



SHEEP SUSTAINABILITY FRAMEWORK

On-Farm Insights from the
National Producer Survey
October 2022



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About this Report

The world's first Sheep Sustainability Framework (SSF) was launched in 2021 and its initial annual report was released in 2022. The SSF is led by the peak industry councils Sheep Producers Australia (SPA) and WoolProducers Australia (WPA). The SSF identifies sustainability issues for the Australian sheep industry, determines priorities on which to focus, and measures progress over time.

Reporting industry metrics over time has significant value. It can drive refinement and adoption of on-farm initiatives, better inform program investment and design, attract investment in the sector, underpin successful market access negotiations, signal trust-building transparency for customers and offer compelling evidence to maintain the industry's social license to operate.

The National Producer Survey is designed to capture data about on-farm practice. The data informs the reporting of SSF metrics and provides important information to Meat & Livestock Australia (MLA) and Australian Wool Innovation (AWI) about on-farm programs.

At the time of the SSF Annual Report release in July 2022, the outputs from the National Producer Survey were still undergoing collation. This document reports SSF-relevant benchmark data and insights from the completed National Producer Survey.

For consistency and readability, the data and insights are presented by theme and priority as structured in the SSF Annual Report.

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The Framework on a Page

Vision

Sustainably producing the world's best sheep meat and wool, now and into the future.

Definition

Sustainable sheep meat and wool production means producing sheep meat and wool by current and future generations in an ethical and environmentally, socially, and financially responsible manner.

Principles

The PRINCIPLES that guide implementation and improvement of the SSF are

1. Transparency
2. Accountability
3. Inclusivity
4. Credibility
5. Practicality
6. Relevance

The SSF structure comprises

4





Themes

9

Focus Areas

21

Priorities

Theme	Focus Area	Priority
Caring for our sheep		
	1. Animal care and handling	1.1 Reduce, refine and replace painful husbandry practices
		1.2 Implement best practice sheep management
		1.3 Ensure humane processing and on-farm euthanasia
	2. Animal health	2.1 Prevent and manage disease
Enhancing the environment and climate		
	3. Environment	3.1 Improve natural resource management
		3.2 Responsible environmental practices
		3.3 Encourage biodiversity
	4. Climate change	4.1 Reduce net greenhouse gas emissions
		4.2 Adapt to a changing climate, including extreme weather events
Looking after our people, our customers and the community		
	5. Health and safety	5.1 Improve industry safety culture
		5.2 Improve our people's health
	6. Capacity building	6.1 Support and grow workforce
		6.2 Encourage workforce diversity
	7. Contribution to community	7.1 Enhance community trust
		7.2 Deliver products that customers demand
Ensuring a financially resilient industry		
	8. Profitability, productivity and investment	8.1 Maintain or increase industry profitability
		8.2 Maintain or increase contribution to the Australian economy
		8.3 Increase productivity
		8.4 Encourage innovation
	9. Market access	9.1 Ensure positive market positioning and access
		9.2 Guarantee product integrity and safety

The National Producer Survey

MLA and AWI commissioned research agency Kynetec to undertake the National Producer Survey. On-farm practice surveys for the Australian sheep industry have been running in various formats for more than 20 years.

The National Producer Survey was designed to collect comprehensive data about on-farm production practices to inform SSF metrics and to provide valuable insights for the industry.



Survey Overview



Methodology

Online Survey and
Computer Aided Telephone
Interviews (CATI)

Respondents were
asked questions about
their on-farm practices
for the year 2021.



Duration

**25
minutes**



Sample

N=2,003 Sheep producers

Merino:

n=1,203

Non-Merino:

n=800

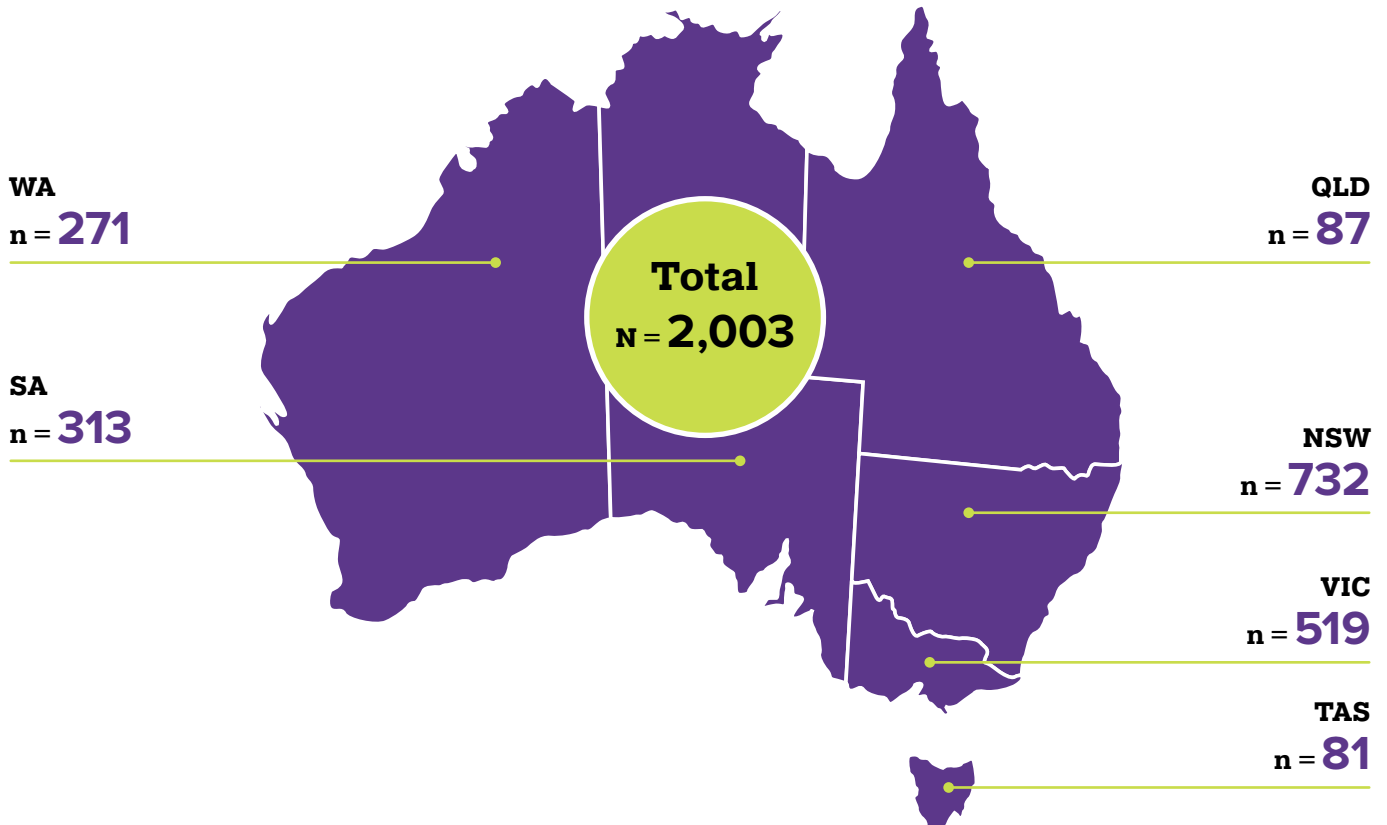
minimum flock size

**100 head
in 2022**

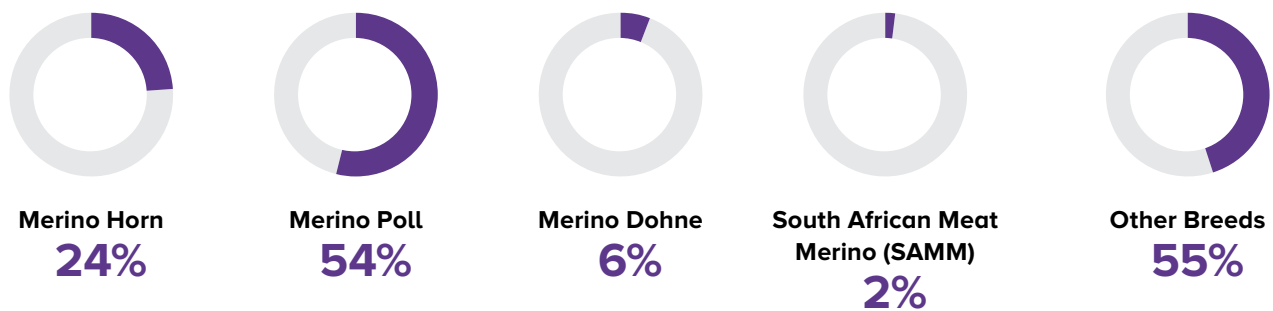
Merino producers must join
maiden and/or mixed age
Merino ewes to Merino rams
to qualify as "Merino"

Respondents were sampled from
the Meat & Livestock Australia
membership database.

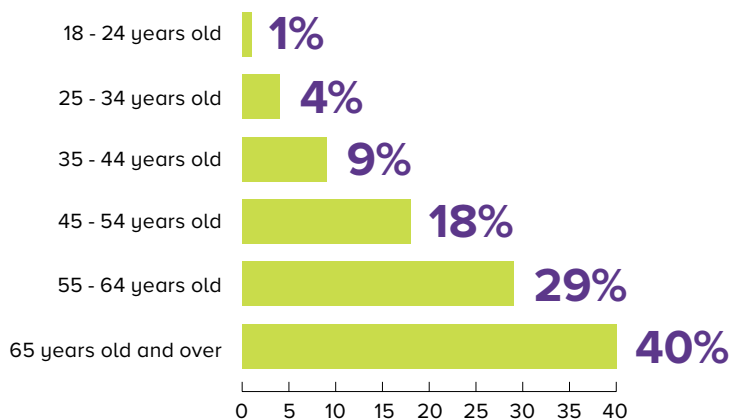
Respondent Demographics



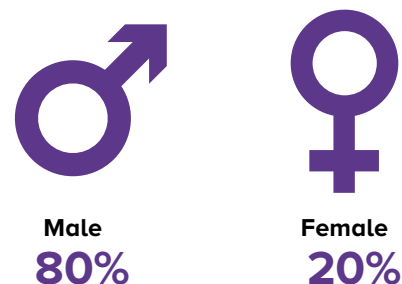
Sheep Sample Distribution



Respondent Age



Respondent Gender



The survey sampling was stratified (divided) into six state and three flock size quotas (100 – 499, 500 – 1,999 and 2000 + head) based on ABS producer population data (18 quotas in total).

