Final report

National Sheep Producer Survey of Animal Husbandry Practices

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Abstract

The Sheep Sustainability Framework (SSF) was launched in March 2021. The framework is constructed around the key themes of caring for sheep, enhancing the environment and climate, looking after people, customers and the community and ensuring a financially resilient industry. Quantitative studies were conducted by Meat & Livestock Australia (MLA) and Australian Wool Innovation (AWI) in the years preceding the SSF launch and a more comprehensive survey to track previous metrics and establish benchmarks for new SSF metrics was conducted in 2021. This survey was repeated in 2023 to track changes over time. An online and telephone survey of 1,268 sheep producers involving 809 Merino producers and 459 non-Merino producers was therefore conducted in February to May 2024.

The research tracks many of the animal husbandry, management and environmental practices that form part of sheep producers' sustainable operation. Adoption of some practices however vary for different demographic groups such as state, sheep production system (Merino versus Non-Merino) and flock size. Recommendations have been made on further research into pain management, and how to better collect data and measure some variables. The industry will benefit from the research as it will help guide MLA and AWI in identifying key sustainability priorities for future industry levy investment.

Executive summary

Background

The Australian sheep industry considers sustainability in the context of four key themes - caring for sheep, enhancing the environment and climate, looking after people, customers and the community and ensuring a financially resilient industry. These themes form the SSF that guides sheep production to ensure that the industry operates sustainably. Regular tracking of sheep producers' attitudes and behaviours via survey-based methodologies helps ensure that progress against these themes can be measured and that industry initiatives to drive change can be developed and adapted.

Objectives

The primary objective was to track and compare key metrics and practices that underline the SSF, to help guide MLA's and AWI's investment and project planning and provide transparency of production to consumer markets both domestically and internationally.

Methodology

The methodology for this project involved a survey of 1,268 sheep producers including 809 Merino producers and 459 non-Merino producers in February to May 2024. A mixed methodology was employed involving a 26-minute survey, with 835 producers responding online and 433 producers responding via Computer Assisted Telephone Interviews (CATI). Producers were incentivised to participate in the survey through a prize draw. Producer contact details were sourced from MLA's member database. The sample was stratified, and results weighted by state and flock size categories based on the latest data from the Australian Bureau of Statistics (ABS) for representativeness.

Results

Over half of producers (51%) had flocks comprised of pure-bred poll Merinos with 21% having pure-bred horned Merinos, 5% Dohne Merino, 2% South African Meat Merinos (SAMM) and 56% with breeds other than Merino and Dohne Merino (from multiple breeds selected).

Nationally, around one third of all producers (31%) ran 100 to 499 sheep with 35% running flocks of 3,000 head or more.

The majority of producers (86%) use polled sires (Merino: 77% and non-Merino 97%).

Over one quarter of producers nationally (28%) join ewes to rams for eight weeks or longer. Compared to non-Merino ewes (38%), Merino ewes (19%) were significantly less likely to be joined for 8 weeks or greater. Merinos (23%) were more likely to be joined for 4.1 – 5 weeks than non-Merino (11%) and for 6.1 – 7 weeks (9% and 4% respectively).

Nationally, 45% of producer's pregnancy scan their ewes. Of these, over two thirds (70%) sought to find out if the ewe was dry or had single or multiple foetuses. Less than one third (30%) wanted to know if the ewe was simply wet or dry. Producers scanned on average 69 days after rams in. Around 1 in 3 producers manage their twin lambs separately (31%).

At the national level, 90% of producers tail dock their ewes (Merino: 97% and non-Merino 81%). 90% of producers tail dock their male lambs (Merino: 97% and non-Merino 82%).

Rubber rings were the most common tail docking technique (49%) for ewe lambs followed by a hot knife (49%) (Merino: 30% rings, 66% hot knife and non-Merino 75% rings, 26% hot knife). Rubber rings were also the most common technique (51%) used for tail docking of male lambs followed by a hot knife (48%) (Merino: 31% rings, 66% hot knife and non-Merino 77% rings, 24% hot knife).

Nationally, almost half of producers who tail dock ewe lambs, dock them to three joints (46%). Two joints are the next most common choice at 41%. The most common reasons cited for choosing a particular tail length were to protect the genital area (61%) and to provide sun protection (53%). Non-Merinos producers were more likely to cite specific health reasons (32%) than Merino producers (23%). More than half of producers who tail dock male lambs dock them to two joints (47%). Three joints are the next most common choice at 40%. The most common reasons cited for choosing a particular tail length were to allow tail movement (38%) and to provide sun protection and ease of management (both 37%; Merino: 10% length decided by contractor, non-Merino: 4% length decided by contractor).

The most common reasons cited for using rings to dock ewe lambs was that it is easy (68%), quick (51%) and bloodless (50%). For male lambs, the most common reasons cited for using rings was that it is easy (66%), quick (50%) and bloodless (49%). There were no significant differences between Merino and non-Merino producers for both ewe and male lambs).

At the national level, the most common reasons cited for using a hot knife to tail dock ewes were that it is bloodless or seals the wound (72%), clean or neat and quick (both 47%) (Merino: 29% less infection and non-Merino 46% less infection). For male lambs, the most common reasons cited for using a hot knife were that it is bloodless or seals the wound (67%) and clean or neat (43%). There were no significant differences between Merino and non-Merino producers.

When using cold knife on ewe lambs, producers state that it is quick (65%) and effective (52%). Producers state that cold knife is used on male lambs because it is effective and efficient (both 63%). There were no significant differences between Merino and non-Merino producers.

The primary reason that producers dock lambs is to reduce the risk of flystrike or disease (66%) (Merino: 72% flystrike, 8% neat appearance, non-Merino 58% flystrike, 21% neat appearance).

Nationally, 51% of producers use pain management at tail docking of ewe lambs across all methods (Merino: 70% and non-Merino 24%). Adoption of pain management for ewe lambs however varies by tail docking method. When tail docking ewe lambs, fewer producers use pain management for rings (24%). The majority of producers used pain management for other methods: cold knife (75%) hot knife (76%) and shears (90%) (Merino: 37% rings, 86% hot knife and non-Merino 17% rings, 42% hot knife).

Likewise, 50% of producers nationally use pain management when docking male lambs (Merino 69% and non-Merino 24%). adoption of pain management for male lambs varies by tail docking method and is highest for shears (84%) and lowest for rings (24%) (Merino: 84% hot knife, 38% rings and non-Merino 38% hot knife, 18% rings).

Anaesthetic and antiseptic spray at the site is the primary type of pain management for tail docking. Nationally, it is used by 70% of producers who use pain management products at tail docking. Analgesic oral gel (non-veterinary prescribed 9% and veterinary prescribed 9%) and anaesthetic injection at the site (15%) were the second most frequent pain relief (Merino: 78% anaesthetic and

antiseptic spray, 12% analgesic injection and 10% anaesthetic injection and non-Merino: 43% anaesthetic and antiseptic spray, 27% analgesic injection and 25% anaesthetic injection).

The most common reasons cited for choosing anaesthetic injections were to reduce pain (75%). improve animal health and welfare (74%), and quick mothering-up (68%). Producers said that anaesthetic and antiseptic spray at the surgery site were easy to apply (74%) and offered effective pain reduction (72%).

Reasons for using analgesic injections included improved welfare (81%) and it reduces pain (73%).

The most common reasons cited for choosing veterinary prescribed analgesic oral gel were fast recovery and quick mothering up (both 56%). Non veterinary prescribed analgesic gel was used because it improves animal welfare (83%), lasts longer (69%) and it reduces pain (68%).

When asked why they do not use pain management at tail docking, producers said that they do not consider it necessary (45%). 33% of producers cited it being impractical or a quick procedure with 25% claiming it was too expensive (there was no significant difference between Merino and non-Merino producers).

Virtually all producers castrate their male lambs (97% nationally; Merino: 98%, non-Merino: 95%) and rubber rings were by far the most common technique (99%) used for castration of male lambs nationally. The main reason producers castrate was to prevent unwanted pregnancies (78%) and to meet market requirements (60%).

There was 34% of producers use pain management when castrating male lambs (Merino: 47% and non-Merino: 19%). Use of pain management for castrating male lambs varies by castration method and is higher for cold knife (89%) and lower for rings (33%) (Merino: 46% rings and non-Merino: 19% rings).

Anaesthetic and antiseptic spray at the site is the primary type of pain management for castration (43%) (Merino: 52% anaesthetic and antiseptic spray, 15% analgesic injection and non-Merino: 21% anaesthetic and antiseptic spray, 33% analgesic injection).

The most common reasons cited for choosing anaesthetic injections for castration were that it improves animal health and welfare (73%), reduces pain (65%) and lambs quickly mother-up afterwards (63%). Producers who chose anaesthetic and antiseptic spray said that it provided effective pain reduction (52%), ease of application (43%), and lambs quick to mother up following treatment (40%).

Producers who chose analgesic injections said they improve animal health and welfare (67%) and effective pain reduction (62%).

The most common reasons producers cited for choosing veterinary prescribed analgesic oral gel were improved animal health and welfare (75%) and pain reduction (72%). Non-veterinary analgesic oral gel was chosen because it reduces pain (64%) and improves animal health and welfare (63%).

The main barrier to the use of pain management for castration is that it is not considered necessary (44% of those not using pain management). 31% stated it was not practical or a quick procedure (there were no significant differences between Merino and non-Merino producers).

At the national level, 32% of producers mulesed their ewe lambs in 2023 (Merino: 58% and non-Merino: 4%) and 26% of producers mulesed their male lambs (Merino: 49% and non-Merino: 1%).

Producers nationally mulesed their lambs to reduce the risk of flystrike (98%) and for easier access to shearers (50%).

Most producers who mulesed use pain management (94% both male and ewe lambs). Most producers who use pain management products at mulesing use anaesthetic and antiseptic spray at the surgery site (91%).

Effectiveness (62%) and fast recovery (56%) were the primary reasons for choosing an anaesthetic and antiseptic spray at the surgery site such as Tri-Solfen® for mulesing.

Producers stated that analgesic injections gave effective pain reduction (75%) and improved animal health and welfare (65%). Veterinary prescribed analgesic oral gel was effective (68%) and offered pain reduction (61%). Non-veterinary prescribed analgesic oral gel improved animal health and welfare (75%), lambs were quick to mother up following treatment (67%) and reduces pain (62%).

The main barrier to the use of pain management for mulesing is that it is not considered necessary (35%). 31% of producers stated it was a quick procedure or not practical with 30% stating it was too expensive.

Across Australia, of producers who mulesed in 2023, almost three quarters (71%) said they were unlikely or very unlikely to cease mulesing. The top three alternatives to mulesing that would be adopted include flystrike chemicals (40%), more crutching (31%) and moving to another enterprise (31%).

At the national level, nearly two thirds (69%) of producers who did not mules in 2023 have never mulesed. On average, producers who had ceased mulesing were most likely to have done so in 2011. The main reasons for ceasing mulesing are breeding for less body wrinkle (45%), animal ethics (37%) and industry and consumer pressure (35%) (Merino: 45% industry/consumer pressure and non-Merino: 11% industry/consumer pressure).

9 out of 10 producers (92%) vaccinate at least some sheep in their flock, with combined 5 in 1 clostridial and cheesy gland vaccine the most popular (61%). Nationally, an average of 71% of producers vaccinate pre-lambing, 95% at marking and 73% at weaning.

Most producers (95%) follow label recommendations when administering antibiotics.

The average weaned and adult ewe mortality rate is 3.6%.

The majority of producers (85%) have heard of the Australian Animal Welfare Standards and Guidelines for Sheep. Of this group, most are aware of and have read the specific standards and guidelines for the Humane Killing of Sheep (71%).

Nationally, over one third of producers are involved in wool quality assurance schemes (35%). Where producers are not involved, more than half say they do not see any premiums (48%).

Across Australia, 75% of producers report problems with predators and lose 36 sheep on average annually due to predation. Foxes are the number one predator (92%) followed by birds (51%) and pigs (12%).

Shooting foxes is the most common control method used (78% nationally), wild dogs (69%) and pigs (93%). Conversely, most producers do not control birds (76% nationally).

Of producers who reported problems with predators, less than one fifth (19%) have a documented predator management strategy.

Almost half (47%) of producers generate and use renewable energy. A further 11% of producers stated that they use renewable energy bought from their energy retailer with 44% not generating or buying any renewable energy.

Of the producers who generate their own renewable energy, the majority (82%) have solar without batteries. Slightly under a quarter (22%) generated solar with a battery.

Producers interviewed had generally not taken carbon accounting training study (87%) and did not estimate their emissions (90%), however, 21% did implement carbons emissions measures.

Producers who did conduct emission reduction activities often selected more than one measure. Almost three quarters of producers (71%) used pasture management. Carbon storage was also a popular technique (55%).

39% of producers have completed a property management plan that incorporates biodiversity and or conservation, although 73% undertake deliberate measures to maintain, measure and enhance biodiversity. Producers who did undertake measures often took multiple measures, with maintenance of adequate ground cover (77%), management of soil health and organic matter (67%) and minimum tillage (64%) as the most popular methods.

Producers also undertook multiple land management activities, with weed control (89%) and destocking pastured areas (62%) most common.

The majority of producers also fenced areas for spelling (65%) and to manage grazing pressure (62%).

Almost all producers state that they can accurately identify common weeds and distinguish them from desirable plants (97%).

Producers source water for their animals from surface water (direct) (71%) and groundwater (55%).

Under a third (30% of producers have a documented plan for managing their farms and animals during extreme weather events, however 94% believe their stock can withstand prolonged dry and 82% can increase their stock water supply if needed.

Most producers undertake measures to improve soil water retention (83%).

Nationally, around 4 out of 5 producers (81%) report that they have completed chemical safety training. Around three quarters of producers (77%) who have completed chemical safety courses report that they have ChemCERT accreditation or a current ChemCERT card.

Most producers learned animal husbandry practices through informal means, with 78% shown techniques by another person and 58% self-taught. Nevertheless, 58% participated in training in 2023 covering an array of topics including animal health (61%) and pasture management (51%).

When it comes to Workplace Health and Safety, the most common actions producers take is ensuring appropriate farm vehicles have roll over bars (72%) and to encourage workers to identify safety concerns (70%).

Almost one half (38%) of producers report no issues with general labour availability, and slightly over two fifths (44%) report no issues with availability with shearers. Around one third of producers however report a major availability issue with general labour (42%) or shearers (35%).

