducted when flystrike is possible, treat lambs with a product to prevent flystrike on healing wounds.

Carry out marking and mulesing in clean yards close to the paddock being grazed and ensure the operation is completed early in the day so ewes and lambs can successfully mother up.

For guidelines on additional health treatments, refer to procedure 11.5 in ***Healthy and Contented Sheep.***

Table 10.2 Suggested mob sizes

Flock type	Maximum recommended flock size
Twin bearing mature ewes	100–250
Single bearing mature ewes	400–500
Single bearing maiden ewes	250–400

Nutritional management of lambs until weaning

To achieve target weaning weights ewes and lambs need to graze high-quality pasture. Pasture quality (especially legume content) and quantity are the best indicators of potential lamb growth rates.

In mixed perennial pastures - if pasture availability falls below the critical limit of 1,000 kg green DM/ha or in annual based pastures below 1,200 FOO after the start of lambing, supplementary feeding may be necessary. Mismothering losses due to feeding are likely to be lower if paddocks and mob sizes are smaller.

When available feed resources are low, consider identifying ewes that have lost their lambs or failed to lamb, at marking and remove them to save pasture for lactating ewes. Dry ewes can be managed separately or sold.

Imprint feeding lambs before weaning

Train lambs to feed supplements by 'imprint' feeding before weaning. Feed lambs at least 4-5 times while with their mothers using the supplement most commonly used on the farm at a low rate. The idea is to introduce the lambs to feed so they can recognise the supplement after they are weaned.

This is an important management strategy that reduces the period taken to train sheep to eat a supplement once they are weaned.

Signposts

Read

Managing Ewes in late pregnancy - Practical Wisdom notes, Sheep CRC: www.sheepcrc.org.au

National Mulesing Accreditation Manual – details the preparation and planning, mulesing equipment, chemical and animal health product use and mulesing procedures that meet the welfare standards in the Code of Practice for the Welfare of Animals: the Sheep. To receive a copy of the manual from AWI, or to register for the National Mulesing Accreditation Program (NMAP), call 1800 221 076.

EverGraze Fact Sheets. EverGraze is developing and testing new farming systems in different environments across the high rainfall zone of southern Australia. Download the following fact sheets from http://www.evergaze.com.au/fact-sheets.htm

➜ ***EverGraze Exchange*** - Improving survival of lambs (588kb)

➜ ***EverGraze Action*** - Perennial grass hedges provide shelter at lambing (492kb)

View

FeralMone™– a spray-based lure designed to increase visitation of wild dogs or foxes to bait or trap sites and to assist in bait uptake. Feralmone™ is available from rural merchandisers and agencies responsible for fox and wild dog control programmes (all state agencies except Department of Primary Industries Victoria or Dept of Agriculture & Food WA).

Livestock Library – a database of livestock research and extension information for all sectors of the livestock production industries and the general public.

➜ Visit: www.livestocklibrary.com.au

Attend

Lifetime Ewe Management – the workshop focuses on the health issues associated with the Merino ewe and develops sheep producers' skills in sheep assessment and feed budgeting. Contact the Rural Industries Skill Training (RIST) centre on:

➜ Telephone: (03) 5573 0943

➜ Email: ristvic@rist.com.au

➜ Website: www.rist.com.au

Managing Pregnant Ewes workshop, hosted by your local pregnancy scanning contractor and the Sheep CRC

Website link not working?

Go to the Making More From Sheep website:

www.makingmorefromsheep.com.au

and follow the links to updated signposts

Procedure 10.4

Manage weaners for lifetime productivity

Background information

Management of lambs after weaning has an important influence on reducing post weaning mortality, lifetime productivity and profitability. There are three key management aspects affecting weaner productivity:

➜ Merino weaners need to reach bodyweight targets to ensure highest survival rates.

➜ All ewe weaners need to reach growth targets after weaning to achieve satisfactory reproduction performance as maiden ewes.

➜ Meat breed weaners require access to quality feed to achieve growth targets and meet market specifications.

Excessive post weaning mortality rates are most common in Merino breeding flocks where death rates can be 10% or more. Such high losses are a major financial concern and significantly affect enterprise productivity and profitability.

Introduction

There is a strong association between post weaning survival bodyweight and growth rate. Some features of this relationship include:

➜ Small increases in weaning weight make a profound difference to weaner survival. For example, a 14 kg weaner has a 34% lower mortality risk than a 12 kg weaner, whereas a 20 kg weaner has a 22% lower mortality risk than an 18 kg weaner.

➜ Small increases in the monthly growth rates for weaners can dramatically reduce mortality rates, eg, an increase of 0.25-0.5kg/month can reduce the mortality risk by 74%.