Producers with larger flock sizes had a higher completion rate than those with smaller flock sizes. Two strategies were undertaken to address this:

1. Quotas for larger flock sizes in each state were closed to prevent any further completes from this group and allow interviewing to target smaller producers
2. Survey results were weighted to the distribution of flock sizes as given by ABS to ensure that larger flock sizes were not over-represented in the final results.

What is the Role of Quotas in Surveys?

Quotas are generally established in surveys to ensure a good balance of responses from different groups of respondents.



On-Farm Data and Insights



Caring for Our Sheep

The health and wellbeing of our animals is fundamental to a sustainable and resilient industry and is of critical importance to our stakeholders. The materiality assessment undertaken to inform the development of the Sheep Sustainability Framework identified animal husbandry and handling, along with animal wellbeing and welfare, as two of the industry's most material topics.

Animal husbandry and handling and animal wellbeing and welfare are the industry topics where producers, transporters and processors can have the greatest impact; and they are the topics that have the greatest influence on stakeholder decision making.

Focus Area 1: Animal Care and Handling

Priority 1.1

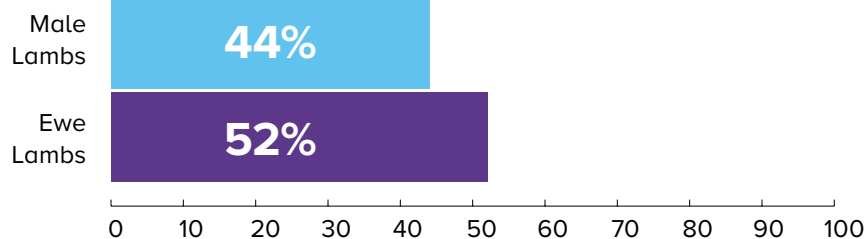
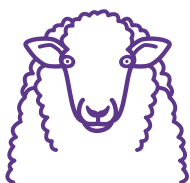
Reduce, refine, and replace painful husbandry practices

Indicator 1.1.1: Level of Mulesing in the Australian Flock

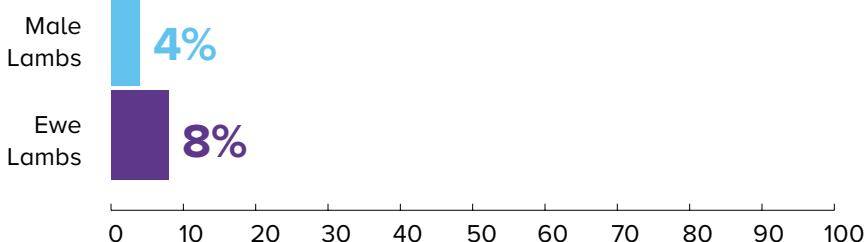
Note: the original SSF launched in 2021 used the wording '1.1.1a % total flock mulesed (Merino vs non-Merino)'. As the National Producer Survey was designed and developed to capture benchmark data in 2022, it became clear that the metric would need to be '% producers who mules their flock'.

1.1.1a % producers who mules their flock

Merino



non-Merino



Base N = 2,003

About Flystrike

Painful death and illness from flystrike remain a risk to sheep across most Australian environments. Unfortunately, associated skin wrinkle in the breech area and, to a lesser extent, the density of fleece of Merino sheep has made the breed particularly susceptible to flystrike when control procedures, such as mulesing, are not in place. In comparison, sheep meat breeds are plainer bodied, with less dense wool and, consequently, lower susceptibility to flystrike.

The industry cost of flystrike is approximately \$320m per year due to lost production and the expenditure involved in flystrike prevention and treatment. For most

woolgrowers, mulesing remains a necessary option to protect the lifetime welfare of sheep, just as crutching, shearing and chemical treatment use are also important to protect sheep from all forms of breech, body, pizzle, poll and wound strike.

AWI's and MLA's research, development, and adoption (RDA) programs represent a diversified investment in the principles of integrated pest management. The RDA programs aim for practical solutions for sheep producers in order to prevent flystrike to ensure the lifetime welfare of individual sheep whilst reducing reliance on mulesing.

About SimpliFly™

AWI, in conjunction with state grower extension networks, has recently launched one-day workshops on flystrike management called SimpliFly™. Through these workshops, AWI-accredited trainers help woolgrowers reduce the prevalence and impact of flystrike on their flocks and enterprise profitability. The workshops outline the range of strategies and tools available to growers, how to use them in combination, and guide the participants in the development of property-specific management plans.

Cam Munro, General Manager of Egelabra Merino Stud, said he found the SimpliFly™ workshop valuable.

"I particularly found the calendar and plan to be really useful, really practical," Mr Munro said.

"I can easily work them, and they'll be extremely helpful in the operation."

Many Merino producers are now reducing the need for mulesing by breeding sheep that are less susceptible to flystrike. With targeted breeding programs over a number of years and well-planned flystrike control programs, many Merino breeders have now been able to phase out mulesing completely, however, this is a relatively slow process.

According to the 2018 AWI Australian Sheep Parasite Control Practices National benchmarking survey, 69% of Merino x Merino producers used mulesing. The 2022 National Producer Survey reports 52% of Merino producers mulesed ewe lambs and 44% mulesed male lambs.

MLA has also launched the *Towards Non-Mulesed Sheep* program that supports sheep producers to use existing tools and management strategies

to transition to a non-mulesed flock. The three-year project involves working with 40 sheep producers to:

- Identify their breech strike risk factors (environmental, genetic, management), understand how these are affected by season and changing climate, and develop their own management strategy to reduce this risk.
- Support the establishment of two to three trials on-farm per group to evaluate some element of their five-year plan towards running a non-mulesed mob. This could be comparing a small mob of non-mulesed sheep with a mulesed mob or evaluating progeny of rams selected for Australian Sheep Breeding Values (ASBVs) for fly resistance.
- Evaluate the challenges, costs, benefits, and opportunities of running a non-mulesed mob of lambs in comparison to a mulesed mob and explore future marketing and value chain opportunities.

At project completion in 2024, any further management changes will be identified to support producers to transition to ceasing mulesing across the whole flock.



Kate and Cam Munro, General Manager of Egelabra Merino Stud.

■ Indicator 1.1.2: Use of Pain Management Associated with Mulesing, Castration, and Tail Docking

About Pain Management

The use of suitable products to manage pain, relieve inflammation, reduce blood loss, disinfect, and protect wounds is regarded as best practice in animal husbandry. Using a pain management treatment suitable for the animal husbandry method reduces the temporary impacts from husbandry procedures and improves flock productivity.

There are two classes of registered products used to manage pain from mulesing, tail docking and castration

procedures. These are the fast-acting but short-lasting local anaesthetics, and the slow-acting but longer-lasting analgesics. A combination of anaesthetic and analgesic products offers the most effective pain management for husbandry procedures. Combining products gives lambs the best chance of a fast recovery by addressing immediate pain and the associated distress and managing discomfort that might occur during the healing process.

Pain Management Findings and Implications for SSF Reporting

The results of the National Producer Survey have called into question the fitness of the SSF metrics 1.1.2 a, b, and c - *% producers who use pain management at mulesing/ castration/ tail docking*.

It is recommended that the metrics 1.1.2 a, b, and c be revised to *% producers who use suitable pain management at mulesing/castration/tail docking*. This change will be subject to approval of the SSF Steering Group and Board.

Pain Management Products for Use in Australian Sheep

Tri-Solfen®, a local anaesthetic, was registered for mulesing in 2007 and tail docking and castration in 2016, whilst the Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) Metacam® and Buccalgesic® were registered for mulesing, tail docking and castration in 2016 (Metacam®) and 2017 (Buccalgesic®). Numnuts, a handheld device that delivers a local anaesthetic for ring castration and tail docking by rings (NumOcaine®) was launched in 2019.

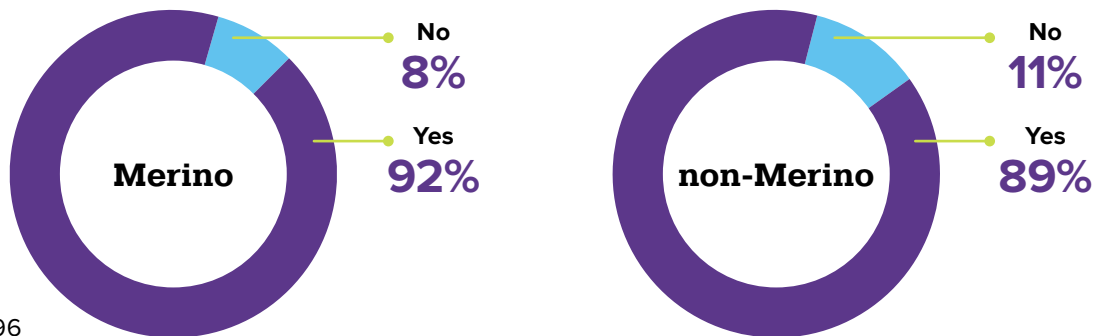
About Mulesing

Mulesing is the removal of skin around the breech area of a sheep to decrease the risk of breech flystrike and aid in crutching. There is a strong expectation that if mulesing is performed, it will be done so in conjunction with the provision of pain relief medication. In the state of Victoria this is now a legislative requirement.

Most Effective Pain Management for Mulesing

The combination of both a fast and short acting pain relief and antiseptic (Tri-Solfen®) and a longer acting meloxicam pain relief anti-inflammatory product (Buccalgesic® or Metacam®) provides the most effective pain relief and gives the animal the best chance of recovering faster, addressing both the immediate pain and any pain that might occur during the healing process, as well as reducing the possibility of infection.