The majority of producers use contractors 60%, with only 28% not using additional labour. 42% of producers have employees, with around a quarter of these (24%) between the age of 25-34 and 80% male.

Producers are at different stages in the succession planning process with 20% nationally having a formal succession plan in place but 33% not having commenced the planning process yet.

Benefits to industry

The benefits to industry of this research are that it has demonstrated and tracked that sheep producers have adopted, to different degrees, a wide range of sustainability practices and strategies in relation to animal husbandry, management and the environment.

The industry will benefit as the tracking data collected will guide MLA and AWI in investment and planning to continue to improve the sustainability of sheep producers' operations and maximise the value gained from industry levies.

Future research and recommendations

Two recommendations have been made from this research:

1. Explore the understanding and use of different types of pain management products
2. Consider streamlining questions involving ewe lambs and male lambs

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1. Background

1.1 Sustainability framework and need for research

Sustainability and sustainability initiatives is a movement that has continued to gather pace in recent times. The genesis of the movement in its current form can largely be attributed to the ground-breaking leadership of European leaders and has now become a mainstay in business globally. Environmental, social and governance reporting is commonplace in leading global businesses and mandatory for some. It's an initiative that consumers relate to strongly and has driven consumer choice not only for product selection but with investment. Companies that lack a framework to reduce their environmental and social impact are finding it increasingly difficult to source capital to support the viability of their business. It's a movement that has become so deeply ingrained in the global community that no industry can afford to be left behind with adoption.

Agriculture and agricultural production are essential for life as we know it, but that production too leaves an environmental footprint. Greenhouse gas emissions, pollution, chemical residues and animal welfare are some of the key areas that need to be tackled to reduce agriculture's impact. It's a topic that has at times been a divisive issue in Australia between government, industry and consumers. The phasing out of mulesing, the removal of certain chemicals from the market, the increase in traceability in the supply chain and regular discussion on emissions trading schemes are some examples of sustainability driven initiatives.

Leaders in the sheep industry have recognised that sustainability holds huge importance with regards to Australia both in maintaining its presence in global markets but also grow its presence in other markets in the future. It is for this reason sustainability frameworks have been constructed with heavy consultation with industry organisations, leaders and producers.

In 2017, the sheep industry identified six key priority areas to focus on to drive sustainability - animal husbandry, profitability across the value chain, balance of tree and grass cover, antimicrobial stewardship, managing the risks of climate change and health and safety of people in the industry. These six priorities form the four key themes of animal welfare, economic resistance, environmental stewardship and people and the community.

A key requirement for sustainability is the ability to track development and placing increased focus on driving adoption and improvements. It is essential to measure changes in practices over time to allow continual refinement of industry sustainability initiatives, investment and program development. Sustainability tracking is also essential for reporting, providing evidence for market access negotiations and for wider transparency for consumers. It is for these needs that MLA and others have constructed a robust and integrated tracking system to measure key metrics and trends over time.

2. Project objectives

The primary objective of this project was to track key metrics and practices that underline the sustainability frameworks for the Sheep industry to help guide MLA's investment and project planning and provide transparency of production to consumer markets both domestically and internationally.

To meet with these project objectives, the following research topics were addressed:

1. Husbandry practices, management strategies and standards

Identifying the incidence and levels of key husbandry practices related to pest and disease control measures, and breeding practices. Highlight the use and understanding of specific management strategies and standards related to predators, insect pests and animal welfare

2. Environmental profile

Understand the level of environmental derived income through on-farm management activities and the use of renewable energy. Gauge participation in biodiversity and conservation efforts and understand stock water supply and resilience

3. Wool quality assurance and workforce labour

Ascertain producers' attitudes towards and use of tools, and quality assurance in their business. Understanding producers' views on workforce labour

4. Attitudes, drivers, barriers and pain points

Investigate and highlight producers' views towards sustainability initiatives and practices and general on-farm issues including succession planning

5. Producer profile

Profiling producers by age, gender, education and years in farming to form a clear picture of producers in the industries.

3. Methodology

3.1 Questionnaire

A fully structured questionnaire to address the research objectives and issues was developed in conjunction with MLA and AWI. Where relevant, questions from previous surveys conducted by MLA and AWI were included to maximise tracking of any demographic or behavioural change for comparison and validation purposes. This was particularly important where some questions related to differences in target audiences (Merino and non-Merino), class of stock (ewes and wethers) and age of stock (maiden ewes and mixed ewes). The current survey also needed to address topics and practices that were not covered in previous surveys.

All questions for analysis were closed format with a list of pre-populated responses for respondents to select during online completion or interviewers to select during telephone completion. An option for 'other specify' responses was also provided with these open responses provided to MLA for future internal reference.

A draft online questionnaire was piloted with 3 Merino producers and 3 non-Merino producers on 28 February 2024. The average survey length was 26:40 minutes. As the interview length matched the budgeted 25 minutes and the programmed survey captured all required data, the survey was fully launched on 1 March 2024.

A copy of the questionnaire is provided in the Appendix.

3.2 Sample design

A sample of 1,268 sheep producers was interviewed for this study, comprised of 926 Merino producers and 642 non-Merino producers. The samples were designed to achieve national results with a margin of error of +/- 2.1% with a 95% confidence level for the total sample, +/- 2.7% for the Merino sample and +/- 3.4% for the non-Merino sample.

The total sample was stratified into 6 state and 3 flock size quotas (100 – 499, 500 – 1,999 and 2,000 head +) based on the latest ABS producer population data (18 quotas in total). The samples achieved for each quota is provided in Table 9 in the Appendix.

3.3 Sample selection

MLA provided Kynetec with a database of 14,513 sheep producer members who had an email address and a further 5,421 who had a phone number only. These records were used for the soft launch, full launch and reminders for the online survey, and for telephone interviewing.

At the beginning of the survey, all respondents were screened to ensure that they qualified for the survey based on the following requirements:

1. Be the primary / joint decision maker regarding sheep husbandry practices on their property
2. Have farm income from sheep for wool and / or mutton, lambs for meat or lambs for wool in the previous three financial years
3. Have a minimum flock size of 100 head in 2023
4. Merino producers must join maiden and / or mixed age Merino ewes to Merino rams to qualify as "Merino"

5. Non-Merino producers must have breeds other than Merino or Dohne Merino or if they had Merino sheep, they must not join them to Merino rams (i.e., they could join Merino ewes to non-Merino rams, or they could run Merino wethers).

If a producer qualified for both Merino and non-Merino, they were allocated to the lowest quota (either Merino or Non-Merino). They were then advised that the survey related only to their Merino (or Non-Merino) sheep enterprise, not the other sheep enterprise that they may have and to think only of their Merino (or Non-Merino) enterprise when answering the questions.

All respondents were also directed at the beginning of each section of the questionnaire to answer the questions only in relation to their Merino or non-Merino sheep, whichever quota they had been selected for.

3.4 Data collection

Data was collected via a mixed methodology approach using both online and Computer Assisted Telephone Interview (CATI) methodologies. The methodological split was proposed to be 900 online and 350 CATI.

A pilot (soft launch) for the online survey was survey was conducted on 26 – 29 February 2024 and following the successful pilot, the online survey was fully launched to MLA's Member database by providing each a unique link to the online survey. In conjunction with the full launch, MLA was provided a generic link to the online survey so that MLA could promote participation in the survey via MLA's social media channels and website. Nine reminder emails were sent to non-respondents throughout March to May.

The online survey was closed with 835 completes. The CATI component of 433 surveys was completed by contacting non-respondents to the online survey and MLA members who were only contactable by phone, not email. The final sample of 1,268 produces comprised of 809 Merino producers and 459 non-Merino producers was reached on 10 May 2024.

Average survey length was 26:40 minutes.

The breakdown of the sample by methodology is shown in Table 1.

Table 1: Sample methodology

Methodology	Total	Merino	Non-Merino
Online	**835**	**486**	**349**
Unique link	754	435	319
Generic link	81	51	30
CATI	**433**	**327**	**106**
Total	**1,268**	**813**	**455**

For the online survey, of 14,513 sheep producers sent a unique link by email, 89 screened out because they did not meet the minimum requirements to qualify, and 754 were completed. With the addition of the 81 online surveys completed via the generic link, the final number of online surveys was 835.

3.5 Statistical analysis

It should be noted that the results presented in this study are derived from a survey (as opposed to a census when all members of a population are captured). Survey results are used to make inferences about the total population.

As all surveys are subject to errors, a survey result should not be treated as a single value but rather as the midpoint of the likely range that the true population result would lie within. The range around the survey result is the “margin of error”.

For example, a survey result of 50% may have a margin of error of plus or minus 5 percentage points i.e., 45% - 55%. The margin of error depends on the sample size (smaller sample sizes have larger errors) and the actual sample result (a result closer to 50% has a larger percentage error). Due to a high margin of error associated with a small sample, results based on a small sample in the report should be treated with caution. Care should be taken with any results from a sample of less than 30. A summary of the expected margins of error based on different sample sizes (from 25 – 1,200) and different survey results (from 5% to 95%) assuming a 95% confidence level is contained in Table 10 in the Appendix. The main statistically significant differences in results between states, Merino versus Non-Merino and flock size are also highlighted throughout this report.

The main statistically significant differences in results between states are highlighted throughout this report. If a result for one state is significantly higher or lower than the national result, this will be shown in graphs throughout the report with up (↑) or down arrow (↓) respectively, based on a 90% confidence level.

Sample bases shown in the charts are reflective of the 2023 sample.

4. Results and discussion

4.1 Background to the analysis

This section presents the results and discussion summarising the current practices of Australian sheepmeat and wool producers. Results are presented at the national and state level with differences between Merino and non-Merino producers highlighted where relevant. Some differences are also provided by flock size where relevant.

4.2 Producer demographics

Producer demographics such as region, sheep breed, number of ewes joined, income, education, age and gender are presented below **Figure** 1 to **Figure 8**. These charts illustrate the diverse demographic range of the sheep industry in Australia.

The sample comprises of producers from New South Wales (37%), Victoria (27%), Queensland (4%), South Australia (16%), Western Australia (14%), and Tasmania (3%) (**Figure** 1).

On average, producers nationally earn 62% of their income from sheep (**Figure** 4).

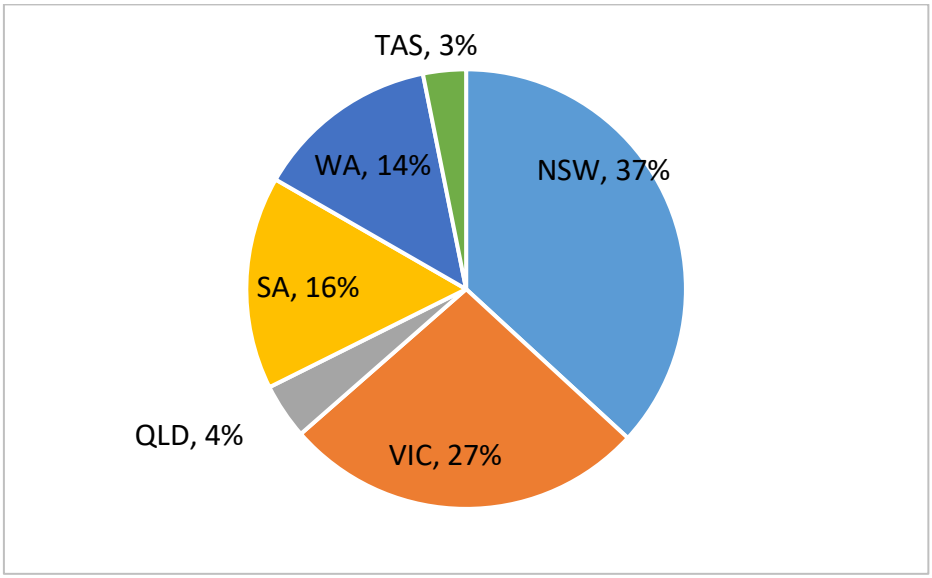
A quarter (26%) of producers are tertiary educated (**Figure 6**).

The largest age segment of producers was those 65 and over (35%), almost all producers were 35 and over, with only 2% 34 or younger. 9% of producers declined to state their age (**Figure 7**).

The majority (75%) of producers identified as male. 16% identified themselves as female. 9% preferred not to identify themselves (**Figure 8**).

Figure 1: Respondent demographic by state

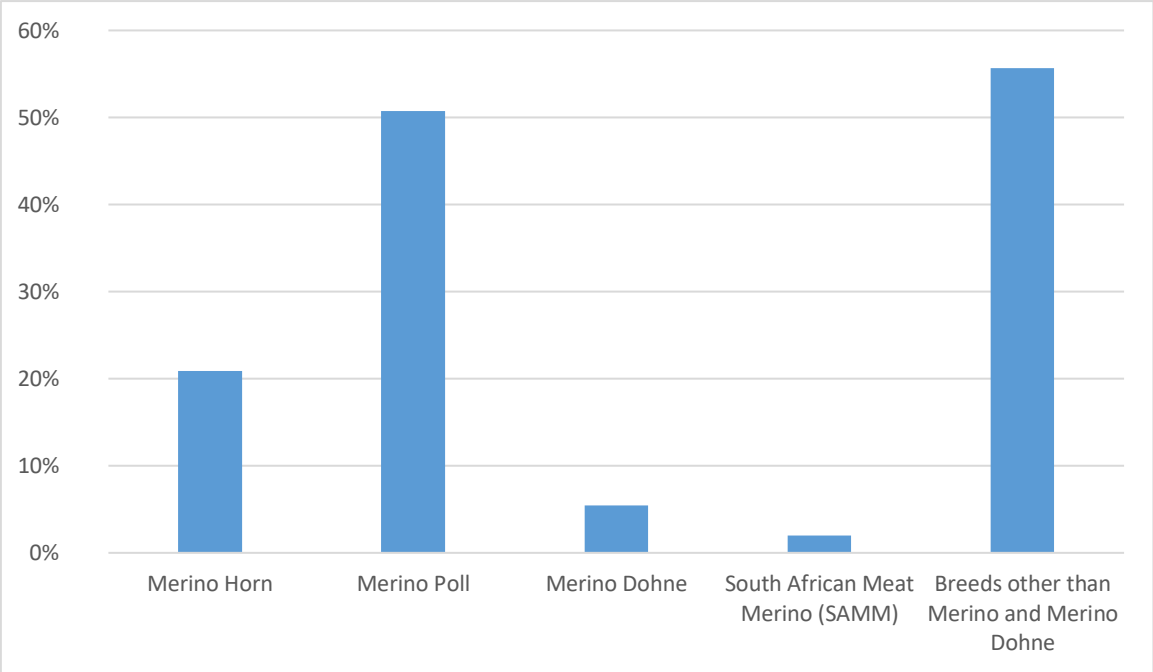
Base: All producers n = 1,268



S1 Which state is your main sheep enterprise located?