➜ Faster growing and heavier weaners accumulate more body reserves that they can use if required.

➜ The close association between growth rate, bodyweight and mortality risk means that supplementary feeding may be a cost-effective option in weaners.

➜ Apart from nutrition, special attention to weaner health is required such as drenching and flystrike prevention. Refer to ***Healthy and Contented Sheep***

Ewe weaners must have sufficient growth rates to reach the liveweight targets set in procedure 10.1 to ensure adequate conception at first joining, regardless of the age.

Give priority to meat breed lambs for access to high-quality pasture after weaning (see procedure 8.3 in ***Turn Pasture into Product***) so that market specifications can be met (see procedure 3.1 in ***Market Focused Lamb and Sheepmeat Production***).

AT A GLANCE

➜ Wean Merino lambs at 14 weeks after the start of lambing.

➜ Wean lambs onto high-quality, low worm pasture to ensure continued growth rate and post-weaning growth and survival.

➜ Better manage feeding programs by weighing or assessing a random sample of weaners every 4–6 weeks over summer–autumn.

Key decisions, critical actions and benchmarks

Preparation of weaning paddocks

Early selection of paddocks is a critical component of managing lambs immediately after weaning.

Features of ideal weaning paddocks include:

➜ High feed quality: mixed perennial pastures: short green feed (1,200–1,500 kg green DM/ha), preferably with improved pasture species and 20% legume. Annual clover based pastures: 2000-2500kg DM/ha FOO. In the cereal zone a special purpose fodder crop or good quality stubble is an option.

Meat breed weaners require access to quality feed to achieve growth targets and meet market specifications

➜ Low grass seed infestation: particularly barley grass or corkscrew. If lambs need to graze risky paddocks either spray top or slash grass seed heads to reduce the hazard (see Winning Against Seeds in signposts section).

➜ Low worm risk: specially prepared paddocks with low worm burdens (see procedure 11.2 in ***Healthy and Contented Sheep***).

➜ Good quality stock water: easy access to clean drinking water and multiple watering points in larger paddocks.

Age at weaning

In Merino flocks, wean all lambs at 14 weeks after the start of the lambing. At three months, milk provides only 10% of total food requirements and weaning onto high-quality pasture, with a low risk of worms will ensure continued growth and low post weaning mortality.

Weaning Merino lambs at an early age has production benefits:

➜ Heavier liveweight that can be more easily maintained until first joining.

➜ Higher conception rates for ewes at next joining.

➜ More lambs weaned from the following year's lambing.

➜ Weaned lambs grow more wool.

➜ Breeding ewes grow more wool.

These benefits are greatest in poor and variable seasonal conditions.

Weaning meat lambs at around 14 weeks onto high-quality, low worm pastures can be beneficial, when targeting heavier weight markets. When high-quality weaner pasture is limited, wean lambs onto the best available pasture to ensure they grow.

Ewes also benefit from better management to increase liveweight after lambs are weaned. This takes advantage of pastures in late spring before quality deteriorates with summer senescence.

Weigh and draft lambs into weight groups at weaning

Aim to have weaners reach 50% of their mature liveweight as soon as possible after weaning. To achieve this target, weigh or assess a representative sample of lambs at weaning and, when practical, draft weaners into groups for preferential management. Weaners weighing less than 22kg (or 45% of mature weight) need to be managed to ensure weight gain of at least 1kg per month.

Post weaning mortality is highest in the initial three months with the lightest weight weaners being most at risk.

Most losses are in low liveweight weaners and management to increase weight gain will eliminate up to a third of deaths. Formulate supplementary feed rations to account for pasture quality and availability (see procedure 11.1 in ***Healthy and Contented Sheep***).

Monitor weaner liveweight

When lambing in the winter/spring, monitor or assess weaner liveweights every 4-6 weeks over summer and into autumn until pasture quality and quantity is such that the growth rate meets targets. Where necessary, redraft weaners into appropriate weight groups and provide the best available pasture to the low weight group.

Growth targets for ewe lambs

Ewe lambs need to follow minimum liveweight targets set for maiden ewes from birth to pre-mating in tool 10.5. The target weight at any given time depends on the mature size of the ewe. As a guide, manage ewe hoggets to reach 75-80% of their mature weight by 15 to 17 months of age.

When planning to join ewe lambs at seven months of age, ensure they reach at least 45kg at joining and are provided with quality feed to continue to grow after mating through pregnancy to lambing. Preferentially allocate pasture to ewe weaners to ensure they meet growth targets. Formulate feed supplements depending on pasture quality and availability (see procedure 11.1 in ***Healthy and Contented Sheep*** and the Lifetime Wool Management tools in the signposts).