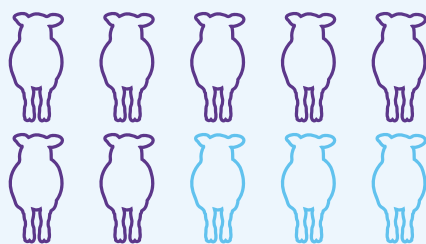
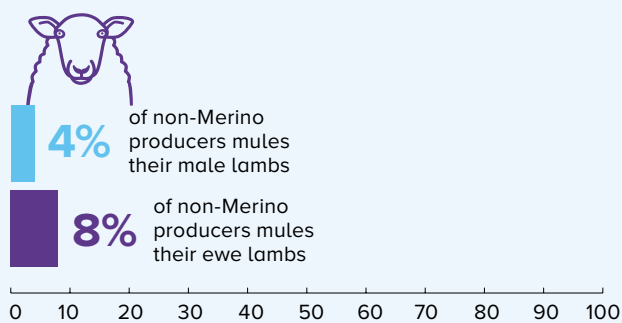
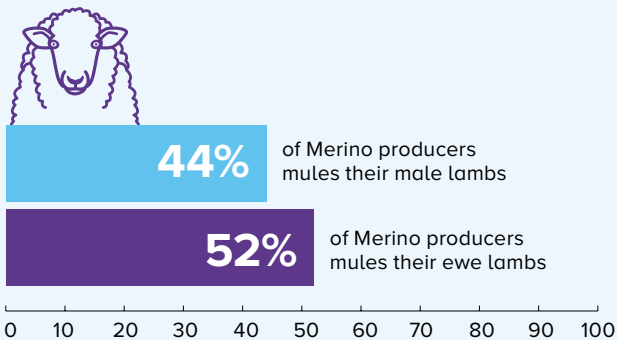
Reference: Small, A.H., Marini, D., Dyll, T., Paull, D. & Lee, C. 2018. A randomised field study evaluating the effectiveness of buccal meloxicam and topical local anaesthetic formulations administered singly or in combination at improving welfare of female Merino lambs undergoing surgical mulesing and hot knife tail docking. Research in Veterinary Science, 118, 305-311

1.1.2a % producers using pain management for mulesing

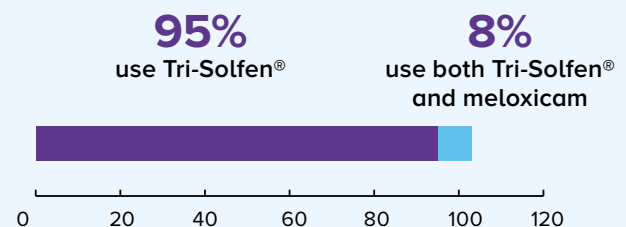
Base N = 796

The local anaesthetic Tri-Solfen® was registered for use in mulesing in 2007. The National Producer Survey found that over nine out of 10 of producers reported using Tri-Solfen® for pain management at mulesing.

From the survey, 8% of producers report administering anaesthetic in conjunction with an analgesic at mulesing.

Key Findings on Mulesing

7 in 10
producers with a flock size of 2000+ mules
their ewe lambs



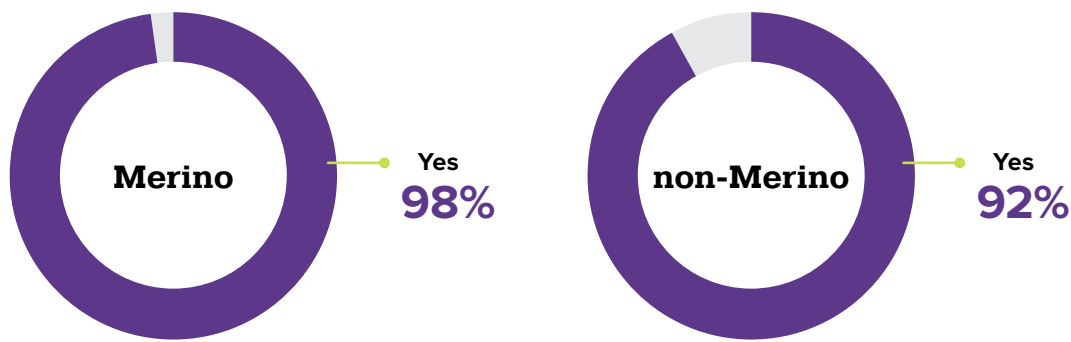
About Castration

In addition to preventing instances of unwanted breeding, castration is an important practice for sheep production. Castrated male sheep are:

- less aggressive and less likely to fight thereby reducing the risk of bruising, injury, and damage to infrastructure
- easier and safer to handle
- easier to keep in paddocks as they mature

1.1.2b % producers using pain management for castration

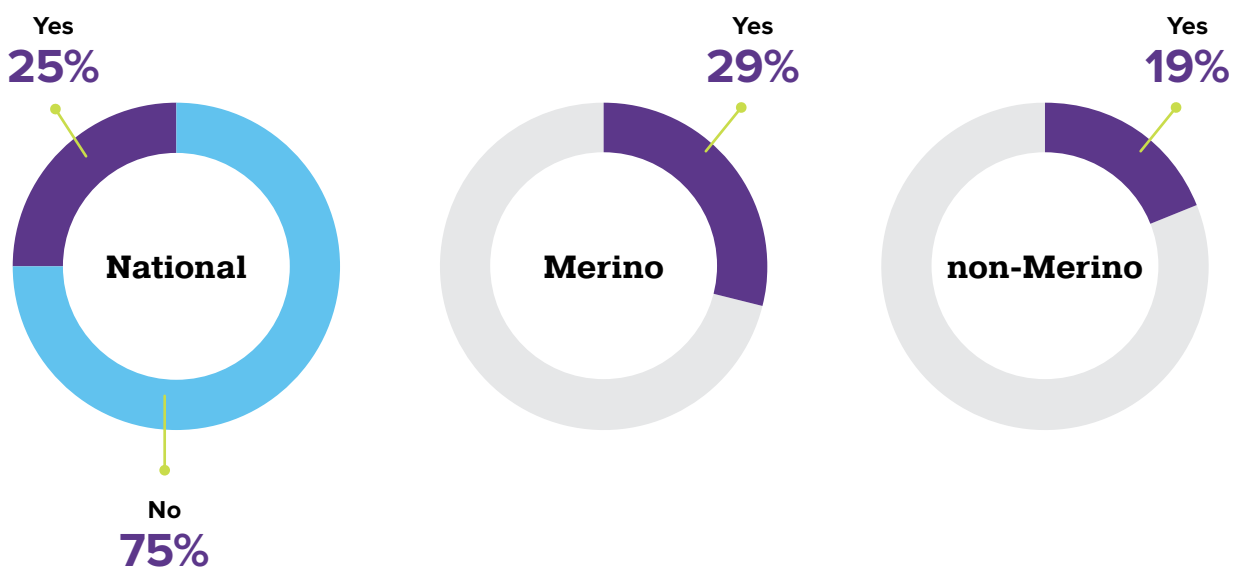
% producers who castrate their male lambs



Base N = 2,003

The majority of Australian sheep producers castrate their male lambs.

% producers who report using pain management for castration



Base N = 1,913

Whilst the survey data shows that 29% of Merino producers and 19% of non-Merino producers report using pain management at castration, suitable pain management strategies for the particular castration method is not always selected.

Castration Method and Pain Management

The castration method should be carefully selected. The recommended best practice is that it is used in conjunction with pain management strategies.

Recommended best practice pain management for castration is the use of a suitable local anaesthetic (Tri-Solfen® for knife and NumOcaïne® for rings) in conjunction with a long-acting analgesic, such as Metacam 20® or Buccalgesic®.

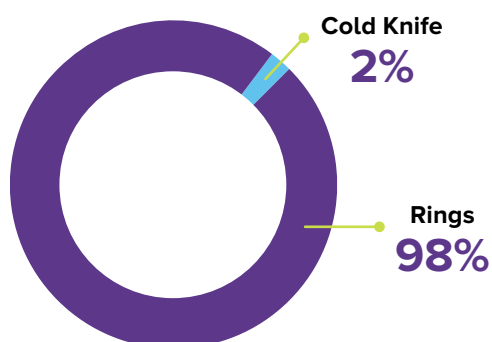
Suitable Pain Management by Castration Method

	Castration with knife	Castration with rings
TRI-SOLFEN®	✓	✗
BUCCALGESIC®	✓	✓
METACAM 20®	✓	✓
NUMOCAINE® (NUMNUTS® DELIVERY)	✗	✓

Source: MLA and AWI 2022

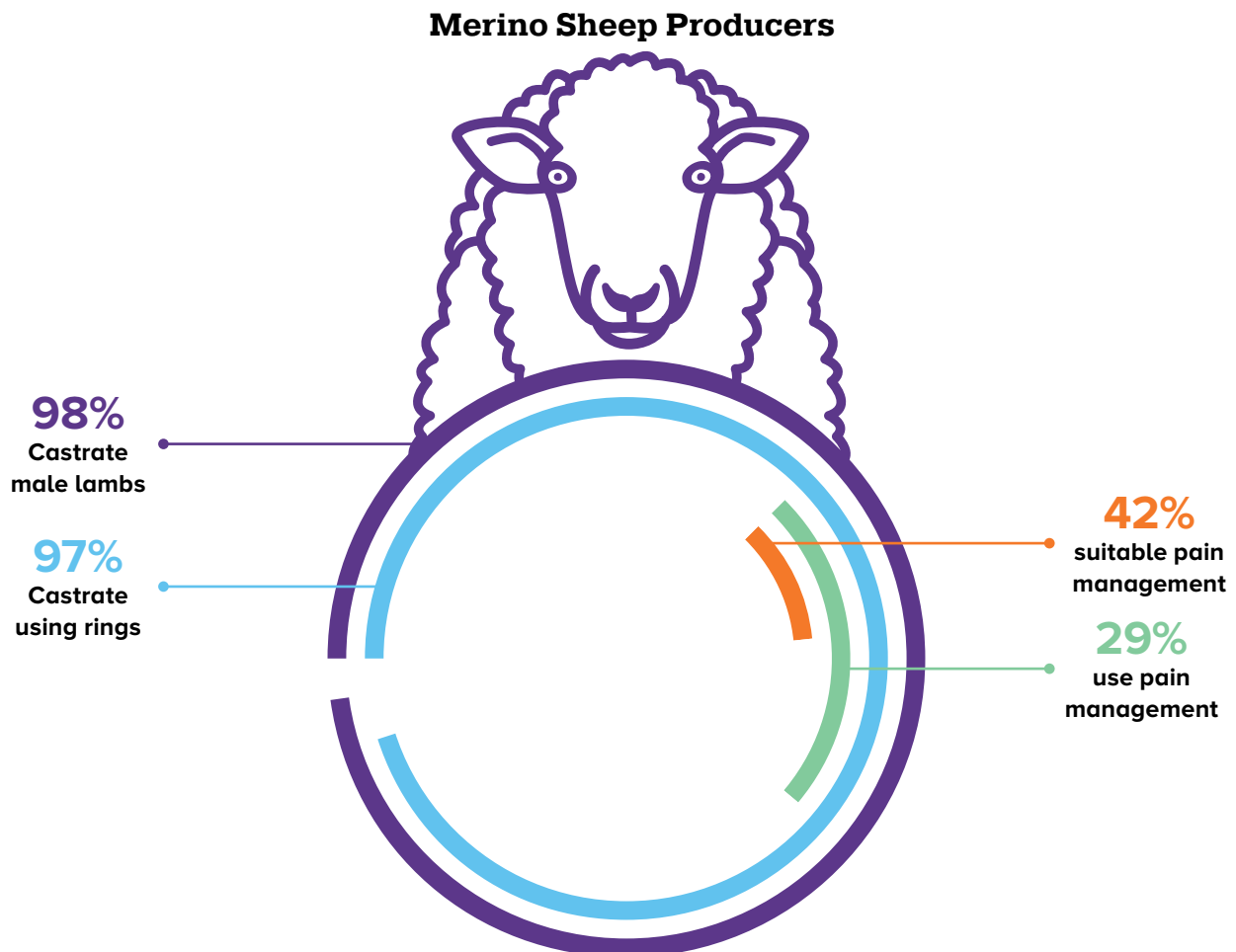
Castration Methods Used by Sheep Producers