Figure 2: Respondent demographics by sheep breed

Base: All producers n = 1,268

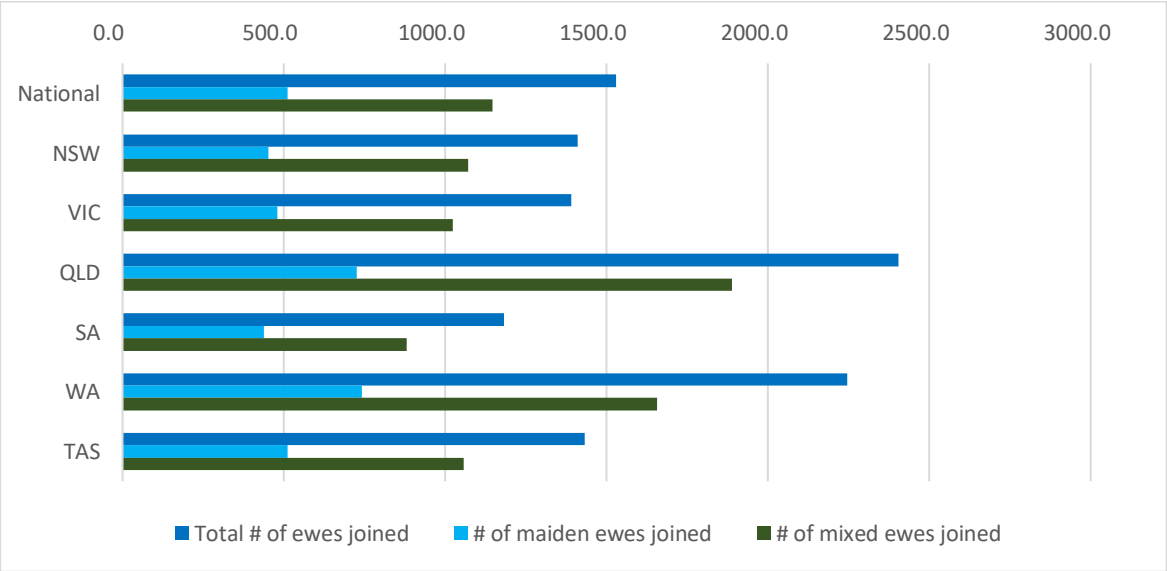


N.B. Producers were able to select more than one breed

S4b Which of the following breeds comprise your sheep flock?

Figure 3: Average number of maiden ewes and mixed ewes joined

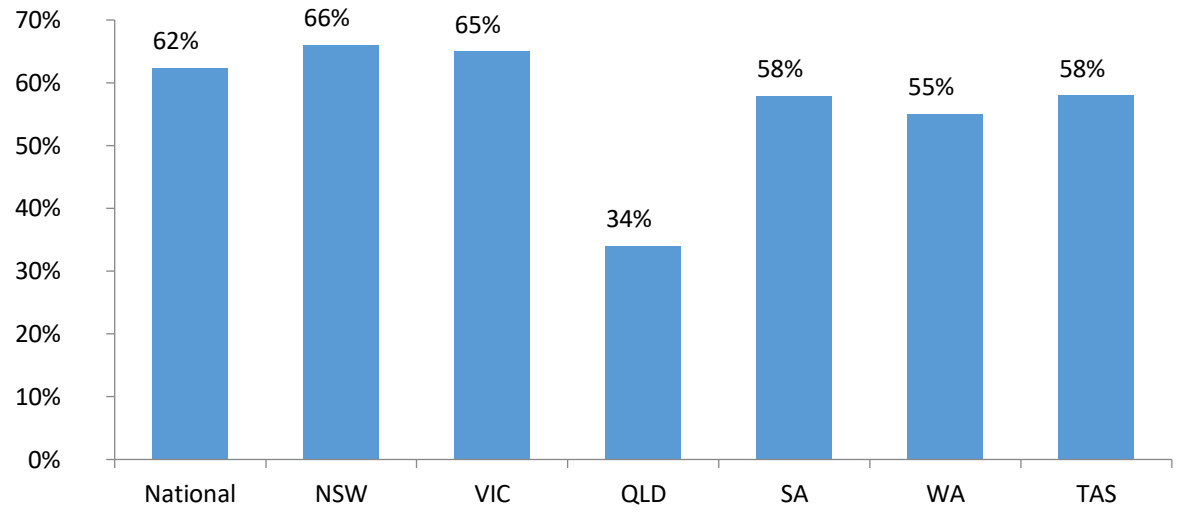
Base: All producers n = 1,268



S5a In 2023, how many maiden and mixed age merino ewes did you join to merino rams?

Figure 4: Percentage of gross farm income from sheep by state

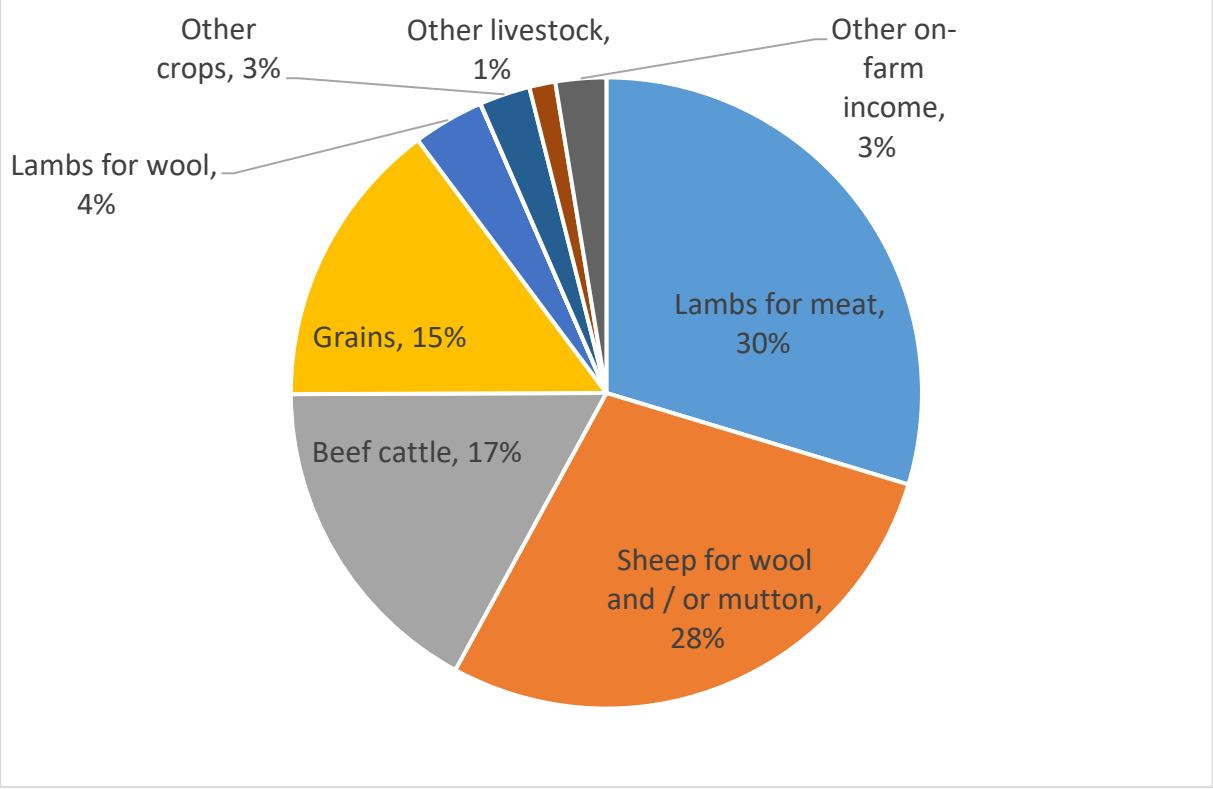
Base: All producers n = 1,268



S3 Over the last 3 full financial years, what percentage of your gross farm income came from the following activities?

Figure 5: Percentage of gross farm income nationally

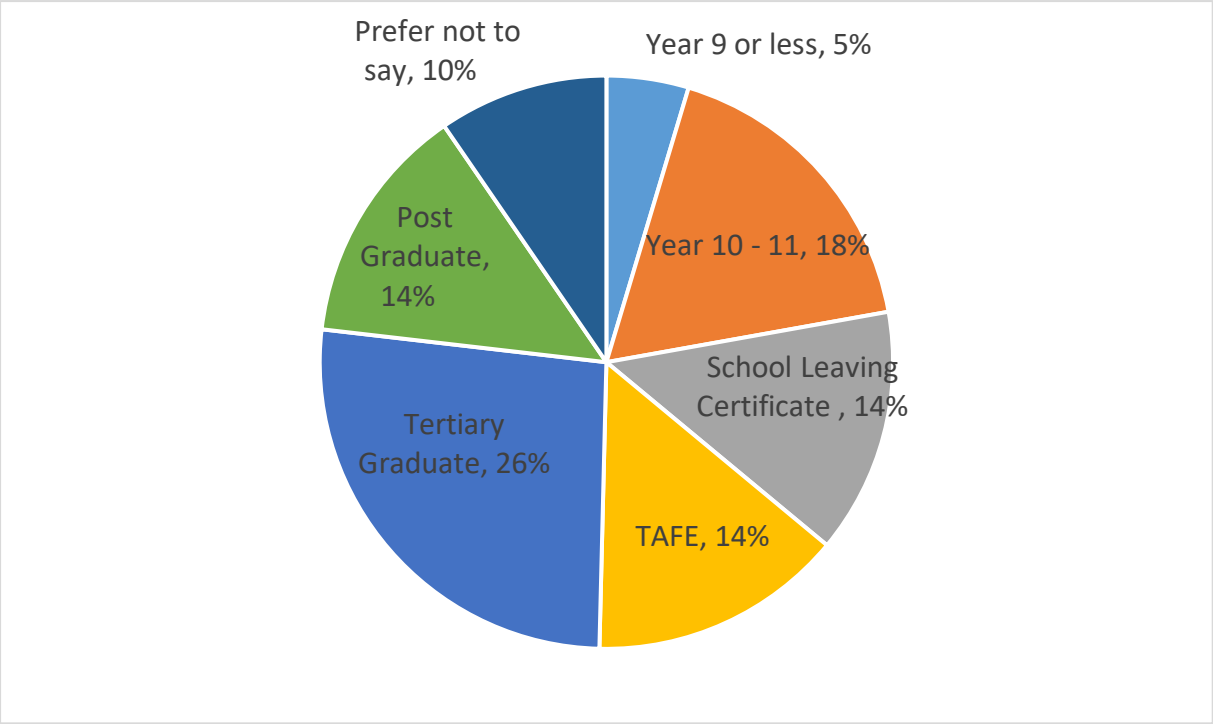
Base: All producers n = 1,268



S3 Over the last 3 full financial years, what percentage of your gross farm income came from the following activities?