Reducing post weaning mortalities in merino breeding flocks can lift enterprise productivity and profitability

Signposts

Read

Winning against seeds: takes an in depth look into the 'seed problem', from identifying what seeds are on the property to control options and integration into the farm management program. Order your free copy from MLA by:

- Calling: 1800 675 717
- Emailing: publications@mla.com.au
- Ordering on-line: http://www.mla.com.au/publications

View

Lifetime Wool Feed Budgeting tools including:

- Feed Budgeting for Ewe Flocks in the Dry Season
- Feed Budgeting at the "Break of Season" for Ewe Flocks on Annual Pastures
- Green Feed Budgeting for Ewe Flocks (South Eastern Australia)
- Feed Budgeting for Ewe Flocks – NSW

Download ewe nutrition and management information and these tools from www.lifetimewool.com.au/toolsmgt.aspx

Small increases in weaning weight make a profound difference to weaner survival ... a 20kg weaner has a 22% lower mortality risk than an 18kg weaner

Grazfeed® is a decision support tool developed to help graziers improve the profitability of livestock production, through more efficient use of pastures and supplementary feeds. Grazfeed® can be purchased by contacting Horizon Agriculture on www.hzn.com.au/grazfeed.php

Sheep CRC Lamb Growth Rate Predictor Tool – calculate individual growth rates of lambs and predict finishing times. Visit: http://www.sheepcrc.org.au/ and search for lamb growth predictor.

MLA Tips & Tools

45x7 - Joining ewe lambs for more profit. Stock reference LP1790. Get your copy by:

- Calling: 1800 675 717
- Emailing: publications@mla.com.au
- Downloading from: www.mla.com.au/ and search for 45 x 7

Attend

Wean More Lambs: a workshop for sheep producers who want to improve the reproduction rate of their flock. Contact your state Making More From Sheep co-ordinator to host a workshop or visit: www.makingmorefrom sheep.com.au

High Performance Weaner course, contact RIST or the sheep CRC www.sheepcrc.org.au

Procedure 10.5

Prepare your ewes for next joining

Background information

Management of ewes for their next joining starts at weaning or with maiden ewes the previous winter. Important management tactics include:

➜ Careful management of ewe nutrition after weaning to maximise condition score at joining.

➜ Reviewing the previous year's management calendar to identify any potential improvements to the management program.

Assess the condition of ewes at weaning and allocate feed resources depending on condition score. This simple management strategy will lead to naturally weaning more lambs. It is also the most economical way to ensure ewes are in good condition by next joining. Maintaining condition is the most efficient use of feed, as allowing sheep to lose weight and then having to feed supplements to regain condition requires three times more feed.

Cull any ewes with reproductive faults and determine the number of replacement sheep required for the next breeding season. This process may be influenced by planning for the future sheep enterprise mix between meat and wool production.

Key decisions, critical actions and benchmarks

Maximise ewe condition score at the next joining

Wean lambs based on seasonal conditions or rule of thumb:

Weaning lambs 14 weeks after the start of lambing is a fairly good rule of thumb if the joining period was around six weeks and you are experiencing an average season with available green feed. In most situations this will ensure that ewes are able to regain liveweight and body condition after weaning while pasture quality is at a satisfactory level. If the season is exceptionally good, ewes are in more than condition score 3 and lambs are growing well, it may be beneficial to extend the weaning date up to 18 weeks, provided worm burdens are carefully monitored.

However, in a very poor (drought) season there can be a significant benefit to both lambs and ewes by weaning as soon as 10 weeks after the start of lambing (for a 5 week joining period) and providing intensive management to both ewes and lambs. This may mean drafting ewes according to body condition, doing a feed budget on available pasture and providing supplements as needed to achieve target body condition for next joining. Weaning this early is likely to result in many lambs less than 24 kg at weaning. These weaners will require sufficient high quality feed or supplements to grow at more than 1 kg per month to avoid significant losses. Worm burdens will need to be carefully monitored and producers should be alert to potential trace element deficiencies.

AT A GLANCE

- ➜ At weaning, draft ewes into condition score groups and allocate the best available pasture to those ewes below score 3.
- ➜ Immediately after weaning, plan the grazing management up to next joining.
- ➜ Select ewes on rearing ability to make gains towards weaning more lambs.

Condition score ewes and draft into groups at weaning

At weaning use tool 10.1 to separate ewes into management groups with the lower condition score groups being allocated the best available pasture. This is a relatively simple, low cost/high benefit management strategy that is worth the investment of your time.

Ewes in low condition score will rapidly gain weight when grazing green feed. But ewes in low condition cost more to supplementary feed once pasture quality deteriorates. They will also have poorer reproductive performance and are at higher risk of losing their lambs at birth.