The National Producer Survey reports that 98% of Australian sheep producers use rings to castrate their male lambs.



Base N = 1,913

Overall, fewer than half of producers using the ring method for castration reported using the suitable pain management strategy for this method. Over half of producers reported using Tri-Solfen® for ring method castration. Tri-Solfen® is not suitable for pain management when using the ring method. To illustrate for Merino producers:



Nationally, 98% of Merino producers castrate their lambs and 97% use rings to castrate, while 29% reported using pain management in conjunction with using rings. Of these, 42% used a pain management strategy suitable for ring castration.

Key Findings on Castration

95%
of producers
castrate their
male lambs

25%
report using pain
management

98%
use the ring
method for
castration

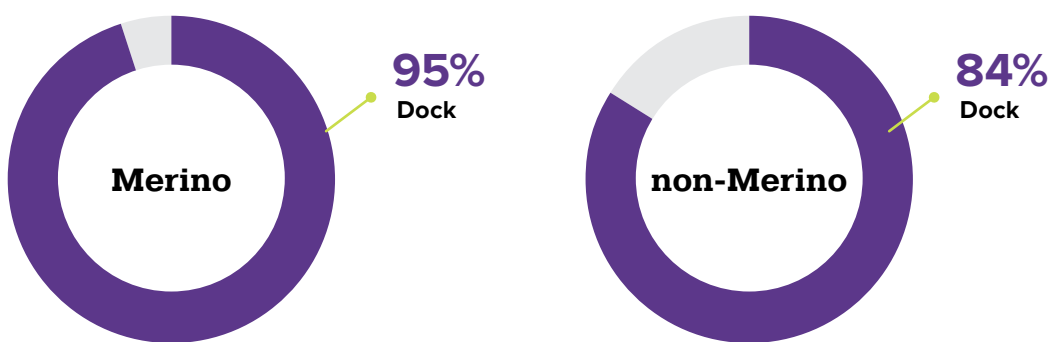
1 in 2
producers use
suitable pain
management
for the ring
castration method

About Tail Docking

In the Australian operating environment, tail docking offers animal health and welfare advantages. Tail docking reduces urine and faecal soiling thus arresting the formation of dags. This in turn reduces susceptibility to flystrike. The majority of Australian sheep producers tail dock their sheep.

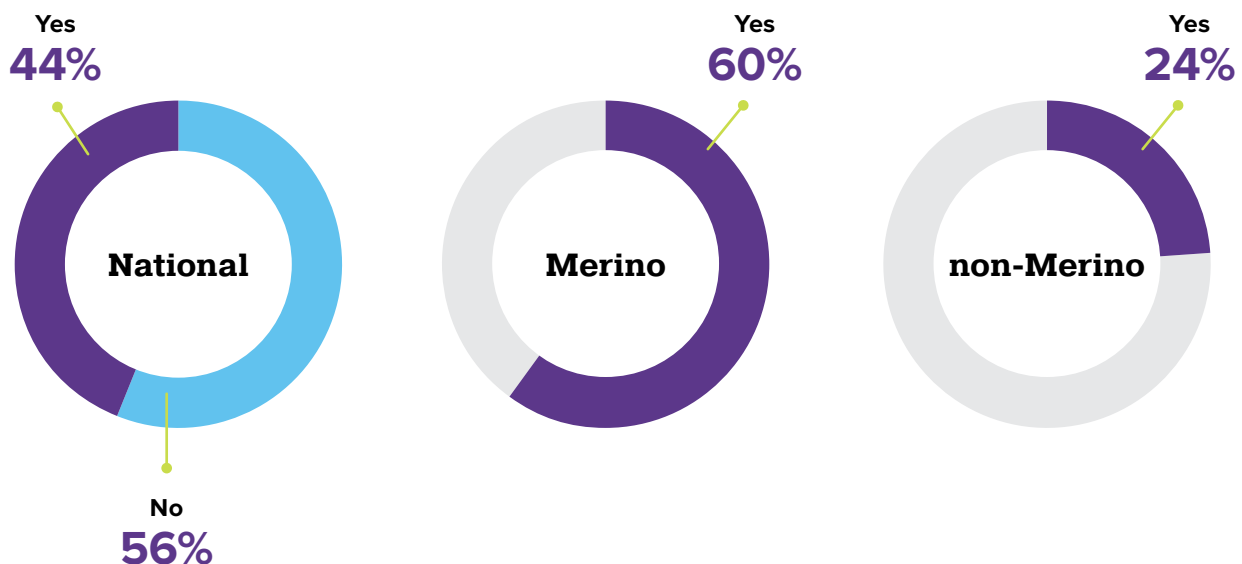
1.1.2c % producers using pain management for tail docking

% producers who tail dock



Base N = 2,003

% producers who report using pain management for tail docking



Base N = 1,830

Whilst the survey data shows that 60% of Merino producers and 24% of non-Merino producers report using pain management at tail docking, suitable pain management strategies for the particular tail docking method is not always selected.

Tail Docking Method and Pain Management

The tail docking method should be carefully selected. The recommended best practice is that it is used in conjunction with pain management strategies. The most effective pain management for docking is the simultaneous use of a local anaesthetic and a longer acting analgesic. However, specific pain management product selection depends on the tail docking method used.

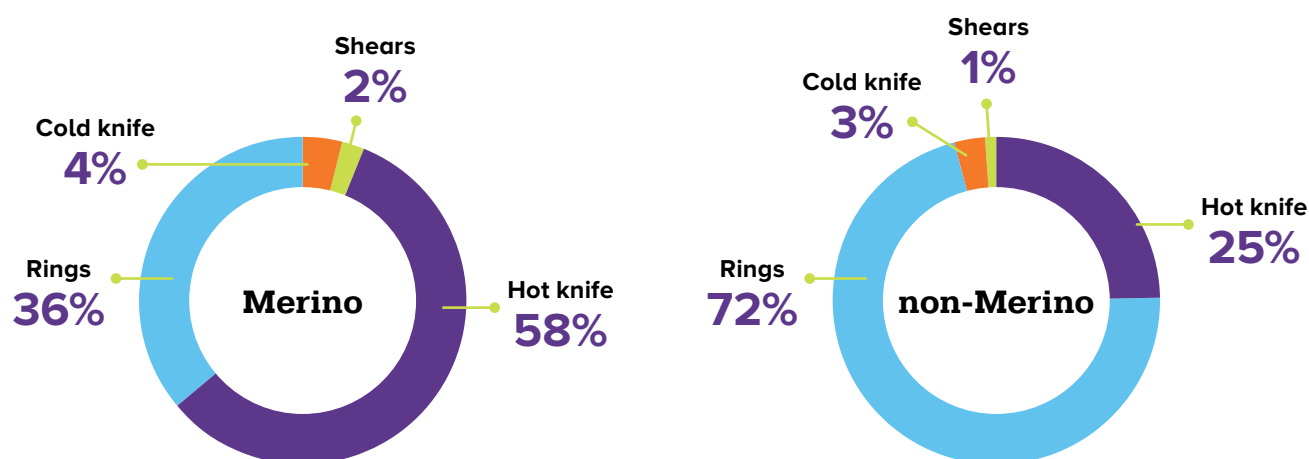
Suitable Pain Management by Tail Docking Method

	Tail docking with knife / hot knife	Tail docking with rings
TRI-SOLFEN®	✓	✗
BUCCALGESIC®	✓	✓
METACAM 20®	✓	✓
NUMOCAINE® (NUMNUTS® DELIVERY)	✗	✓

Source: MLA and AWI 2022

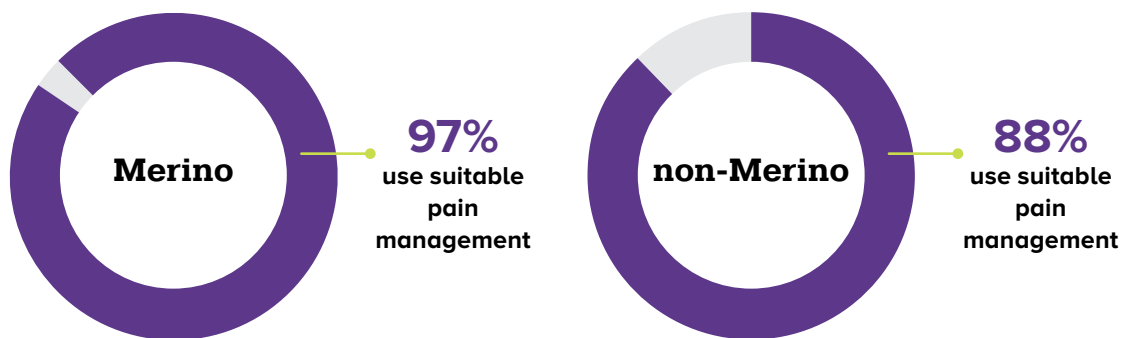
Tail Docking Methods Used by Merino and non-Merino Producers

Hot knife and rings are the most frequently used methods for tail docking.