Figure 6: Respondent demographic by education

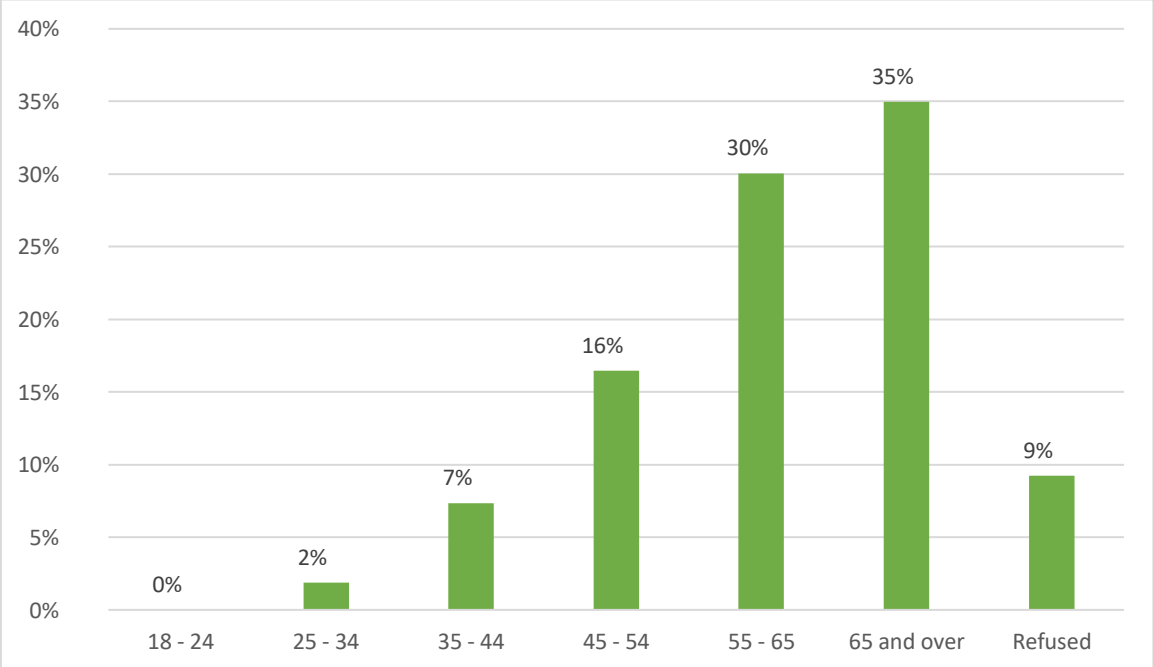
Base: All producers n = 1,268



17.2 What is the highest level of education you have achieved?

Figure 7: Respondent demographic by age

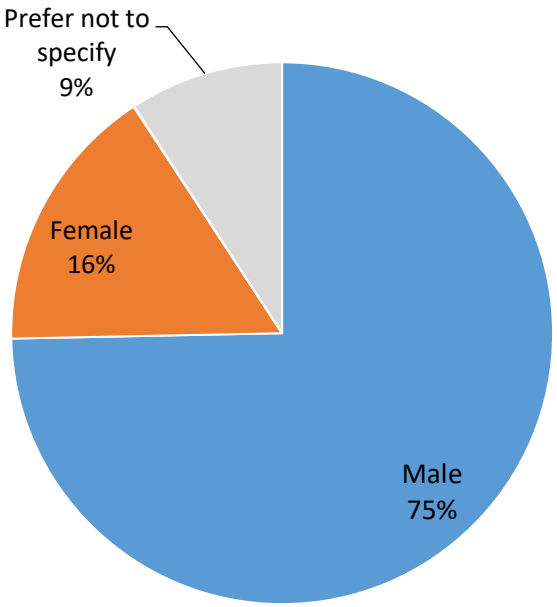
Base: All producers n = 1,268



17.3 For classification purposes, into which of the following age groups you fall?

Figure 8: Respondent demographics by gender

Base: All producers n = 1,268



17.4 For classification purposes, into which group do you fall into?

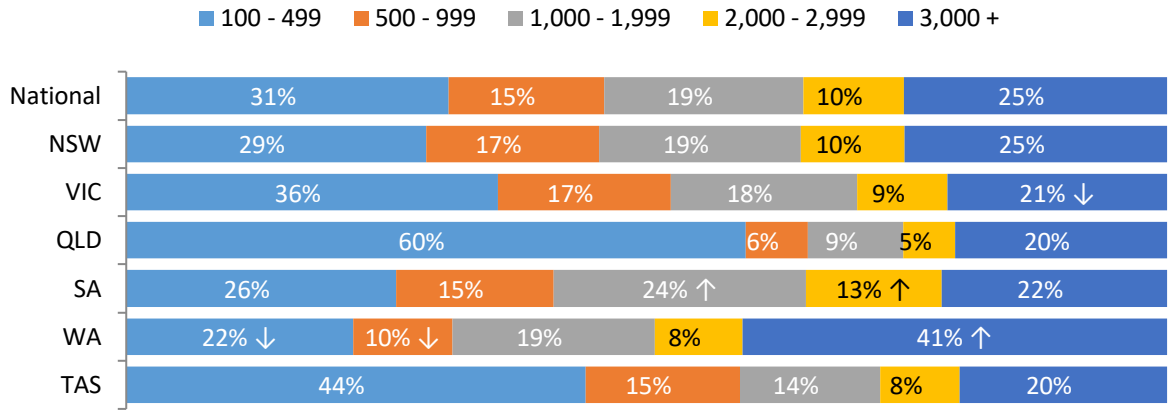
4.3 Flock demographics

Nationally, slightly under a third of all producers (31%) ran between 100 and 499 sheep while 15% ran 500 - 999 sheep, and 19% between 1,000 – 1,999 sheep. 10% of producers ran between 2,000 – 2,999 sheep, and 25% ran 3,000 or more sheep (Figure 9).

Producers in Western Australia tended to be more likely to have larger flocks of 3,000+ sheep (41%), while South Australians were significantly more likely to have moderate flocks of 1,000 - 2,999 (37%). Merino producers also were more likely to have larger flock sizes of 1,000-1,999 (23%), 2,000-2,999 (13%) 3,000+ (37%) while non-Merino producers were most likely to have small flocks (53%) of 100 – 499 head.

Figure 9: Respondent demographic by total flock size

Base: All producers n = 1,268



S7 As of 31 January 2024 approximately how many sheep were in your flock, including breeding and dry ewes, lambs, wethers and rams?

4.4 Joining and scanning

On average, producers join ewes to rams for 11.3 weeks, with almost one third of producers nationally (28%) join ewes to rams for eight weeks or longer. Queensland producers were significantly more likely than other states to join for seven to eight weeks (70%), while South Australian producers were more likely to join for between six and seven weeks (11%). Compared to non-Merino ewes (38%), Merino ewes (19%) were significantly less likely to be joined for eight weeks or greater. Merinos (23%) were more likely to be joined for four to five weeks than non-Merino breeds (11%) and for six to seven weeks (9% and 4%, respectively). (Figure 10).

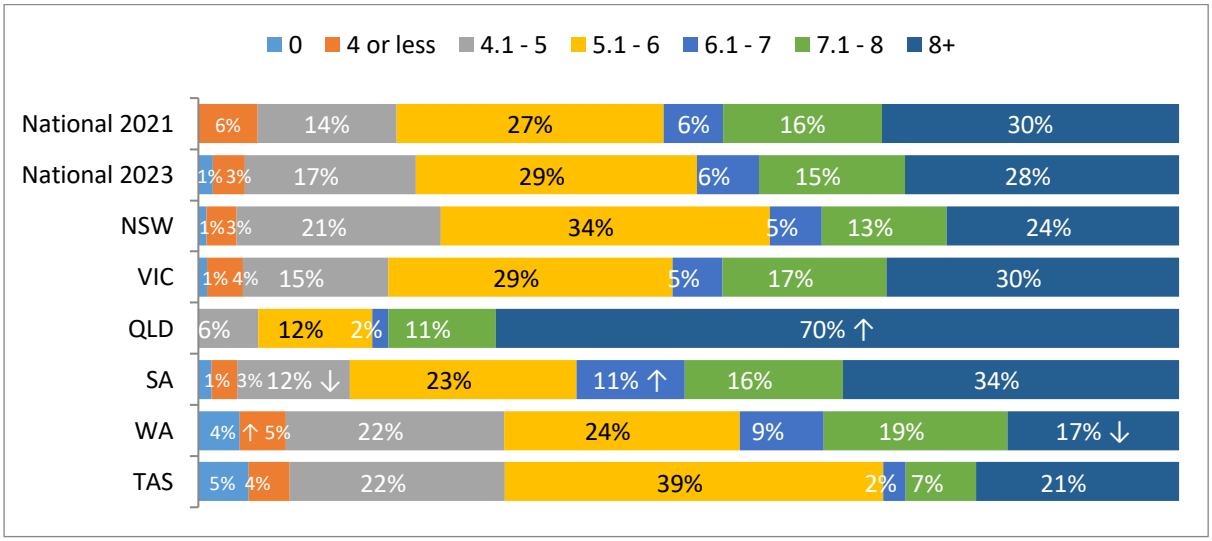
Pregnancy scanning is undertaken by fewer than half of producers with 45% of producers nationally stating that they scan an average of 2,245 ewes. Producers in Queensland were significantly less likely to conduct pregnancy scanning (18%) (Figure 11). Over 2 in 3 (70%) producers who did pregnancy scan, scanned their animals for dry, single and multiple foetuses. Less than one third (30%) wanted to know if the ewe was simply wet or dry. (Figure 12). Producers scan an average of 1550 ewes for wet / dry and 2549 for pregnant / single/ multiples.

Nationally, producers scanned on average 69 days after rams in. There was no significant deviation from this pattern in either the states or the Merino and non-Merino populations (**Figure** 13).

Around 1 in 3 (31%) producers managed their twin lambs separately. Western Australian and Queensland producers were significantly less likely to manage twins separately (76% and 91%, respectively). Conversely, Victorian producers were significantly more likely to manage twin lambs separately (31%) (Figure 14).

Figure 10: Joining period in weeks

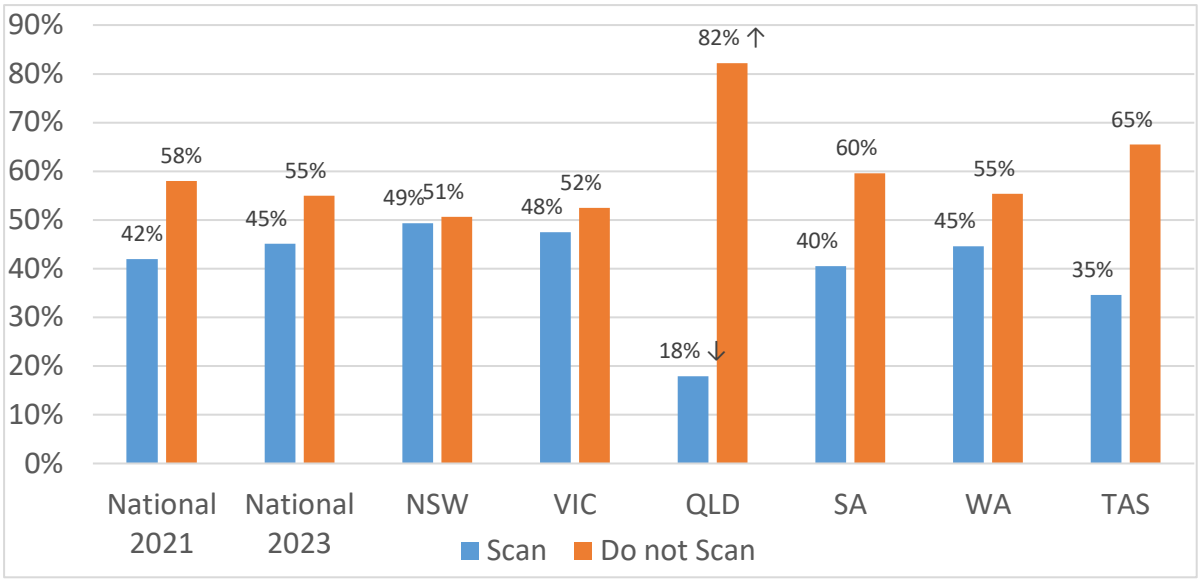
Base: All producers n = 1,268



3.1 How many weeks do you join your ewes to your rams?

Figure 11: Pregnancy scanning of ewes

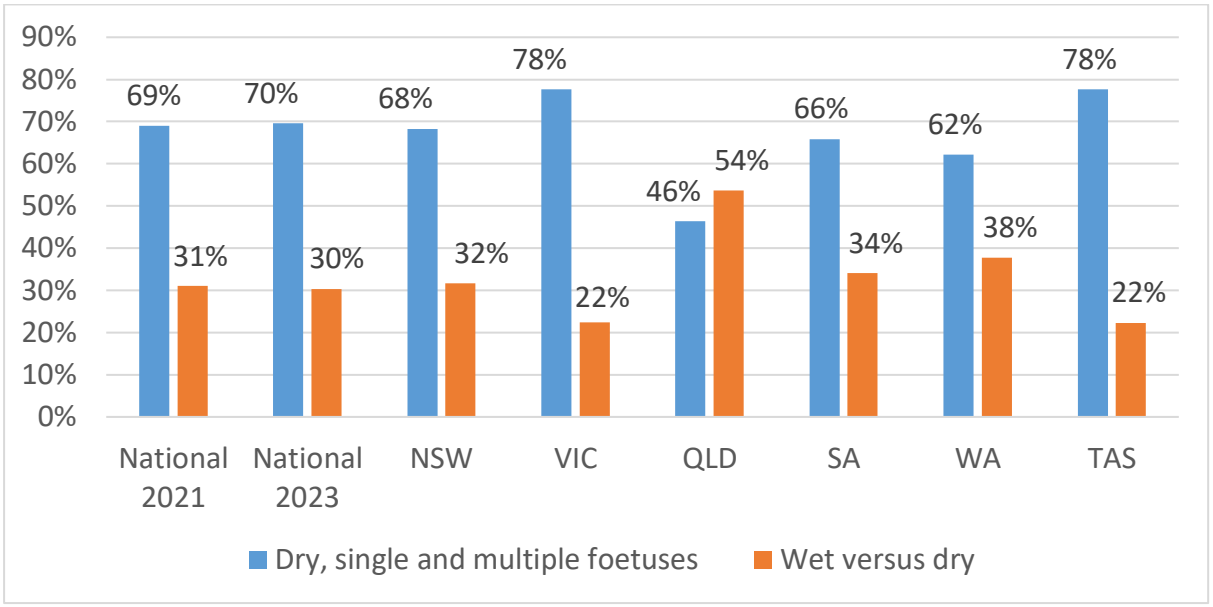
Base: n = 1,268



3.2 Do you pregnancy scan your ewes?

Figure 12: Scanning for dry, single and multiple foetuses

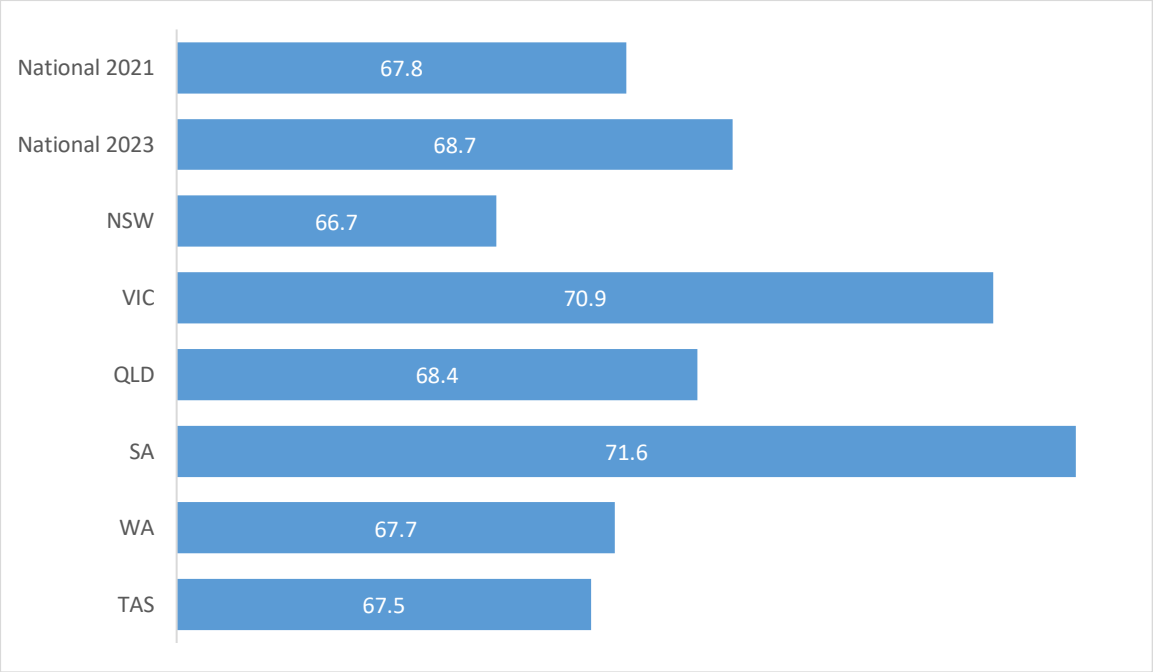
Base: Producers who scan for pregnancy n = 681