Selecting replacement adult ewes
Refer to procedure 9.3 in ***Gain from Genetics*** for recommended approaches to selection and breeding.

Selection for age
While reproductive performance can still be good in older ewes, death rates may be higher and fleece values lower. The optimum sale age for older ewes is between 4 and 6 years depending on flock structure, management plans and relative livestock values.

In non self-replacing breeding flocks the cost of replacement ewes influences the ideal sale age. Meat breed ewes are normally kept for 1-2 years longer than Merinos.

Dry Ewes
Ewes that fail to get in lamb in any one year have a low repeatability of failing to get in lamb the following year. However, ewes that fail to get in lamb 2 years in a row should be culled.

Select for rearing ability
Small, but consistent, gains can be made towards weaning more lambs by culling those ewes which lamb, but fail to rear their young. The 'wet and dry' technique (stripping fluid from the udder at lamb marking) is used to identify ewes that are either rearing a lamb or have lambed and lost. Ewes not rearing a lamb have some udder development but tend to have clear fluid and teats that are dirty. Dry ewes have no birth stain on the breech and little udder development.

The progressive gains from culling maidens that fail to rear a lamb include:

➜ Ewes that reared as maidens rear 10% more lambs at subsequent lambing.

➜ The ability to rear a lamb is passed on to subsequent generations, especially if ram selection includes maternal rearing ability.

Genetic selection for reproductive performance
Reproductive traits have low heritability so genetic gains are slow. Ewe liveweight is correlated with reproductive performance. Scrotal circumference in rams is correlated with ovulation rate in ewes. Setting breeding objectives in a commercial flock is discussed in procedure 9.2 in ***Gain from Genetics***.

In terminal sire breeding flocks where ewe replacements are purchased, consider freedom from disease and genetic merit when determining the purchase price. Use all the genetic information available from ewe and ram databases (from LAMBPLAN ASBVs) to make decisions when purchasing replacement ewes (see tools 9.3 and 9.6 in ***Gain from Genetics***).

Signposts

Read

Lifetimewool Ewe Management Handbooks for your region. Available from www.lifetimewool.com.au

Lambing Planner - Vitual Shepherd version 3. The lambing planner is a useful tool to help manage the breeding cycle. Order a copy from the MLA website by searching for Lambing Planner at: www.mla.com.au/home. Free to members and $15.00 for non-members

View

Reproduction - managing my ewe flock. Visit this section of the Sheep CRC website, which can be found under the Industry, Tools & Information tab on the home page at: www.sheepcrc.org.au

Analysis of the profitability of wool and meat enterprises Final Report 1.2.6 – guidelines (biological and economic) for sheep producers to optimise profit and minimise risk, which can be adapted to suit a range of environments. Visit: www.sheepcrc.org.au/images/pdfs/CRC1/CRC1_Wool/GrassGro/GrassGro_Results-finalv2.pdf

Attend

Managing Pregnant Ewes workshop, hosted by your local pregnancy scanning contractor and the Sheep CRC

Contact your state Making More from Sheep co-ordinator to host a workshop or visit www.makingmorefromsheep.com.au

Select ewes on their ability to rear their lambs

Tool 10.1
Condition scoring

Condition scoring is a process to assess the body reserves of a mature sheep. Condition scoring measures the tissue cover (fat and muscle) over the loin area. The animal is best examined in a race when it is standing and relaxed.

Condition scoring can be used to assess the average condition score of a mob or sometimes it is used to draft individual sheep in a mob so they can be managed in specific nutritional groups. About 25 to 50 sheep scored at random (from the middle of the mob) provides an accurate indication of the mob's nutritional status.

Condition score is a useful tool for understanding the nutritional status of sheep because it more directly reflects the underlying changes in muscle and fat as the animal's nutritional status changes.

Condition score (CS) is used across Victoria, Tasmania, South Australia and Western Australia to manage the nutritional status of adult breeding sheep. In New South Wales, fat score (FS) has also been adapted to assess the nutritional status of adult sheep, particularly in relation to flock reproduction targets. Fat scoring is described in tool 3.3 in ***Market Focused Lamb and Sheepmeat Production***.

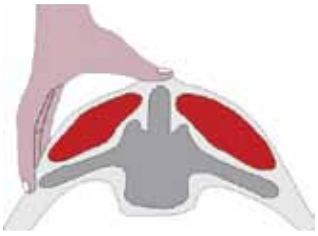
View the "How to condition score" video on www.lifetimewool.com.au

How to condition score

Source: the Lifetime Wool project (www.lifetimewool.com.au)

Condition Scoring

The animal should be standing in a relaxed position. It should not be tense, crushed by other animals or held in a crush. If the animal is tense it is not possible to feel the short ribs and get an accurate condition score



Score 1-Backbone
The bones form an elevated narrow ridge. Each vertebral process can be felt easily as a bone under the skin. There is only a very small eye muscle. The sheep is strong but quite thin (virtually unsaleable)

Score 1-Short Ribs
The ends of the short ribs are very obvious. It is easy to feel the squarish shape of the ends. Using fingers spread 1cm apart, it feels like the fingernail under the skin with practically no covering

Score 2-Backbone
The vertebral processes are elevated but the points are rounded with muscle. It is easy to press between each bone. There is a reasonable eye muscle (store condition ideal for wethers and lean meat).