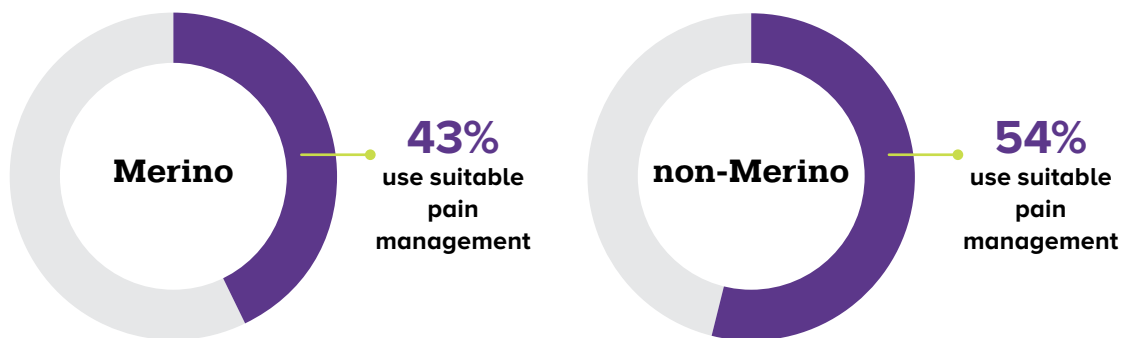
Base N = 1,830

Use of Suitable Pain Management for the Hot Knife Method



The majority of producers using the hot knife method report administering Tri-Solfen®.

Use of Suitable Pain Management for the Ring Method



Overall, fewer than half of producers using the ring method reported using the suitable pain management strategy for this method. Over half of producers reported using Tri-Solfen® for ring method tail docking. Tri-Solfen® is not suitable for pain management when using the ring method. To illustrate for non-Merino producers:

non-Merino Sheep Producers



Nationally, 84% of non-Merino producers tail dock and 72% use rings to tail dock while 24% reported using pain management in conjunction with using rings. Of these, 54% used a pain management strategy suitable for ring tail docking.

Overall, just under one in ten sheep producers reported using industry best practice pain management at tail docking for any method - an anaesthetic in conjunction with an analgesic.

About Numnuts®

MLA and AWI invest in the research and development of pain management strategies for sheep, including \$5.7m in the development of Numnuts®. Numnuts® is an easy-to-use ring applicator, combined with an injector that dispenses NumOcaine®, a fast-acting local anaesthetic. This provides the most effective pain management for tail docking of sheep when using the ring method.



Key Findings on Tail Docking

9 in 10

producers
tail dock
their lambs

**Hot knife
and rings**

are the most
frequently used
techniques

44%

of producers
report use pain
management
for tail docking

9 in 10

producers use
suitable pain
management
for hot knife
tail docking

1 in 2

producers use
suitable pain
management
for rings

Case Study

At Wickepin, two-and-a-half hours south-east of Perth, Audrey Bird runs a 1700-head self-replacing Merino flock and has long been concerned with how to best minimise stress and trauma for her animals.

Ms Bird has been using Numnuts® at marking for the last two years and is impressed with the results. She plans to continue using it as a standard part of the process during lamb marking.

“I was amazed at how good it was”, said Audrey. Along with Numnuts®, Audrey administers the oral analgesic gel Buccalgesic®.

“We apply Buccalgesic® straight after marking and it gives two to three days of pain relief which is just fantastic. It allows lamb to find mum after marking. Mothering up quickly is really important to reduce the whole stress loading of the lamb at such a young age,” explains Ms Bird.

“While we are exploring and looking at non mulesing techniques, we use Tri-Solfen® for the mulesing operation. So, we use all three types of pain relief,” she said.

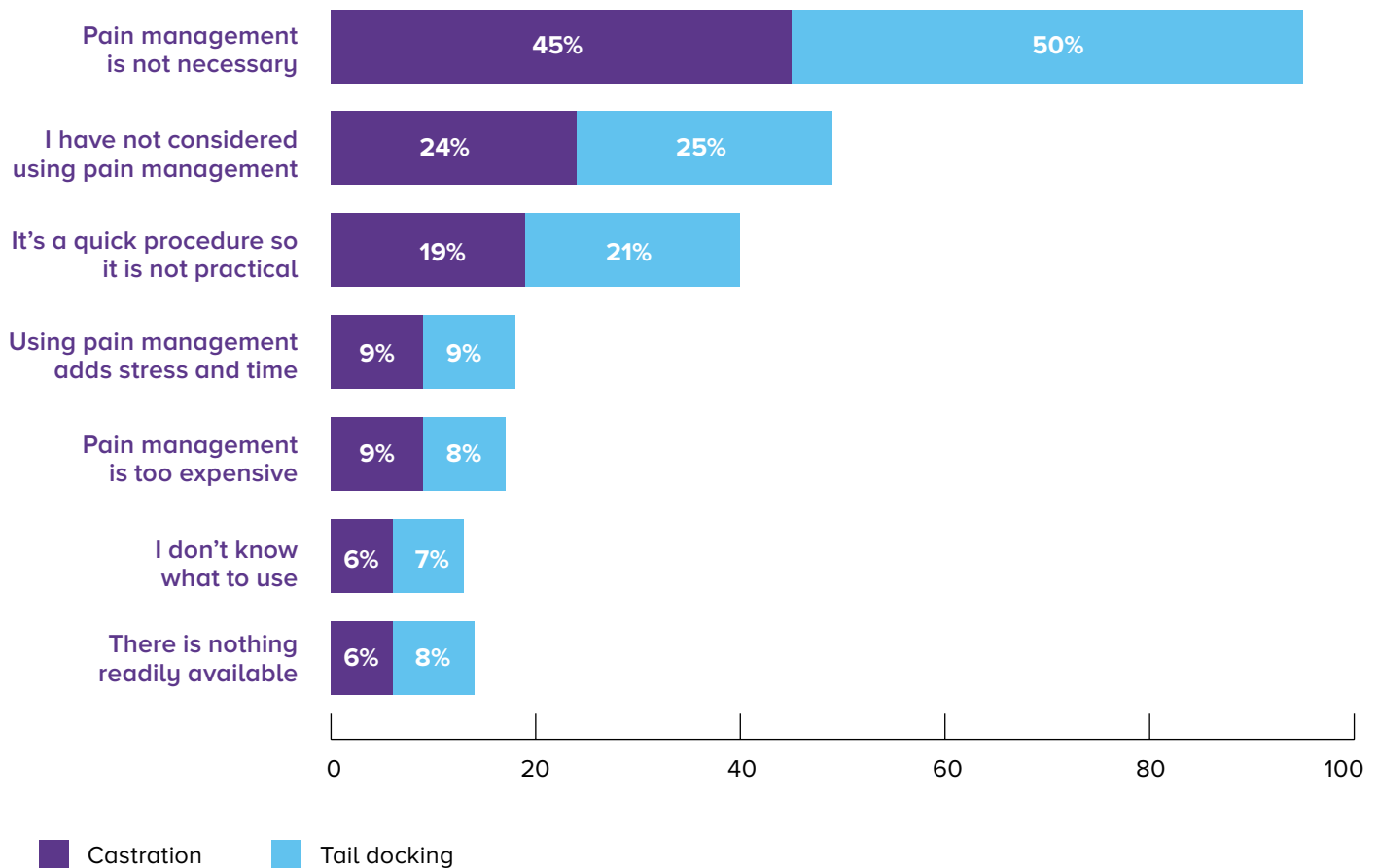


Audrey Bird

Why Don't Producers Use Pain Management?

75% of producers do not use pain management for castration and 56% do not use pain management for tail docking.

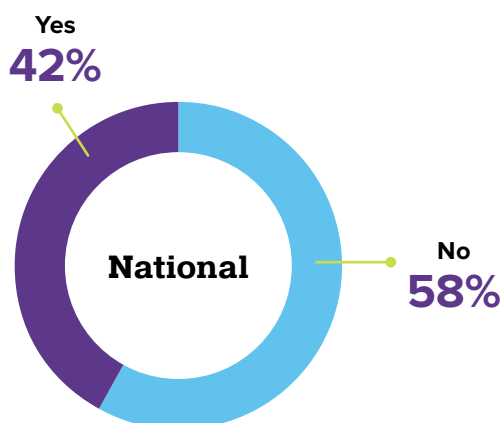
The reasons given for not using pain management for these procedures were similar.



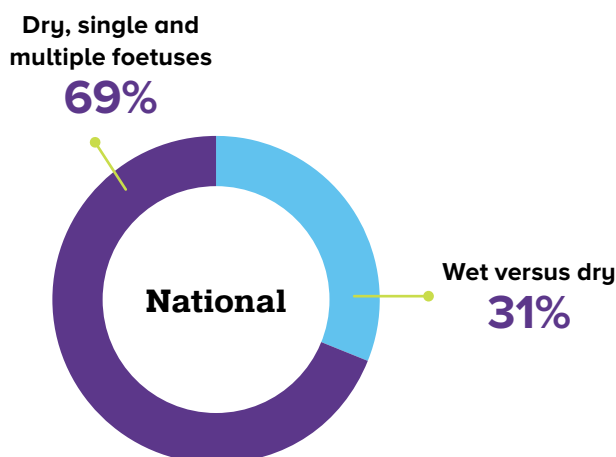
The National Producer Survey results show that an opportunity exists to better support producers in the benefits and practice of suitable pain management for their flock. The upskilling of pain management product selling agents in addition to targeted extension programs would likely prove to be impactful.

Animal Care and Handling**Priority** Implement best practice sheep management**Indicator 1.2.1: Lamb Survival****About Pregnancy Scanning**

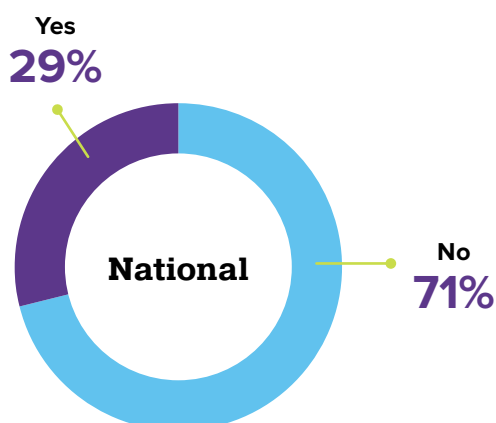
Pregnancy scanning of ewes enables producers to make informed decisions about their flock in order to improve productivity and profitability. Dry ewes can be sold, remated or stocked at higher rates, flocks can be organised according to lambing dates, and feed levels can be optimised, particularly for twin- and triplet-bearing ewes.