3.3 Which of the following do you scan for?

Figure 13: Average number of days after rams in when scans are performed

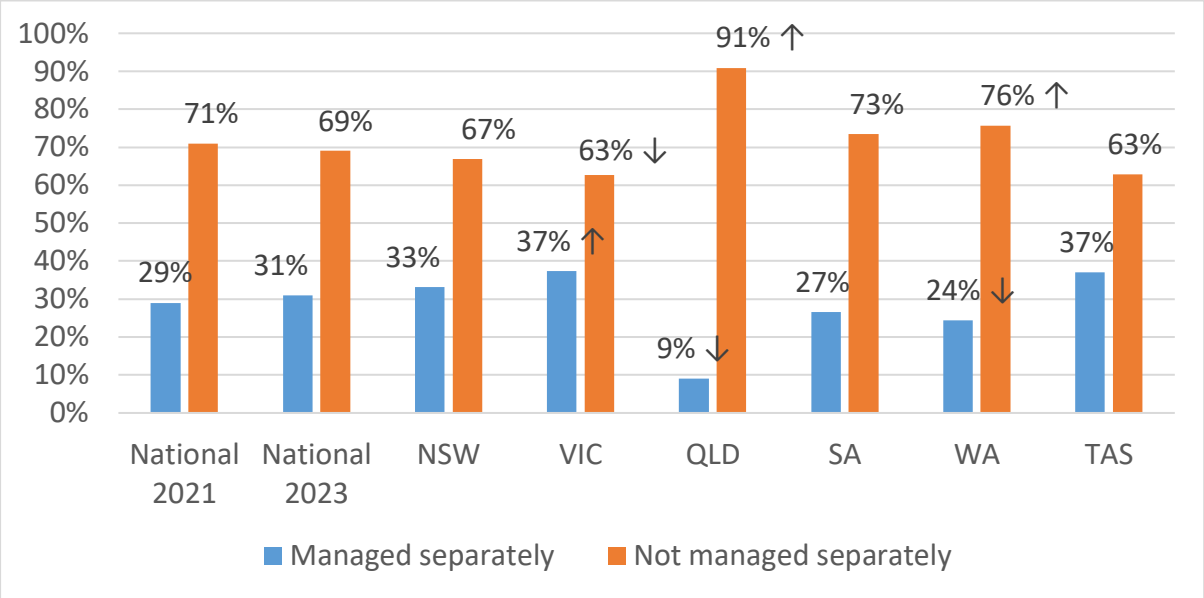
Base: Producers who pregnancy scan n = 676



3.4 How many days after rams in do you scan?

Figure 14: Separate management of twin lambs

Base: n = 1,268



3.5 Do you manage twin lambs separately?

4.5 Tail docking

4.5.1 Overview

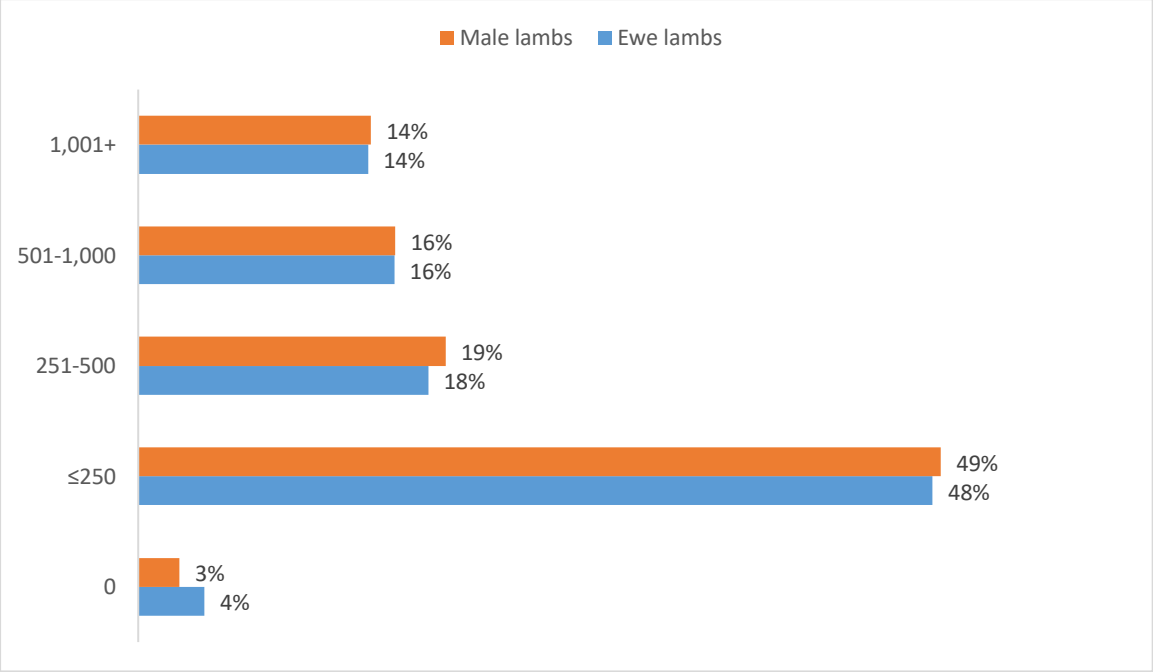
On average, producers have 599 ewe lambs and 602 male lambs on their properties in 2023 (Figure 15). At the national level, 90% of producers tail dock their ewes, docking an average of 617 ewe lambs (Figure 16). The proportion of ewe lambs that are tail docked is higher at 98%. Producers in Queensland were significantly less likely to tail dock lambs (43%). 97% of Merino producers dock their ewes' tails, while 81% of non-Merino producers dock their ewes' tails.

At the national level, 90% of producers tail dock their male lambs which represents 98% of male lambs being tail docked. Producers in Queensland were significantly less likely to tail dock male lambs (43%), while New South Wales producers were more likely to tail dock male lambs (95%). (

Figure 17) 97% of Merino producers dock their male lambs' tails, while 82% of non-Merino producers dock their male lambs' tails.

Figure 15: Number of ewe lambs and male lambs on property

Base: All producers n = 1,268

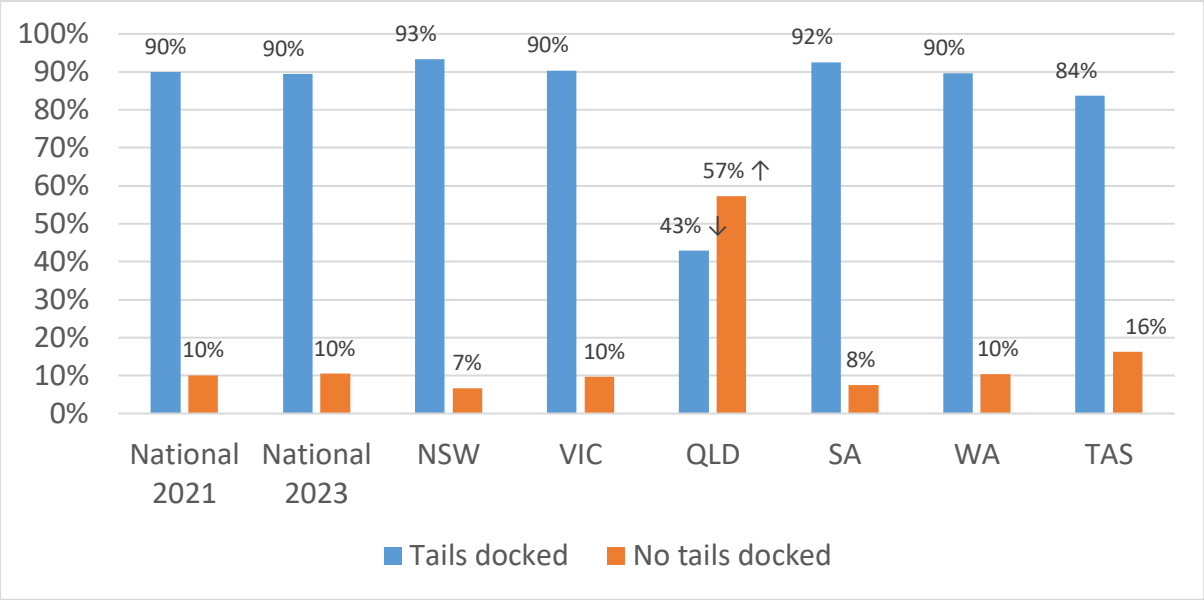


4.0 How many ewe lambs did you have on your property in 2023?

4.5.1 How many male lambs did you have on your property in 2023?

Figure 16: Tail docking of ewes

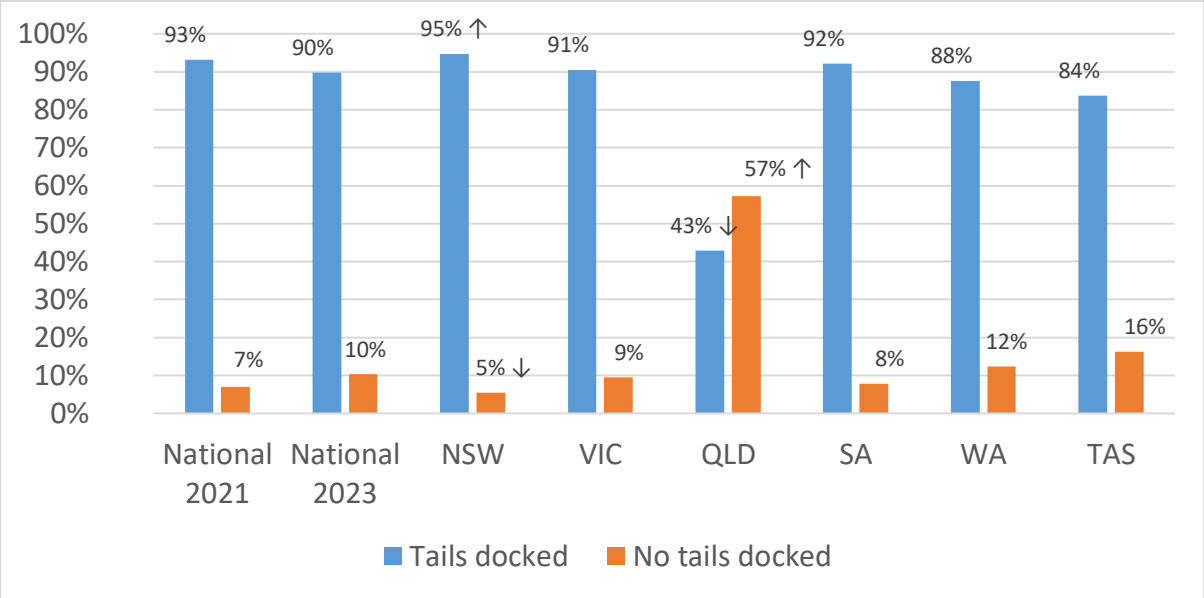
Base: All producers n = 1,268



4.1 Do you tail dock your ewe lambs?

Figure 17: Tail docking of male lambs

Base: All producers n = 1,268



4.6 Do you tail dock your male lambs?

4.5.2 Tail docking method

On average, producers tail dock 618 ewe lambs (**Figure 18**) and 620 male lambs (**Figure 20**). Rubber rings (49%) and hot knife (49%) are the most commonly used methods to tail dock ewes (**Figure 19**). There was a significant state effect for tail docking method. Rubber rings were significantly more commonly used in New South Wales (58%), and less commonly used in Western Australia (34%) and South Australia (30%). Merino producers were more likely to use hot knife (66%) and shears (3%) while non-Merino producers were more likely to use rings (75%).

Rubber rings (51%) and hot knife (48%) are the most frequently used methods to tail dock male lambs (Figure 21). There was a significant state effect for tail docking method. Rubber rings were significantly more commonly used in New South Wales (59%), and Victoria (58%) while Queensland producers were more likely to use cold knife (39%) and shears (8%), and South Australian and Western Australian producers favoured hot knife (66% and 63% respectively). Merino producers were more likely to use hot knife (66%) and shears (2%) while non-Merino producers were more likely to use rings (77%).

The most common reasons cited for using rings to tail dock ewe lambs was that it is easy (68%), quick (51%) and bloodless (50%) (**Figure 22**). Queensland producers were significantly less likely to cite rings as a preferable (7%), effective (5%), cost effective (2%), reliable (2%), less flystrike (2%) or safer method for operators (1%).

The most common reasons cited for using rings to tail dock male lambs was that it is easy (47%), clean or neat (39%) and bloodless (36%) (Figure 23). Tasmanian producers were significantly less likely to cite rings as less prone to flystrike (3%).

At the national level, the most common reasons cited for using a hot knife to tail dock ewe lambs were that it is bloodless or seals the wound (77%), clean or neat (47%) and quick (47%) (Figure 24). Tasmanian producers were more likely than other states to say that hot knife was efficient (78%), and less prone to flystrike (65%). Merino producers were less likely to say this method resulted in less infection (29%). Conversely, 46% of non-Merino producers were more likely to cite a lower likelihood of infection (46%).

Nationally, the most common reason cited for using a hot knife to tail dock male lambs were that it is bloodless or seals the wound (67%) (Figure 25).