Score 2-Short Ribs
The ends of the short ribs are rounded but it is easy to press between them. Using fingers spread 0.5cm apart, the ends feel rounded like finger ends. They are covered with flesh but it is easy to press under and between them.

Score 3-Backbone
The spinal processes are only slightly elevated above a full eye muscle. It is possible to feel each rounded bone but not to press between them. (Forward store condition ideal for most lamb markets now. No excess fat).

Score 3-Short Ribs
The ends of short ribs are well rounded and filled in with muscle. Using 4 fingers pressed tightly together, it is possible to feel the rounded ends but not between them. They are well covered and filled in with muscle.

Score 4-Backbone
It is possible to feel most spinal processes with pressure. The back bone is a smooth slightly raised ridge above full eye muscles and the skin floats over it.

Score 4-Short Ribs
It is only possible to feel or sense one or two short ribs and only possible to press under them with difficulty. It feels like the side of the palm, where maybe one end can just be sensed.

Score 5-Backbone
The spine may only be felt (if at all) by pressing down firmly between the fat covered eye muscles. A bustle of fat may appear over the tail (wasteful and uneconomic).

Score 5-Short Ribs
It is virtually impossible to feel under the ends as the triangle formed by the long ribs and hip bone is filled with meat and fat. The short rib ends cannot be felt.

Note One condition score is equivalent to 19% of the standard reference weight for a sheep. The table below summarises the weight of one condition score for different sized sheep.

Standard weight	40 kg	50 kg	60 kg	70 kg
One condition score	7.5 kg	9.5 kg	11.4 kg	13.3 kg

Condition score recording sheet

Source: Lifetime Wool Project

Recording the condition score

Randomly score 25-50 sheep from the middle of the mob. Record the condition score of each sheep with an X on the chart. The middle score of the distribution is close to the average. In this example with 25 sheep, the median value is 3.0 but by using the chart you can see the average is just less than 3.0.

Condition score

				X				
				X				
			X	X				
			X	X	X			
			X	X	X			
		X	X	X	X			
	X	X	X	X	X			
	X	X	X	X	X	X		
1.0	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**	**5.0**