1.2.1a % producers pregnancy scanning ewes for litter size**Pregnancy scanning is undertaken by fewer than half of producers***No significant difference between Merino and non-Merino*

Base N = 2,003

Over 2 in 3 scanned for dry, single and multiple fetuses*No significant difference between Merino and non-Merino*

Base N = 1,021

Around 1 in 3 producers manage their twin lambs separately*No significant difference between Merino and non-Merino*

Base N = 2,003

42% of sheep producers reported scanning their ewes for pregnancy.

Of those who scanned, **69%** scanned for dry, single, or multiple fetuses. The remaining **31%** simply scanned for absence or presence of a foetus.

In the event of twin lambs, **29%** of producers reported managing their twin lambs separately.

Indicator 1.2.4: Wild Predator Management

About Predation

Predation by foxes, pigs, birds, and dogs has been found to cause up to 40% of lamb losses.

Predation has severe impacts on sheep welfare: separating the flock and lambs from mothers; they may cause traumatic wounds that can lead to death; or, they may induce stress-related issues, such as abortion.

AWI estimates that wild dog attacks alone conservatively cost the Australian economy upwards of \$89m a year in lost production. The impacts of wild dogs are felt across Queensland, the pastoral and now cereal zones of Western Australia, the New South Wales and South Australian pastoral zone, and along the Great Dividing Range in New South Wales and Victoria.

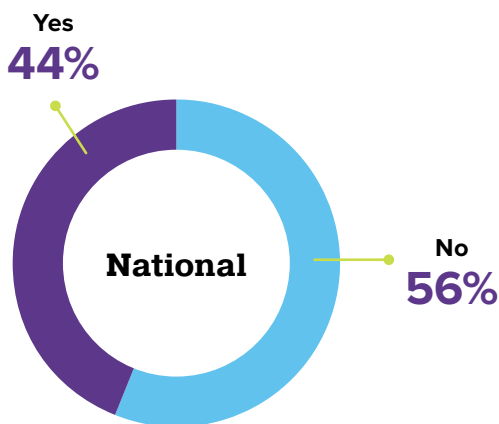
Feral pigs also pose a significant burden and cost to Australian farmers of more than \$100m annually. Additionally, pigs are regularly responsible for 32% of lamb losses in the arid and semi-arid rangelands.

It is essential that humane control programs for predatory and invasive animals be adopted and, where possible, applied regionally.

Long-term population suppression of wild predators is reliant upon continual monitoring and integration of control efforts. No single control measure alone is likely to achieve eradication.

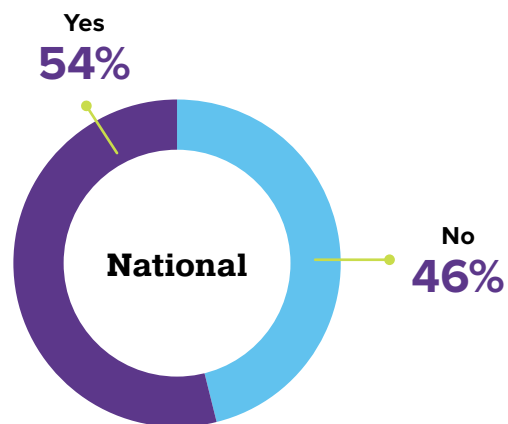
1.2.4a % producers who use a wild predator management strategy

Predator Management Strategy



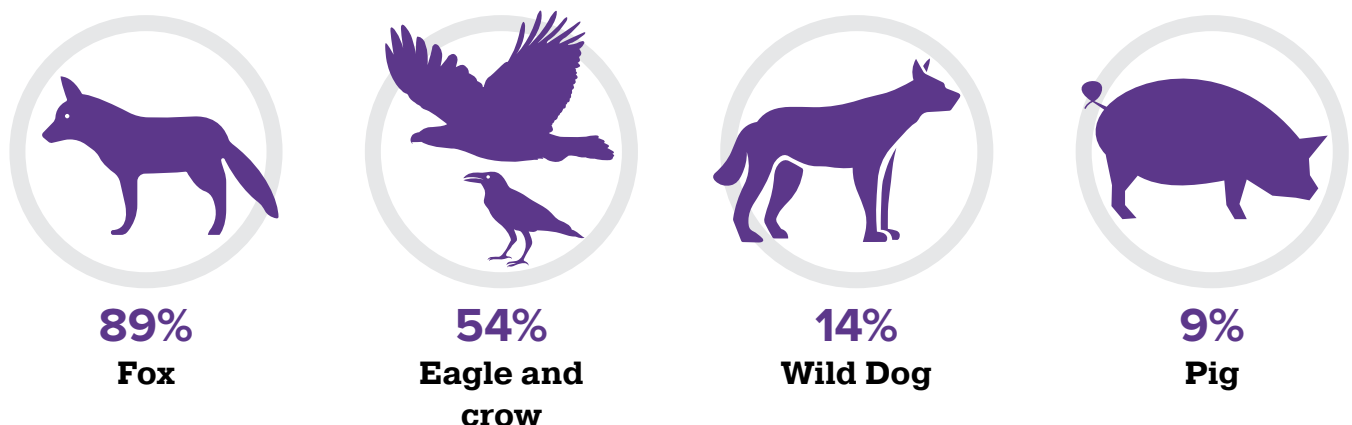
Base N = 1,578

Collaborative Predator Management Strategy



Base N = 708

Top 2 Predators Nationally



Base N = 1,578

The National Producer Survey found that almost four out of five respondents experienced problems with predators.

Almost half of producers nationally had a predator management strategy for their properties. Just over half of producers reported that their strategies were specific to their properties, whilst the remainder reported that their strategy operated within a collaborative group such as neighbours, district, or region.

To support sheep producers, AWI and MLA continue to invest heavily in vertebrate pest controls by working closely with the Centre for Invasive Species Solutions on initiatives such as baiting programs and community-based wild dog management plans. Further, AWI and MLA invest in the research and development of new and emerging technologies which will enhance producers' abilities to detect, deter and/or destroy vertebrate pest challenges.

Improving producer knowledge and increasing the adoption of proven control measures for pest species can prevent ongoing problems with animal welfare and productivity losses.

Animal Care and Handling

Priority

Ensure Humane Processing and On-Farm Euthanasia

About Humane On-Farm Euthanasia

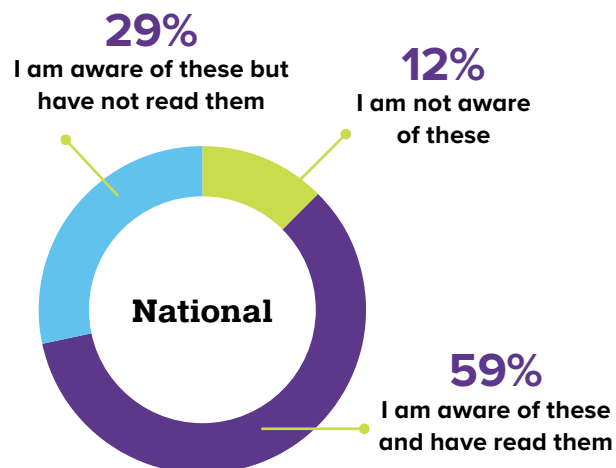
The industry has established national livestock welfare standards that reflect contemporary scientific knowledge, competent animal husbandry and mainstream community expectations, and they are maintained and enforced in a consistent, cost-effective manner.

The Australian Animal Welfare Standards and Guidelines for Sheep (AAWSGS) provide welfare outcomes that not only meet the expectations of our domestic stakeholders, but those of our international partners. The AAWSGS are underpinned by evidence-based welfare practice. It covers all aspects of sheep management from breeding to humane killing and contains objectives, standards, and guidelines outlining requirements that must be met under animal welfare law and recommended practices to achieve desirable animal welfare outcomes.

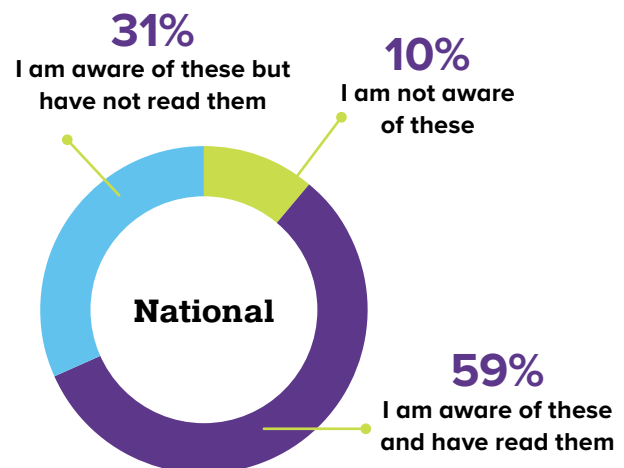
The Livestock Production Assurance (LPA) program is the Australian industry on-farm assurance program, providing evidence of livestock history and on-farm practices when transferring animals through the value chain.

To meet the requirements of LPA accreditation and to ensure the handling of livestock is consistent with the requirements of the AAWSG, sheep producers are required to have a current copy of the AAWSG for sheep accessible as a reference.

The importance of the AAWSGS is acknowledged by the SSF and reinforced by the inclusion of an indicator based on awareness of the standards and guidelines on humane on-farm euthanasia.

Indicator 1.3.1a % of producers aware of the humane killing requirements in the Australian Animal Welfare Standards and Guidelines for Sheep**Awareness of the Australian Animal Welfare Standards and Guidelines for Sheep**

Base N = 2,003

Awareness of the humane killing requirements from the Australian Animal Welfare Standards and Guidelines for Sheep

Base N = 1,736

The National Producer Survey showed the vast majority of producers reported having heard of the Australian Animal Welfare Standards and Guidelines for Sheep, with most having read them.

Of those who were aware of the AAWSGS, **59%** were aware of and have read the specific standards for the humane killing of sheep.