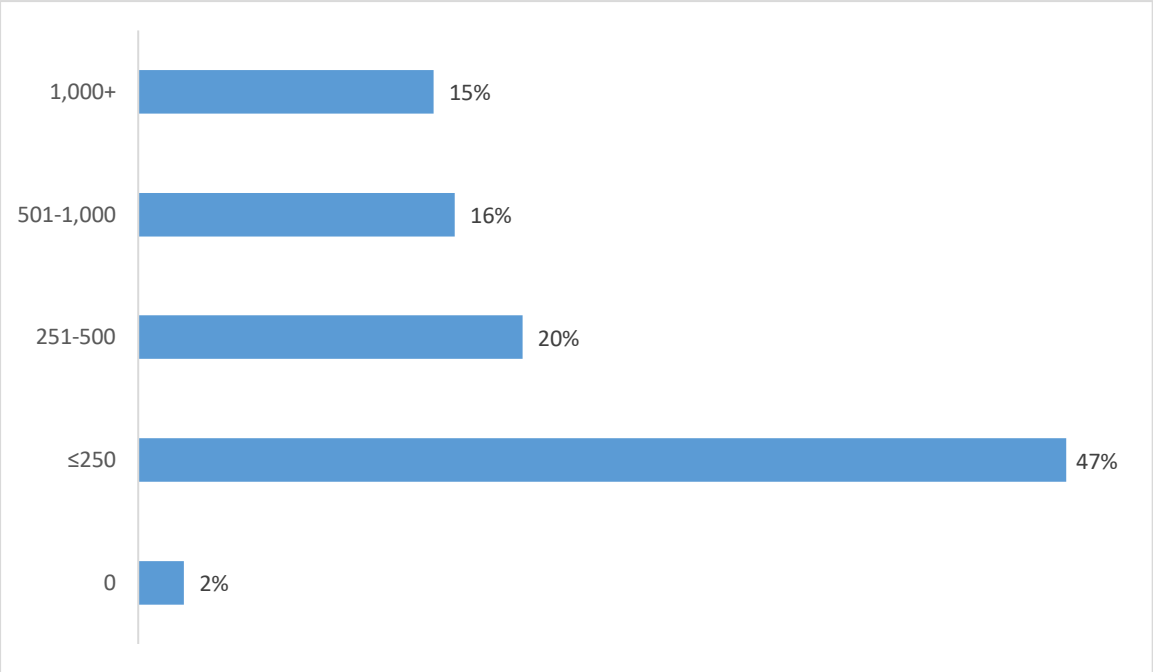
At the national level, the most common reasons cited for using a cold knife on ewe lambs were that it is quick (65%), effective (52%) and clean and neat (49%) (Figure 26). There was no significant difference in reasons for using cold knife between states. Reasons given for using the cold knife on male lambs knife were that it is efficient (63%), effective (63%) and quick (62%) (Figure 27).

Clean and neat (66%) and quick (66%) are the main reasons for using shears for tail docking ewe lambs (Figure 28).

The most common reasons cited for using shears to tail dock male lambs were that they were a quick (62%), clean and neat (51%) and efficient (50%) (Figure 29).

Figure 18: Number of ewe lambs tail docked

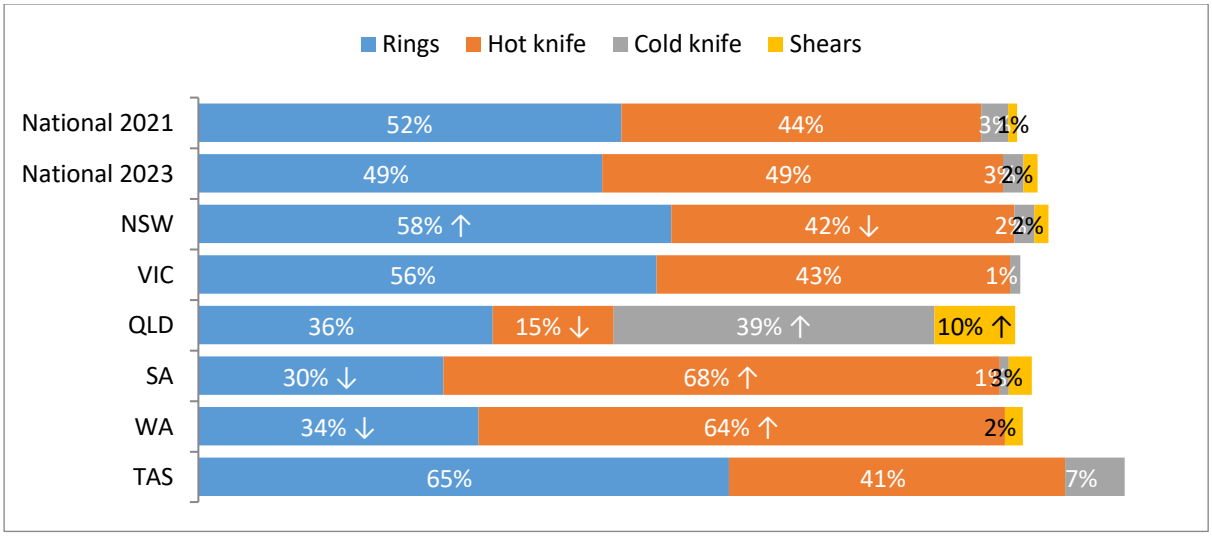
Base: Producers who docked ewe lamb tails n = 1,185



4.1.1 How many ewe lambs did you tail dock in 2023?

Figure 19: Method for tail docking ewes

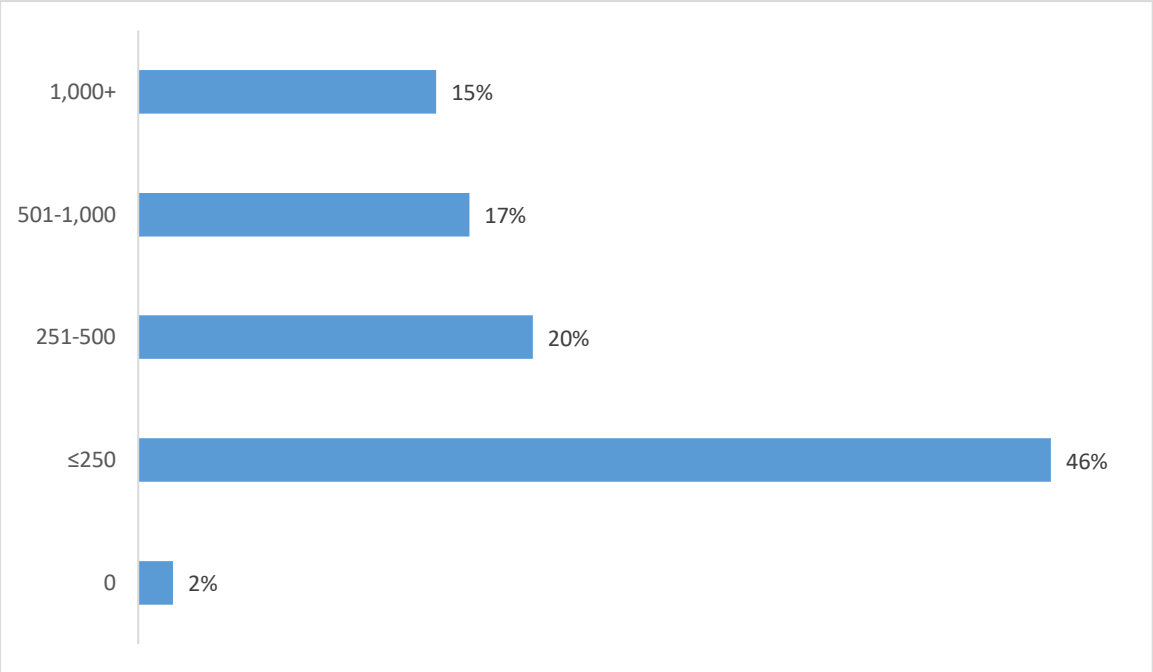
Base: Producers who tail dock ewes n = 1,185



4.2 What method do you use to tail dock ewes?

Figure 20: Number of male lambs tail docked

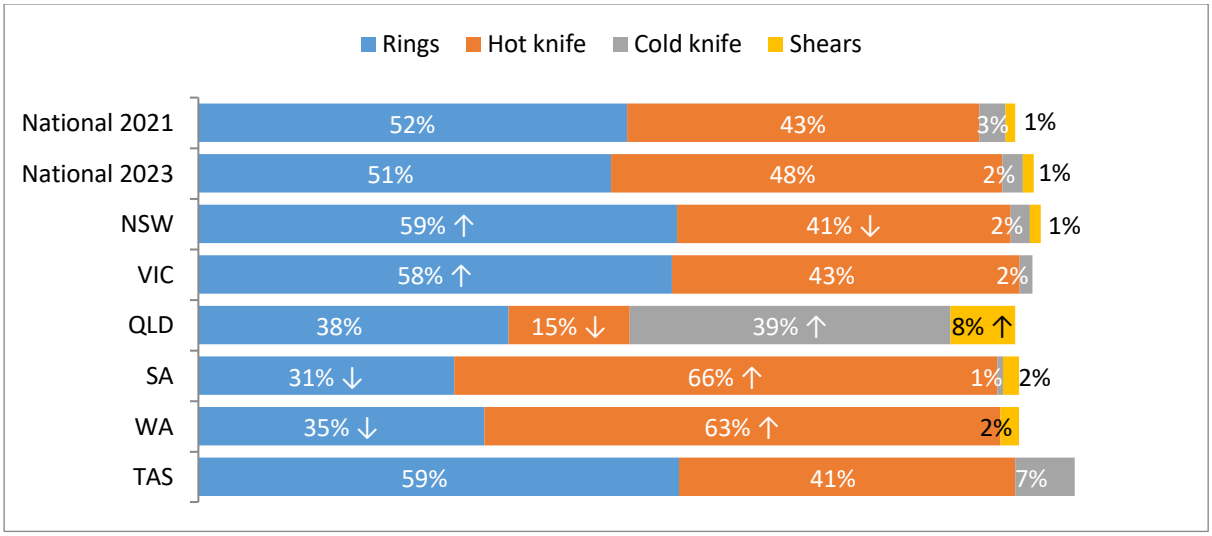
Base: Producers who docked male lamb tails n = 1,184



4.6.1 How many male lambs did you tail dock in 2023?

Figure 21: Method for tail docking male lambs

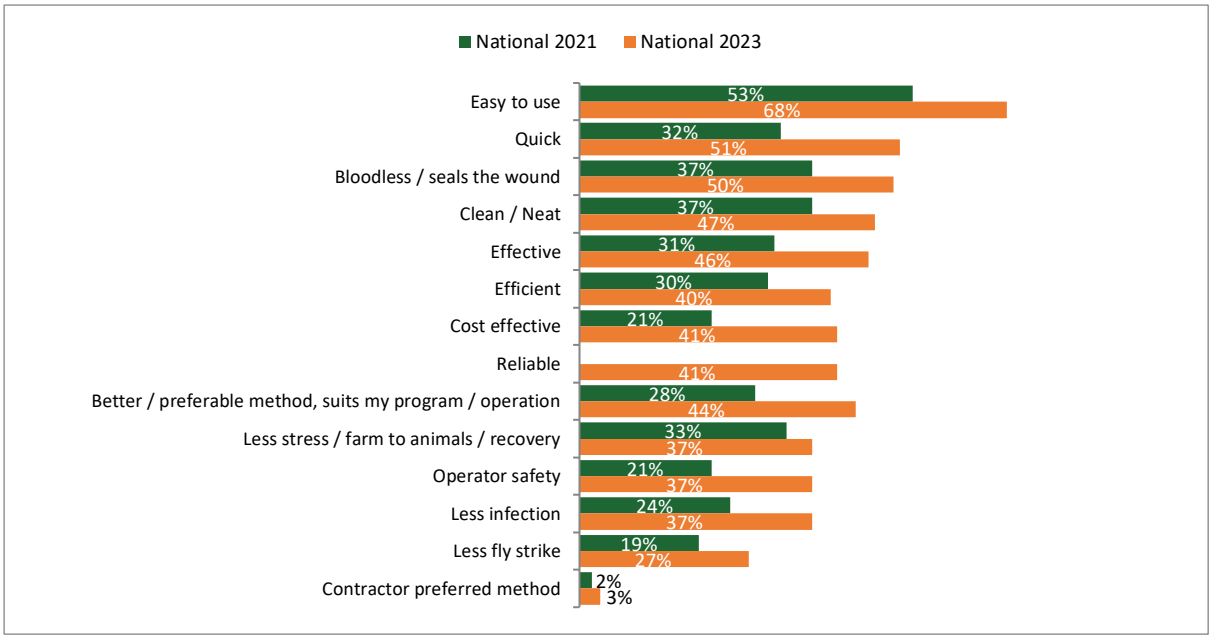
Base: Producers who tail dock male lambs n = 1,184



4.7 What method do you use to tail dock male lambs?

Figure 22: Reason for using rings to tail dock ewes

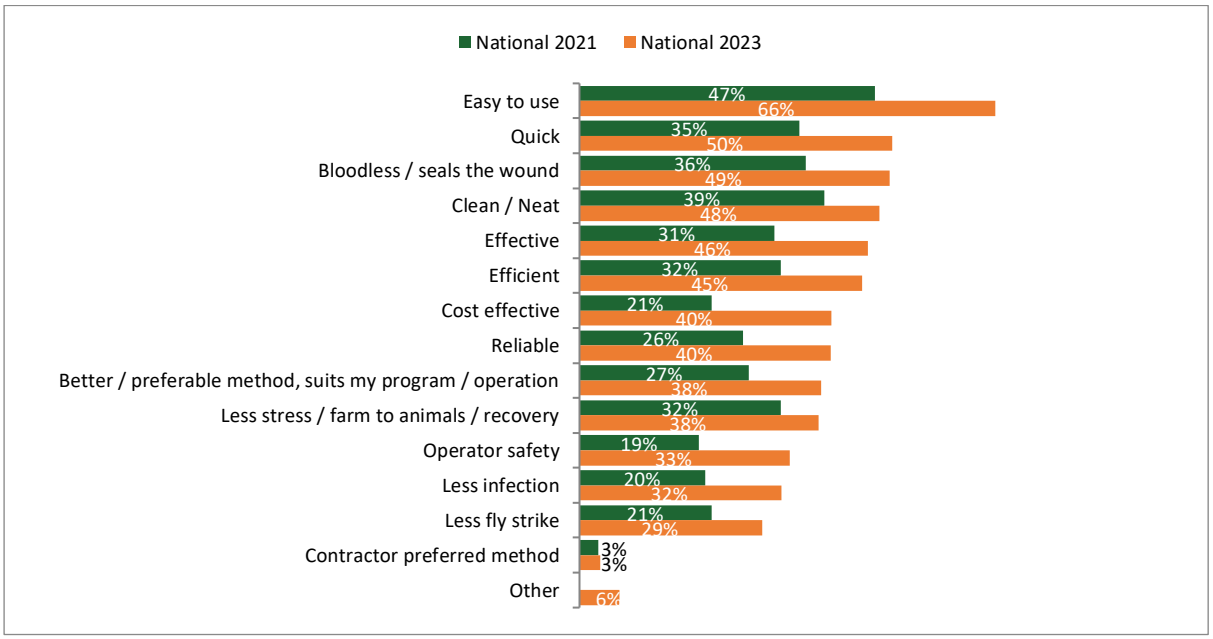
Base: Producers who tail dock ewes using rings n = 772