Field template

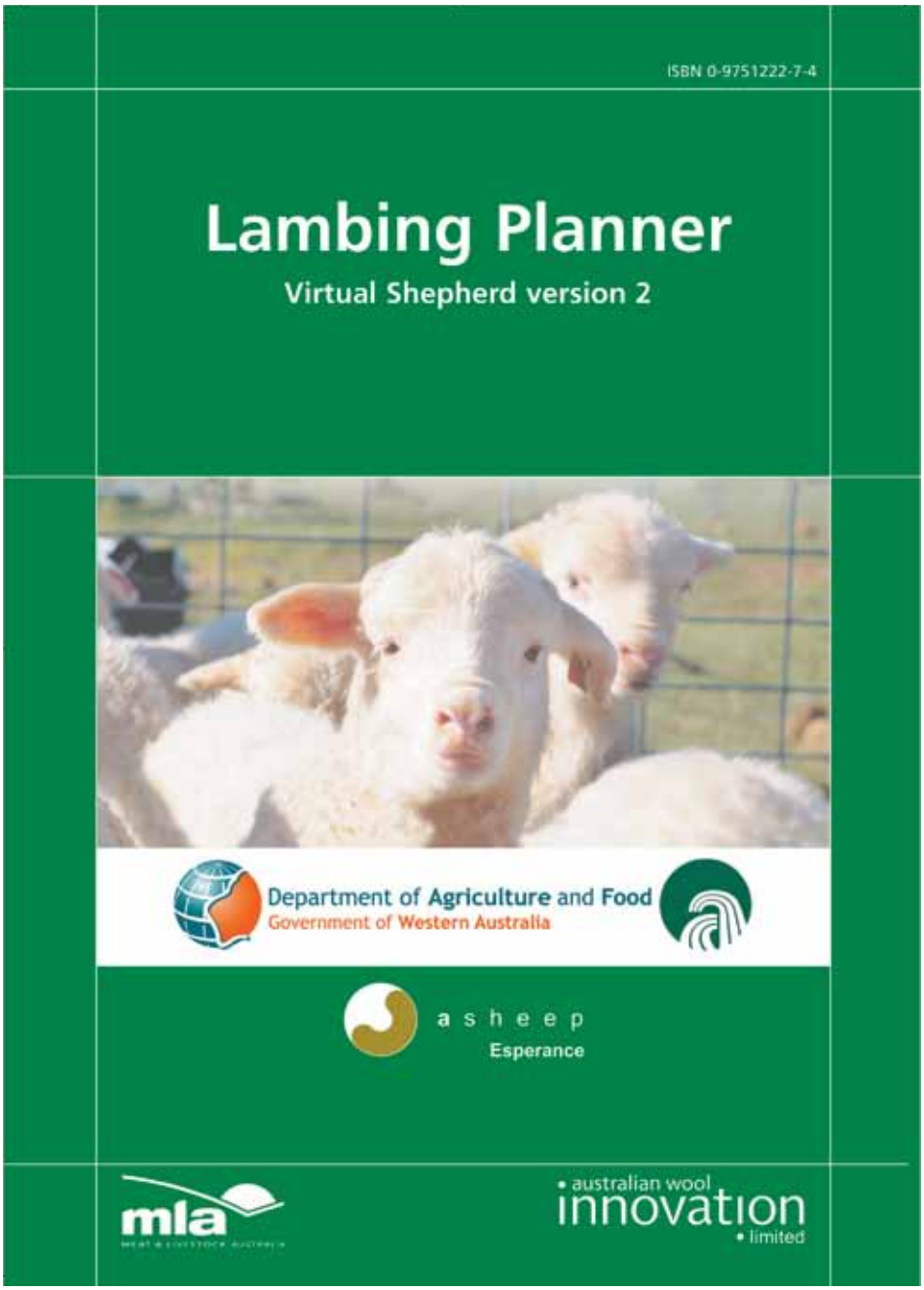
Condition score

1.0	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**	**5.0**

Tool 10.2
The lambing planner

This tool provides a systematic basis for planning the management calendar for the breeding flock.

A free copy of the Lambing Planner is included with every Making More from Sheep Manual. For other copies contact The MLA hotline 1800 675 717 (freecall within Australia), or the Albany office of the W.A. Department of Agriculture on (08) 9892 8444.



Tool 10.3

How the 'ram effect' works

The 'ram pheromone effect' can be used to stimulate oestrus in ewes joined outside the breeding season (Sept to December) and to concentrate the joining. For this to be effective, all rams (including those of the neighbours), need to be kept at least 1km from the ewes for at least one month before the start of joining.

The sudden introduction of rams or teasers (vasectomised rams) in spring to ewes that have been isolated from rams will induce ewes to start cycling. This is known as the 'ram effect'.

For out-of-season breeding, teasers can be introduced to ewes 14 days before mating. This will stimulate ewes to cycle when rams are introduced, leading to a more compact joining and lambing. Where a ram response occurs, most ewes will come on heat 17 or 25 days after the first ram or teaser introduction.

The major benefit of successfully using the ram effect is to achieve a high proportion of ewes in lamb over a short period of time and a more compact lambing. The response will only occur with out of season breeding when mating before the summer solstice (the "longest day"). The effect is more pronounced in British breeds than Merinos.

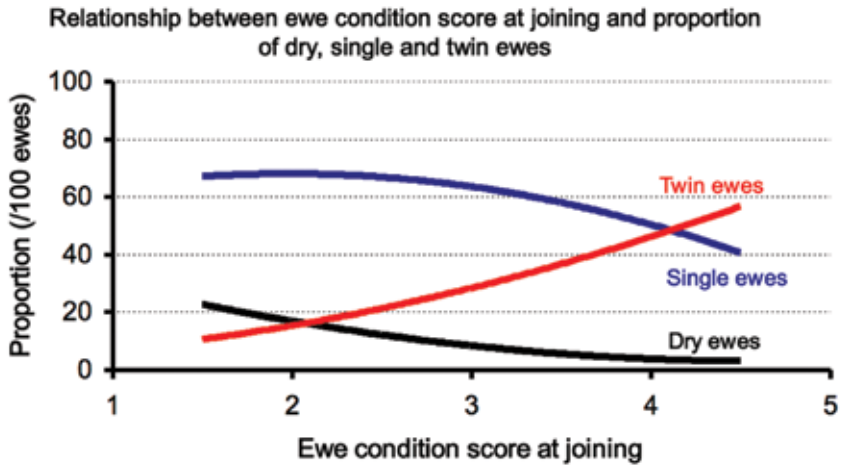
Tool 10.4

Recommended condition score and fat score targets for ewes

Graph of pregnancy status related to condition score

Source: Lifetime Wool: plot and paddock scale sites

Figure 1. The relationship between the number of lambs born and ewe condition score.