Focus Area 2: Animal Health

Priority

Prevent and manage disease

■ Indicator 2.1.2: On-Farm Activity to Prevent and Treat Disease

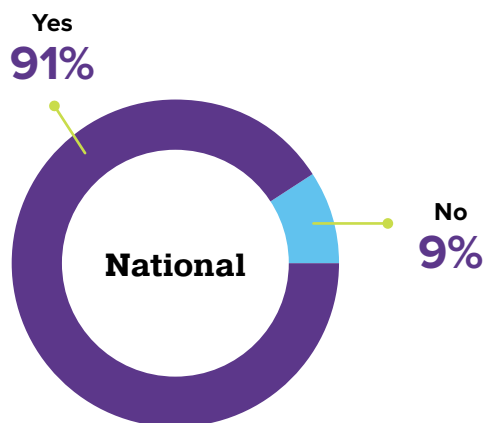
About Vaccination

Vaccination is an important and highly effective means to protect sheep from disease. When used correctly as part of a property health plan, vaccines can help prevent common endemic diseases. A sound vaccination program improves animal health and welfare and enhances enterprise productivity. The prevalence of vaccine use is a strong indicator of Australia's commitment to disease prevention.

2.1.2a % of producers who vaccinate their flock

9 out of 10 producers vaccinate at least some sheep in their flock

No significant difference between Merino and non-Merino



Base N = 2,003

Nationally, **91%** of producers vaccinate at least some of their flock. Further questioning revealed that on average, **97%** of producers' entire flocks receive at least one vaccination of any type of vaccine.



Enhancing the Environment and Climate

As an industry, we recognise our role as environmental stewards, seek to minimise impact on the natural environment and use natural resources wisely. We also seek to meet the challenge of a changing climate and mitigate our own GHG emissions.

Focus Area 3: Environment

Priority

Responsible Environmental Practices

■ Indicator 3.2.1: Responsible Chemical Stewardship

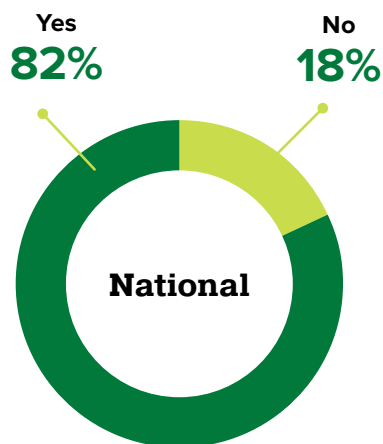
About Management of Chemicals

Understanding how to safely transport, store, prepare and apply chemicals is an important part of responsible environmental practice. The handling of chemicals was included in the Sheep Sustainability Framework to reflect the industry's objective to minimise the impact of Australia's high-quality food and fibre production on the landscape and greater environment.

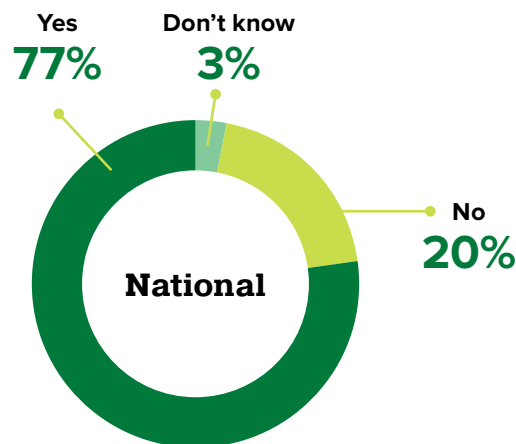
Legislation in this area is the responsibility of state and territory governments and regulations vary across the jurisdictions. However, ChemCert accreditation is required for the commercial use of certain pesticides or herbicides in all Australian farming enterprises. Accreditation requires the completion of a training course designed to raise awareness of the potential hazards and risks associated with pesticide use and to provide practical information on the safe handling and application of chemicals.

In addition, safe and responsible handling of chemicals is a requirement of the Livestock Production Assurance (LPA) program, the on-farm assurance program that underpins market access for Australian red meat and wool. LPA National Vendor Declarations (NVDs) provide evidence of livestock history and on-farm practices when transferring livestock through the value chain.

Every LPA-accredited producer must undertake steps to ensure that animal treatments are administered in a safe and responsible manner that minimises the risk of chemical residues and physical hazards. To achieve accreditation, livestock producers need to demonstrate their competency in chemical application and handling. Completing ChemCERT training is the most effective way to achieve this.

Indicator 3.2.1a % producers who have done ChemCert course or similar**Attended Chemical Safety Training Courses**

Base N = 2,003

ChemCert Accreditation

Base N = 1,704

Nationally, more than four in five producers surveyed had completed chemical safety training. Of those who had completed a training course, **77%** said they had ChemCert accreditation or a current ChemCert card.

Focus Area 4: Climate Change**Priority**

Reduce net GHG emissions

About Greenhouse Gas Emissions

Greenhouse gases (GHG) pose severe environmental and health issues. They cause climate change by trapping heat, raising average temperatures, and disrupting ecosystems. The climate change caused by greenhouse gas emissions also contributes to extreme weather, wildfires, droughts, and food supply disruptions. Greenhouse gases also contribute to air pollution and smog, which can cause respiratory and pulmonary diseases.

A number of SSF indicators already report and track industry efforts to reduce GHGs, including the industry's net emissions and emissions intensity when raising sheep and producing greasy wool.

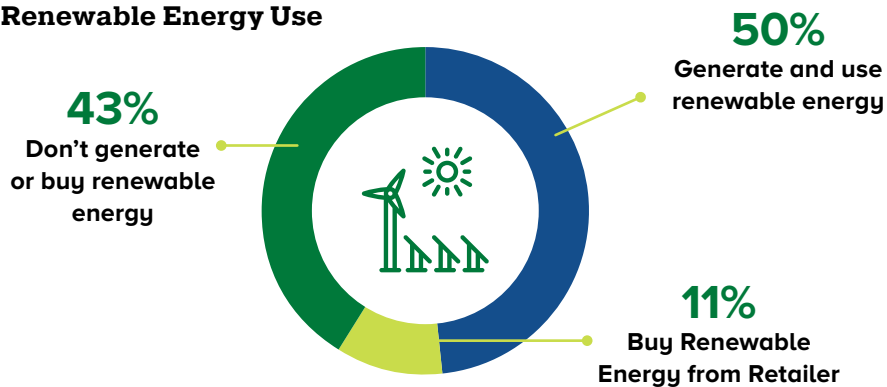
Further, ongoing scientific research has made it increasingly clear that it is in humanity's best interest to reduce dependence on fossil fuel combustion and move towards the use of renewable energy.

Indicator 4.1.2: Renewable Energy

Indicator 4.1.2a Based on the information from the survey outlined below, the **SSF** will identify and report a metric for renewable energy use in the **FY2023 Annual Report**.

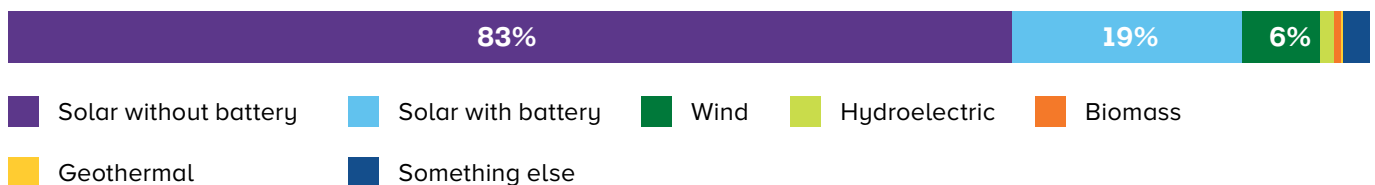


Renewable Energy Use



Base N = 2,003

Renewable Energy Generated Nationally



The survey revealed that half of Australian sheep producers already generate and use renewable energy. The use of solar power to generate electricity is the most prevalent method. One in five use batteries to capture and store unused energy.

Eleven percent of sheep producers purchase renewable energy from their energy retailer.

About Carbon Accounting

How can Australian sheep producers and wool growers make a start on reducing their GHG emissions?

An important first step for producers is to create a carbon account to determine what their net GHG emissions position is, so they can identify strategies to reduce these emissions and improve carbon storage on-farm.

What is Carbon Accounting?

Carbon accounting is the process producers can use to determine their annual net GHG emissions position.

There are two main elements of a carbon account:

- **Annual GHG Emissions**

These come from:

- » carbon dioxide from fossil fuels used for electricity, transport, and inputs such as fertiliser and supplementary feed

- » nitrous oxide from fertiliser application and livestock manure
- » enteric methane produced when ruminants digest food

- **Carbon Stocks On-Farm**

These stocks of carbon have been removed from the atmosphere and stored in vegetation and soils.

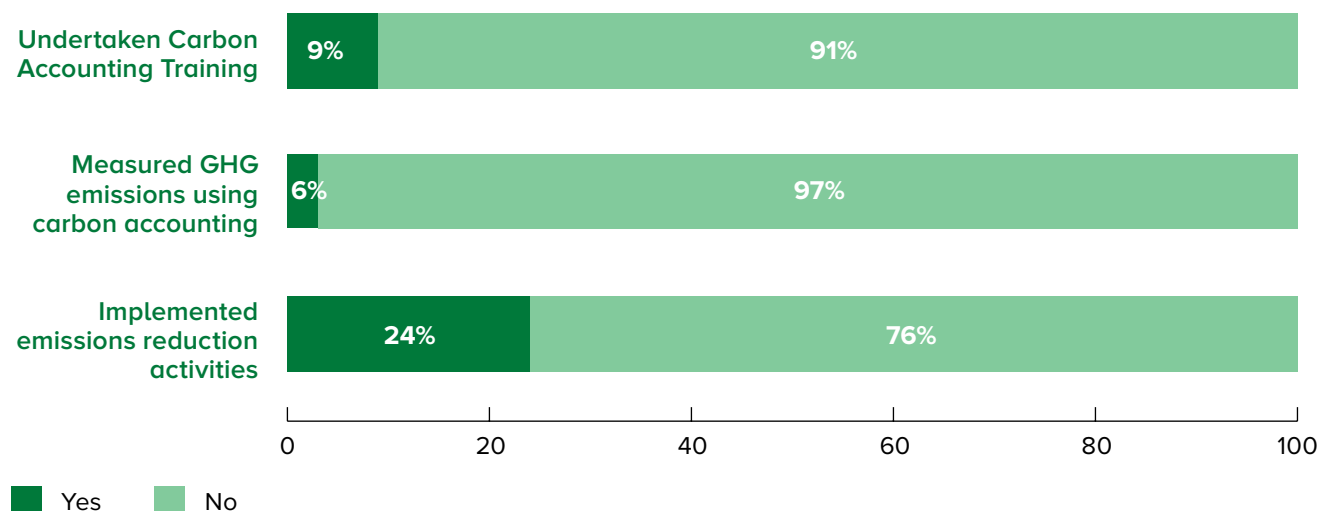
Why is Carbon Accounting Important?