4.3 Why do you use rings to tail dock your ewes?

Figure 23: Reason for using rings to tail dock male lambs

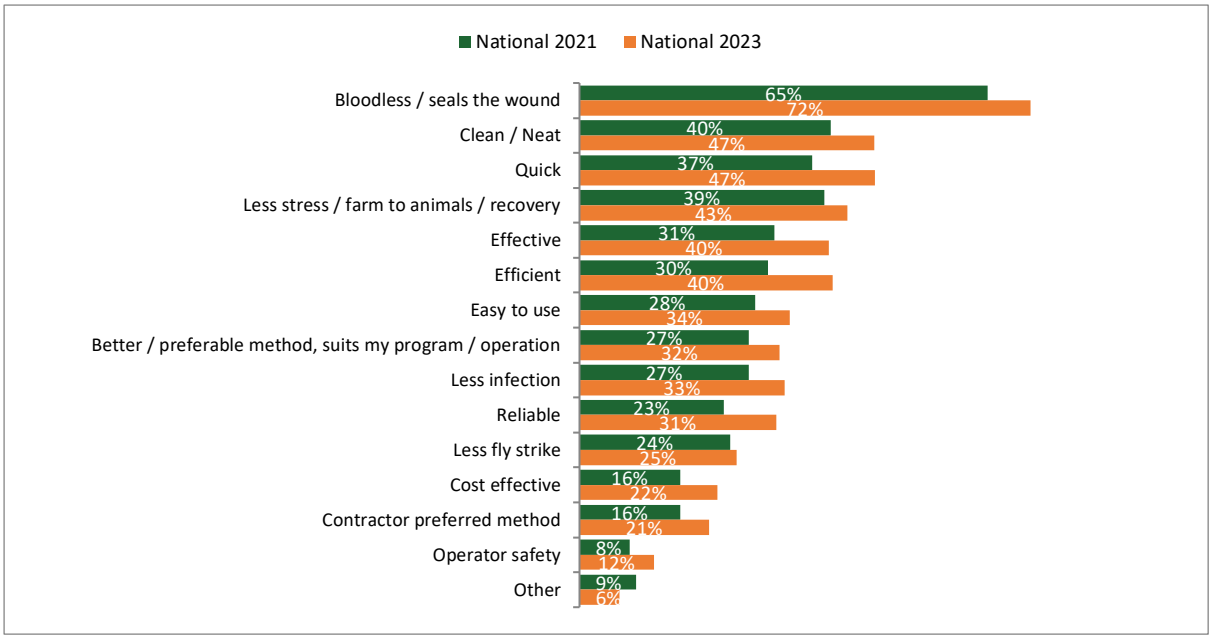
Base: Producers who tail dock male lambs using rings n = 480



4.8 Why do you use rings to tail dock your male lambs?

Figure 24: Reasons for using hot knife on ewe lambs

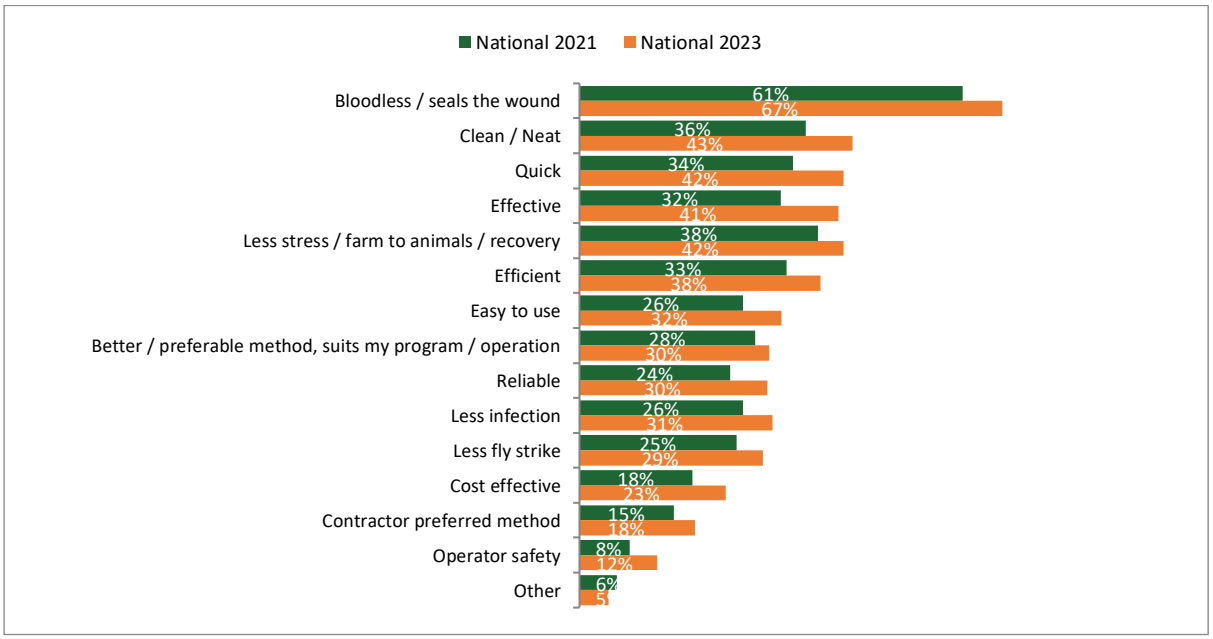
Base: Producers who tail dock ewes using hot knives n = 683



4.3 Why do you use hot knife to tail dock your ewes?

Figure 25: Reason for using hot knife to tail dock male lambs

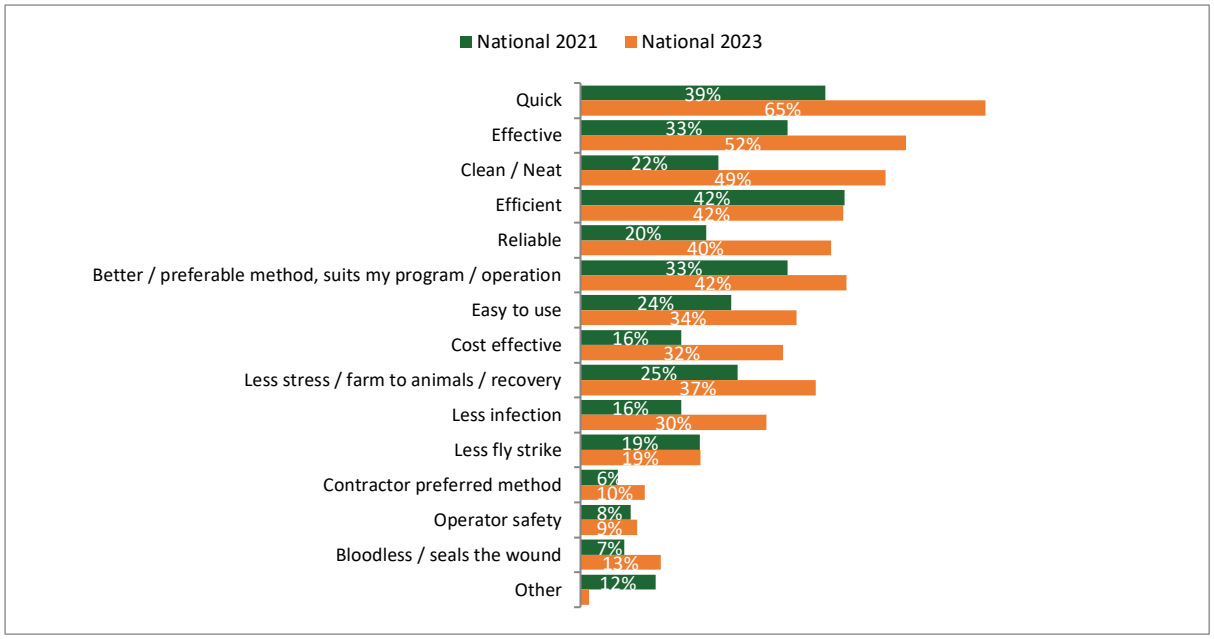
Base: Producers who tail dock male lambs using hot knives n = 969



4.8 Why do you use hot knife to tail dock your male lambs?

Figure 26: Reasons for using cold knife to tail dock ewe lambs

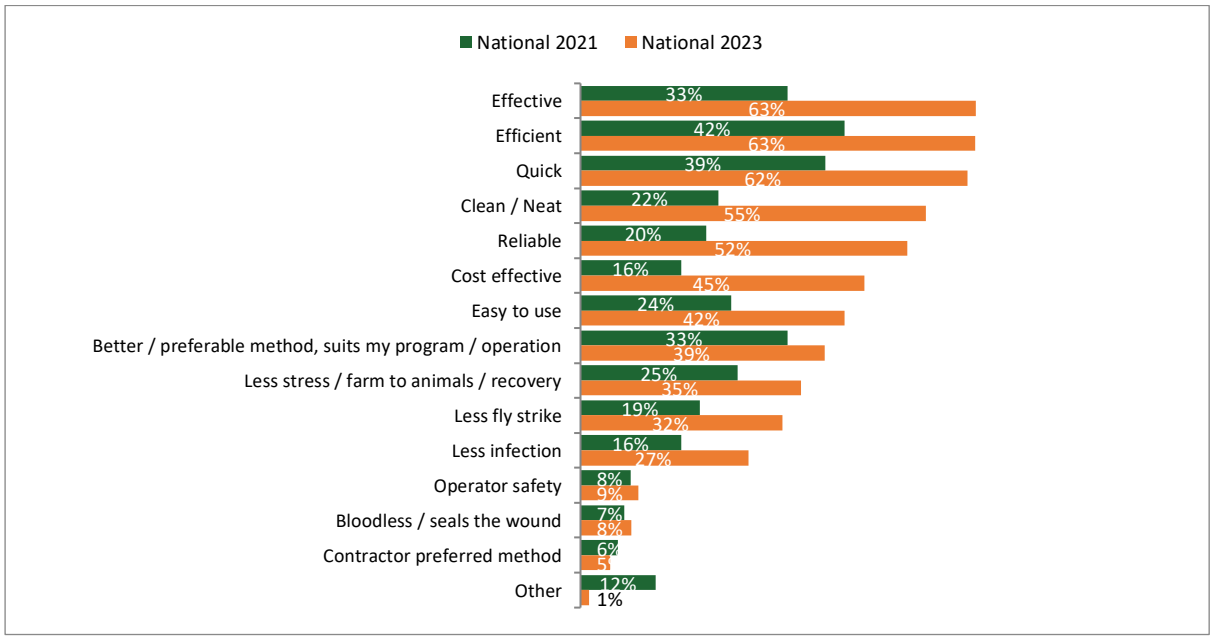
Base: Producers who tail dock ewes using cold knife n = 38



4.3 Why do you use cold knife to tail dock your ewes?

Figure 27: Reasons for using cold knife to tail dock male lambs

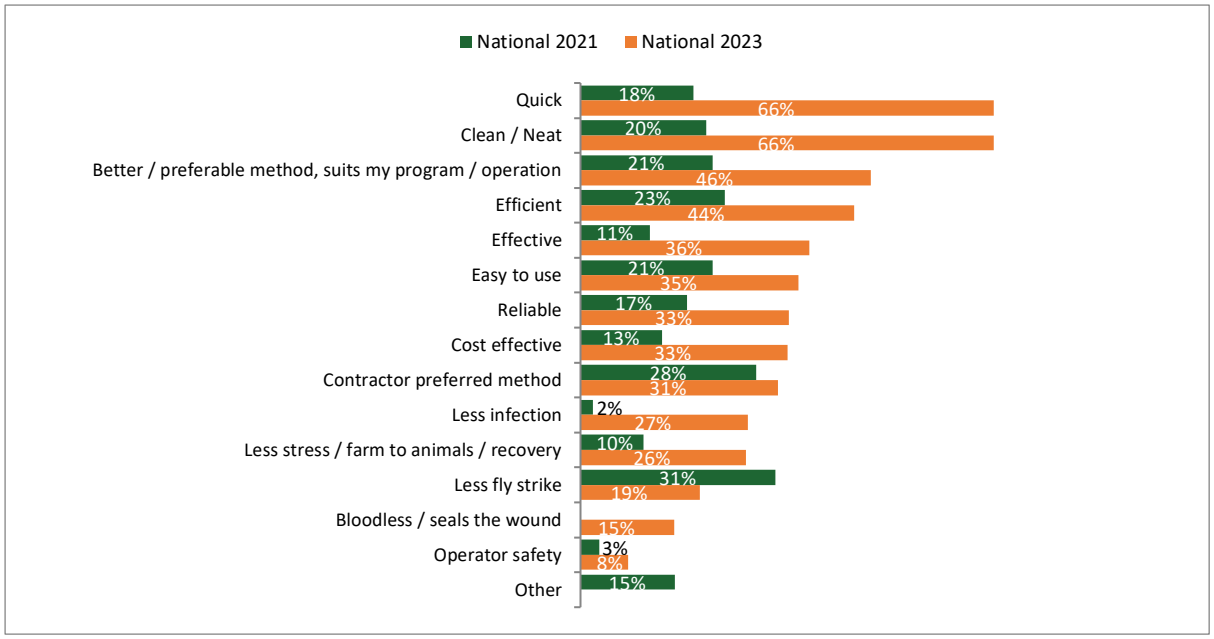
Base: Producers who tail dock male lambs using cold knives n = 38



4.8 Why do you use cold knife to tail dock your male lambs?

Figure 28: Reasons for using shears to tail dock ewe lambs

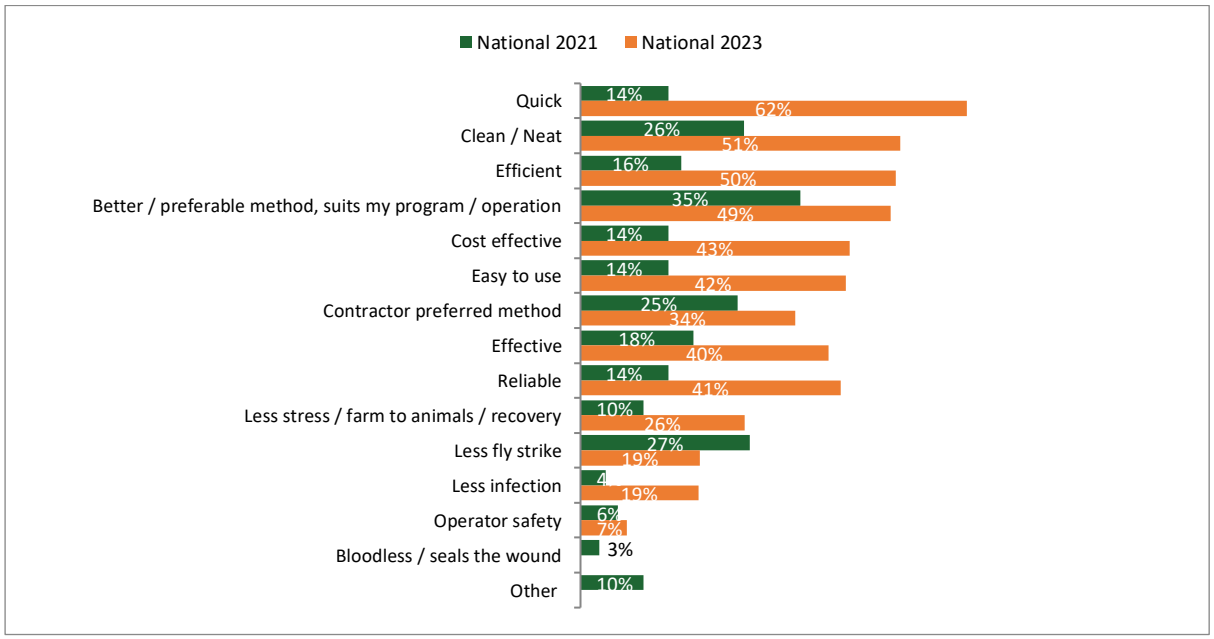
Base: Producers who tail dock ewes using shears n = 26



4.3 Why do you use shears to tail dock your ewes?

Figure 29: Reasons for using shears to tail dock male lambs

Base: Producers who tail dock male lambs using shears n = 22



4.8 Why do you use shears to tail dock your male lambs?

4.5.3 Tail length

Nationally, almost half of producers who tail dock ewe lambs, docked them to three joints (46%). Two joints was the next most common choice at 41%. This is consistent across states and breeds (Figure 30). Nationally, more than half of producers who tail dock male lambs dock them to two joints (47%). Three joints was the next most common choice at 40% (Figure 31).