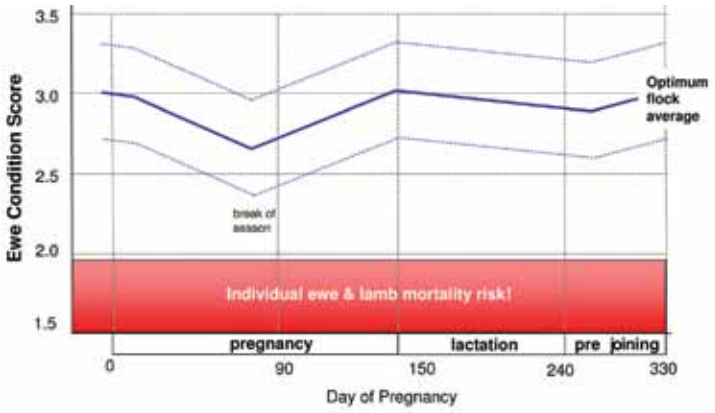
The following graphs are the recommended condition score guidelines to optimise reproductive management and lifetime progeny performance (source: Lifetime Wool project). They are presented for regions, enterprise types and a range in lambing systems. Check www.lifetimewool.com.au for downloadable copies for your region.

Merino ewe condition score profiles

View the profile for your area by visiting www.lifetimewool.com.au

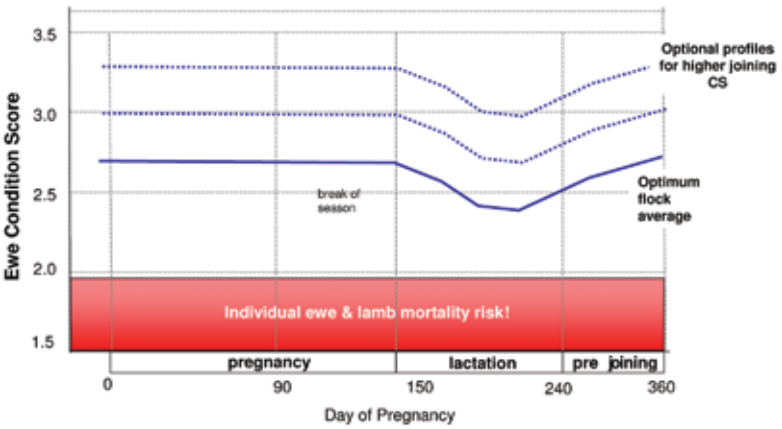
Source: www.lifetimewool.com.au

Fig 2. High and Medium Rainfall Zone (mixed perennial and annual pastures) – Spring lambing



Source: www.lifetimewool.com.au

Figure 3. Sheep Wheat Zone (annual pastures WA, northwest Vic, SA & southwest NSW) – May lambing



Tool 10.5

Bodyweight targets for weaners and young ewes

The table provides a guide for the minimum target liveweight for maiden ewes from birth to pre-mating. The target weight at any given time depends on the mature size of the ewe. Following these guidelines ensures high rates of weaner survival and acceptable reproductive performance in young ewes.

Adult weight (kg)	Birth (kg)	Weaning on dry pasture (kg)	Autumn break (kg)	Late winter (kg)	Mating on dry pasture (kg)
45	4	20	22.5	27	34–36
50	4.5	22.5	25	30	37–40
55	5	25	27	33	41–44
60	5	27	30	36	45–48
70	5.5	31.5	35.5	42	52–56
% of adult	8–9%	45%	50%	60%	75–80%

Tool 10.6

Ram check list

Examine rams for breeding soundness at least eight weeks before joining to determine the number of replacement rams that need to be purchased and to allow time for them to acclimatise.

- Body condition score should be 3.5 at mating. Feed lupins or high protein feed for 50 days prior to joining to ensure maximum testes size and sperm output (up to 750g/h/d).
- Rams should not be lame, so if required, trim their hooves to a normal shape.
- Testicles should be firm, springy on palpation with scrotal circumference above 28cm with no abnormal lumps on palpation. If your rams have abnormal lumps on their testicle, get a blood test to check for ovine brucellosis.
- Examine prepuce and penis for evidence of inflammation and damage.
- Rams should be vaccinated with 6-in-1, and jetted on the poll (and body) to avoid flystrike.
- Any ram that has been sick with a fever in the last eight weeks should not be used for mating as high temperature disrupts semen production.