Calculating baseline carbon emissions and stored carbon is an essential first step for producers who are considering opportunities arising from low or zero carbon branded products.

A carbon account can be used in on-farm decision making and sets a benchmark to show progress over time.

Just as financial accounting aids financial decision making and reporting, carbon accounting aids decision making and reporting around how carbon is – or is not – used on-farm.

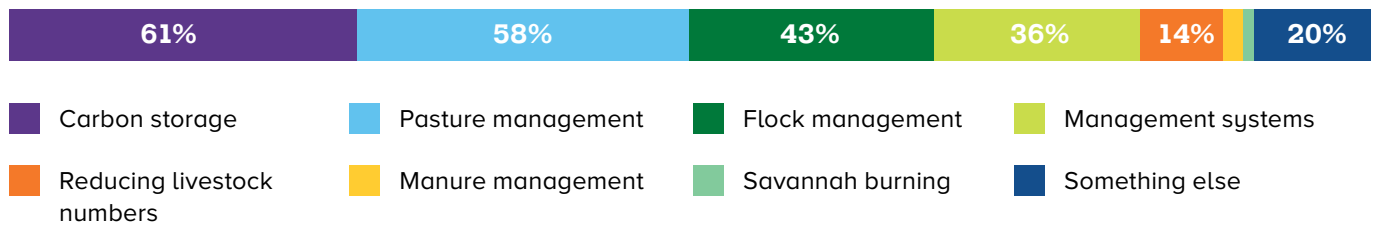
Carbon Accounting and Emissions Reductions Activities



Base N = 2,003

Carbon accounting is in its early stages amongst sheep producers, with fewer than **10%** completing formal training. However, **24%** have implemented measures relating to carbon emissions.

Emissions Reductions Implemented Nationally



Of those who have implemented emissions reductions activities, carbon storage, pasture management and flock management are the most commonly used.

Case Study

Carbon Neutrality Paying Dividends

Victorian livestock producers Mark Wootton and Eve Kantor have become one of the first livestock enterprises in the country to achieve carbon neutrality. They operate “Jigsaw Farms”, which encompasses 3,500ha across six properties north of Hamilton in the state’s west, where they run approximately 20,000 Merino ewes and 520 cattle.

Since 1996, Mark and Eve have overseen mass shelter belt plantings, which not only provided shelter for livestock from extreme weather, but also improved their lambing and calving percentages and increased the amount of vegetation available to sequester carbon. Around half of their planting is agroforestry or high value saw logs and half is permanent revegetation.

The resulting high soil carbon contributes to high productivity, and the improved shelter – along with better feed management and continual condition scoring of stock – has driven continually improving lambing and calving percentages.



Mark Wootton

The business has doubled food and fibre production annually since 1996, delivering a 10%+ profit or return on investment (ROI) in 23 of the past 26 years.

Mark calls it “sustainable intensification”.

“There’s no silver bullet and reducing greenhouse gas emissions needs to be multi-layered, but it’s possible to achieve carbon neutrality without compromising productivity,” he said.



Looking After Our People, Our Customers and The Community

A safe and healthy workforce, with the right skills to take the industry into the future, underpins our success. We make an important contribution to regional communities through our presence and business operations, and to the wider community through the provision of natural fibre and nutritious food.

Focus Area: People

Priority

Encourage Workforce Diversity

■ Indicator 6.1.3: Availability of Workforce

About the Workforce

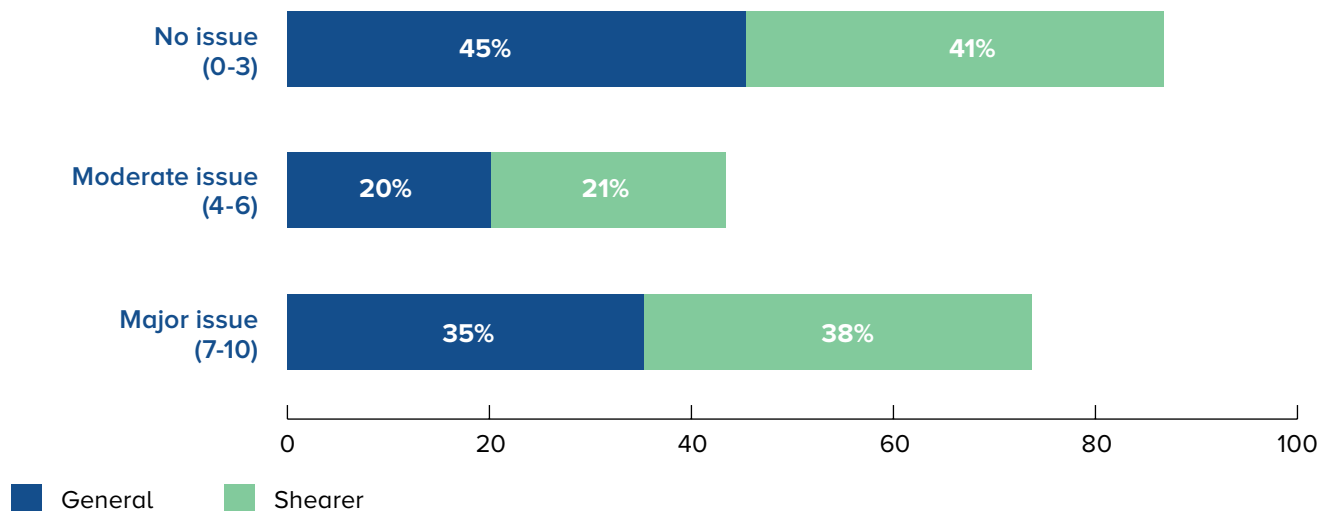
Access to people with the appropriate skills, knowledge, training, and experience to perform the activities needed to run sheep businesses is pivotal to the functioning and resilience of the industry, as well as the rural and regional communities it contributes to.

Effort also needs to be directed at building capacity, not only to support and grow the workforce but to achieve continual improvement in the industry.

Indicator 6.1.3a Level of availability of workforce amongst producers

6.1.3a Based on the information from the survey outlined below, the SSF will identify and report the most appropriate metric for use in the FY2023 Annual Report.



How Much of an Issue is the Availability of General Labour/Shearer Labour for your Sheep Operation?

Base N = 2,003

Australia is currently experiencing a period of historically low unemployment along with shortages in skills sets critical to the sheep industry. When asked about workforce availability, more than a third of producers surveyed said they had major issues with the availability of both general labour and shearers. Fewer than half reported no issues with general labour availability (45%) or shearers (41%) whilst 20% experienced only moderate issues.

AWI has committed additional investment to shearer training during the next three-year period with the hope of assisting in improving the shearer shortage issues.



■ Indicator 6.1.4: Extent of Succession Planning in the Industry

About Succession Planning

Succession planning is often a complex issue for farm businesses. Family situations are unique and meeting the expectations of all members can be difficult. Furthermore, the decisions to be made about assets and liabilities can be triggered by unexpected and traumatic events outside the owner's control, such as divorce or death.

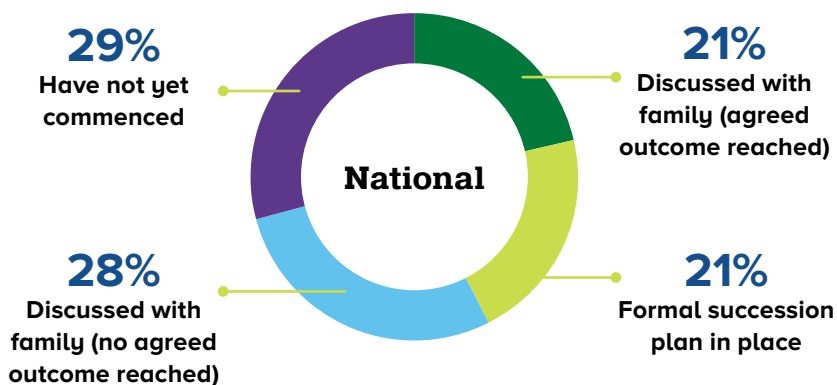
Planning is imperative to ensure the process is methodical and considered, helping to keep assets and family relationships intact. The engagement of experts is recommended given the complexity of issues such as stamp duty, capital gains tax and family trusts.

Indicator 6.1.4a % of producers with succession plans or exit strategies

6.1.4a Based on the information from the survey outlined below, the SSF will identify and report the most appropriate metric for use in the FY2023 Annual Report.



Stage of Succession Planning for Sheep Operation



Base N = 2,003

The National Producer Survey found levels of succession planning among respondents was spread across the spectrum of preparedness. Nationally, **29%** are yet to commence any discussion or planning whilst **49%** have begun discussions with the family. Only **21%** report having a formal succession plan in place.

Next Steps

- A key learning for the SSF Steering Group is that the identification of the most appropriate metric for an indicator is sometimes not possible until the data collection method is designed, or the gathered data is analysed. In the case of the SSF, the best approximation was made for 1.1.1, 1.1.2, 4.1.2, 6.1.3 and 6.1.4 at the time of framework design in 2021. The findings from the National Producer Survey means that the SSF Steering Group and Board will decide on the revised wording and use of the relevant metrics for the previously 'approximated' metrics.
- The key figures from the National Producer Survey will be reported as benchmark data in the Sheep Sustainability Framework FY2023 Annual Report due for release in May 2023.
- The results of the National Producer Survey will be jointly evaluated by SPA, WPA, AWI and MLA. The most material outcomes will be applied to relevant industry Research, Development and Adoption (RDA) programming, policy development and communication activities.
- The complete National Producer Survey results will be released by MLA and AWI.







**SHEEP
SUSTAINABILITY
FRAMEWORK**

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