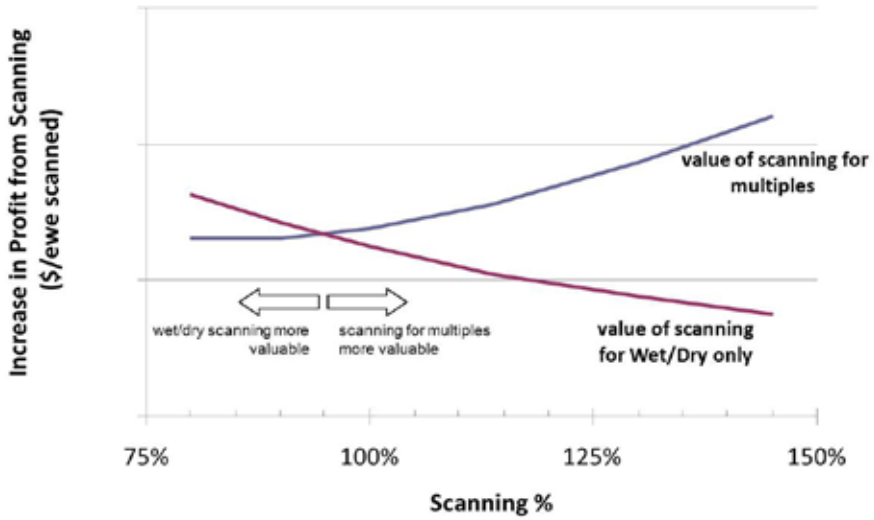
Tool 10.7

Pregnancy scanning of ewes

Pregnancy Scanning is used to identify multiple pregnancies to better manage twin bearing ewes and to identify and remove barren ewes. Careful consideration needs to be made of the costs and benefits of pregnancy scanning to achieve a management and economic gain in the breeding ewe enterprise. Skilled contractors can also scan ewes to age the foetuses conceived in either in the first or second cycle of joining. This information can be used to separate mobs into early and late lambing flocks and better allocate feed and limit the number of ewes in twinning mobs.

The benefit from determining pregnancy status relies on the proportion of drys, singles and twins in the mob. As the scanning rate (foetuses/100 ewes) increases, the benefit of scanning for multiples increases compared to the benefit of scanning for just wet/dry. Above 90% scanning (90 foetuses/100 ewes joined) the value of scanning for multiples becomes higher than the benefit for scanning on wet/dry alone. Figure 1 shows the benefit when the impact of culling dry ewes on the overall flock structure is accounted for.

Figure 1. Pregnancy scanning value per ewe (accounting for impacts of cullling on flock structure)



Reallocation of feed to twin-bearing ewes:
Scanning for multiples allows the twinning ewes to be managed separately. Twin-bearing ewes need to be 0.3 of a Condition Score better than single-bearing ewes at lambing to ensure good birth weights and survival and optimise the lifetime production of their lambs. In average seasons it is most profitable to reduce feed for the dry ewes and give more to the twin-bearing ewes. In poor seasons it is more profitable to reduce feed for the dry and single- bearing ewes and give more to the twin-bearing ewes.

Dealing with dry ewes:
Identifying the dry ewes can add value to the ewe flock through managing them differently, ie. selling them or giving them less feed and running them as a wool producing flock only. Dry ewes cost less to run as they can be run as a wether flock, producing a good fleece on 7 MJ energy/day. Leaving the non-pregnant ewes in the lambing flock costs money as they will eat as much as pregnant ewes for little additional benefit and they will compete with pregnant ewes when feed is limiting.

Tool 10.8

Check list for new-born lamb mortalities

The list below outlines the features and cause of death in new-born dead lambs. Use the list in conjunction with your veterinarian to determine the cause of death of new-born lambs.

Feature	Comment
Liveweight < 3.5 kg	At risk of exposure/hypothermia
Liveweight > 5.5 kg	At risk of dystocia (difficult birth)
Has birth stain been cleaned?	Mismothering or dead at birth
Pads still on feet	Hasn't walked
Skin on neck and chest/back: bruising or teeth marks?	Bruising associated with teeth marks indicate predation to be the cause of death
Do lungs float in water?	If they float the lamb has breathed if they sink, the lamb died before birth
Milk clot in stomach	Lamb has suckled
Kidney fat red	Fat mobilised – lamb in nutritional deficit
Kidney fat white	Either dead at or soon after birth or lamb fed and lamb not under nutritional stress when died.
Swollen tongue, head, neck	Dystocia
Genetic malformation	Various features incompatible with life
Thyroid weight >0.4g/kg birth weight	Goitre iodine deficiency

The common features of lambs that have died of hunger/mismothering/hypothermia are light birth weight, red kidney fat, and no milk clots.

For the most up-to-date Making More from Sheep information, including web signposts, products, publications and events, visit **www.makingmorefromsheep.com.au**

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