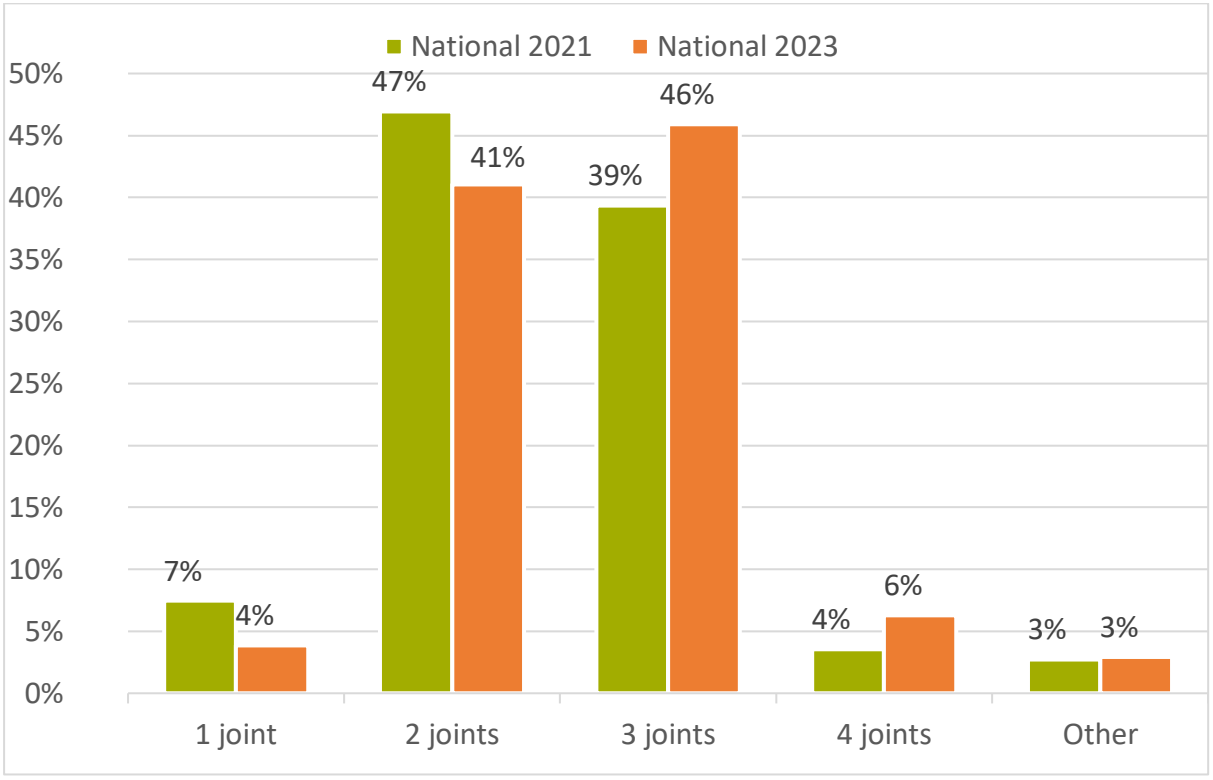
The most common reasons cited for choosing a particular tail length when docking ewe lambs were to protect the genital area (61%) and to provide sun protection (53%) (Figure 32). South Australian producers were significantly less likely to cite specific health reasons (18% compared to 26% nationally). Merino producers were also less likely to cite specific health reasons (23% and 32% respectively) than non-Merino producers. Merino producers were also more likely to say that the contractor decided tail length (7%) than non-merino producers (2%).

When docking male lambs, producers selected a particular tail length to allow tail movement (38%), to provide sun protection (37%) and ease of management (37%) (Figure 33). New South Wales producers were significantly less likely to cite protection of the genital area as reasons (17% compared to 24% nationally). Merino producers were more likely to say that the contractor selected the length (10%) than non-Merino producers (4%).

The primary reason that producers tail docked their lambs was to reduce the risk of flystrike or disease (66%) (Figure 34), a reason more likely to be given by Merino producers (72%) than non-Merino producers (58%).

Figure 30: Length of docked ewe lamb tails

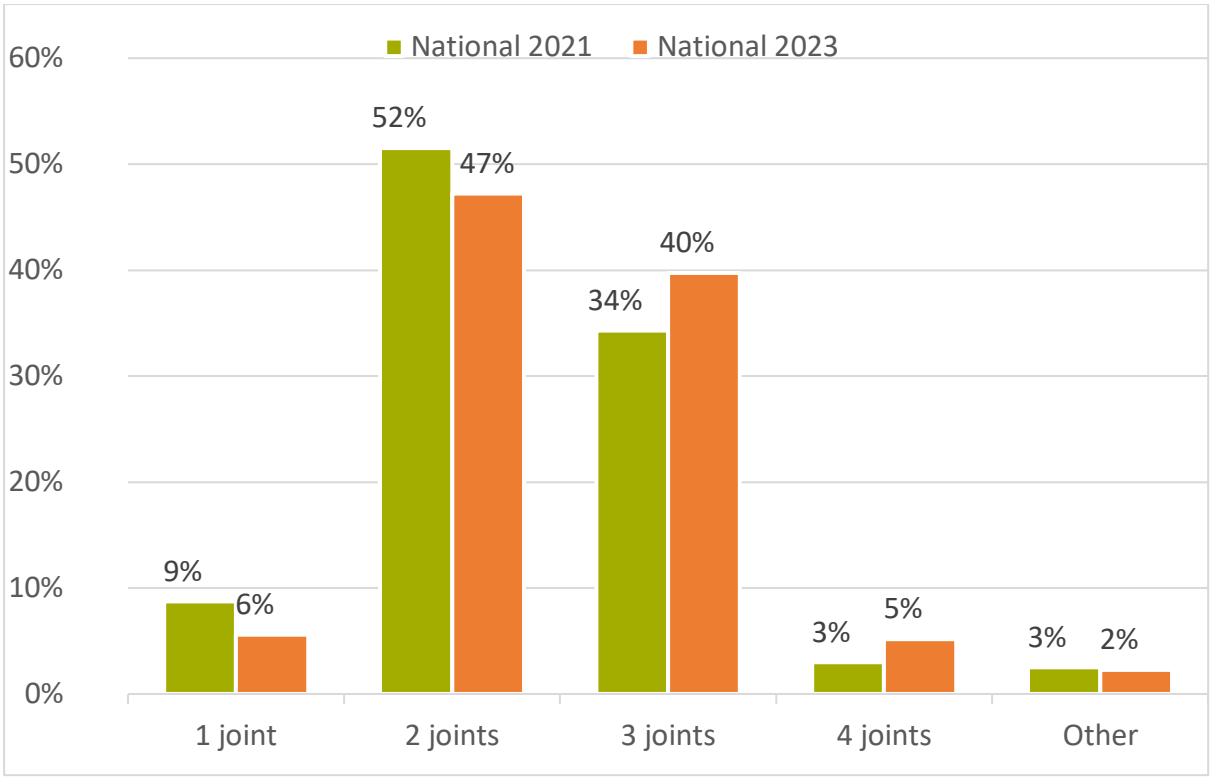
Base: Producers who dock ewe lamb tails n = 1,185



4.4 At what length do you dock ewe lambs' tails?

Figure 31: Length of docked male lamb tails

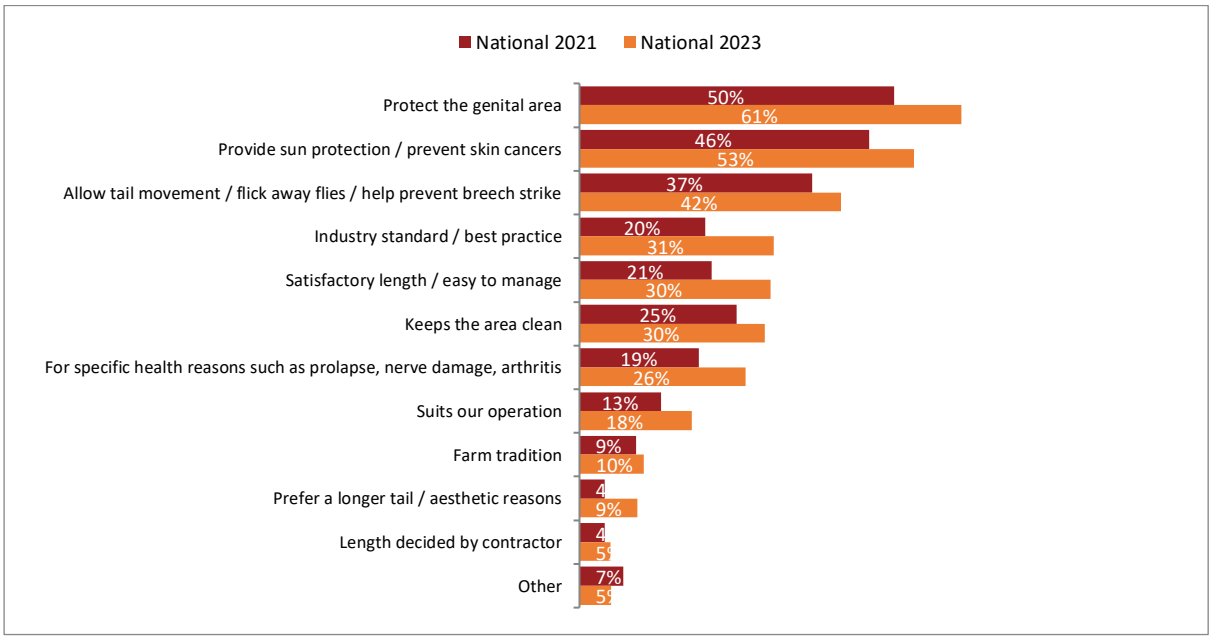
Base: Producers who tail dock male lambs n = 1,184



4.9 At what length do you dock male lambs' tails?

Figure 32: Reason for length of docked ewe lamb tails

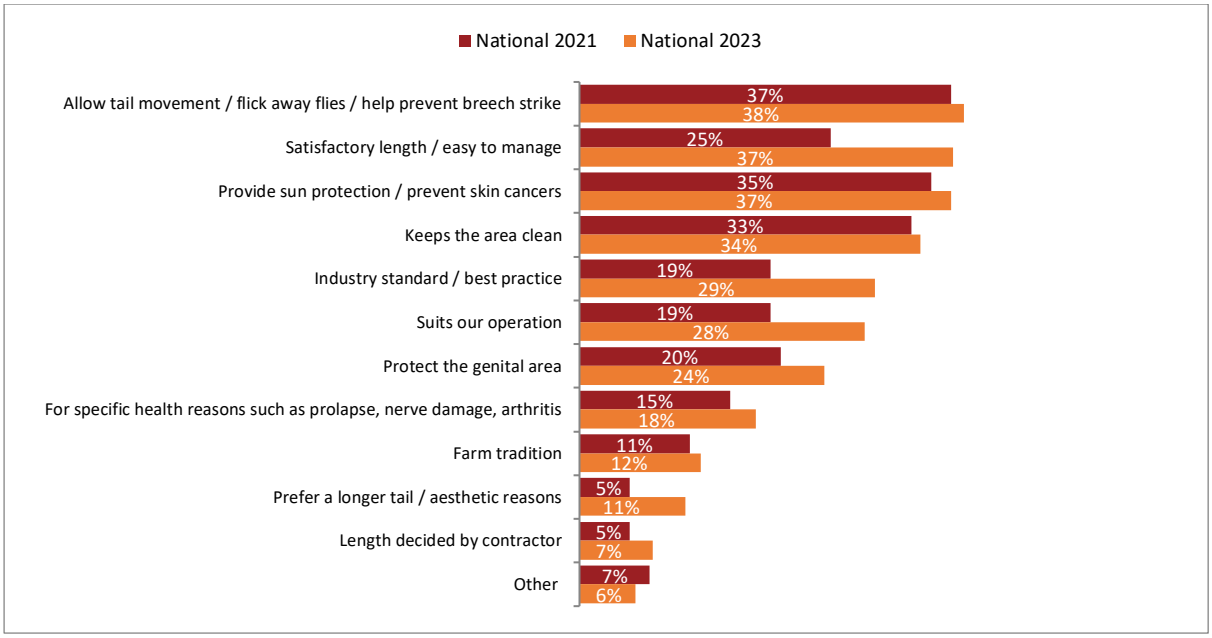
Base: Producers who dock ewe lamb tails n = 1,185



4.5 Why did you choose this tail length for your ewes?

Figure 33: Reason for length of docked male lamb tails

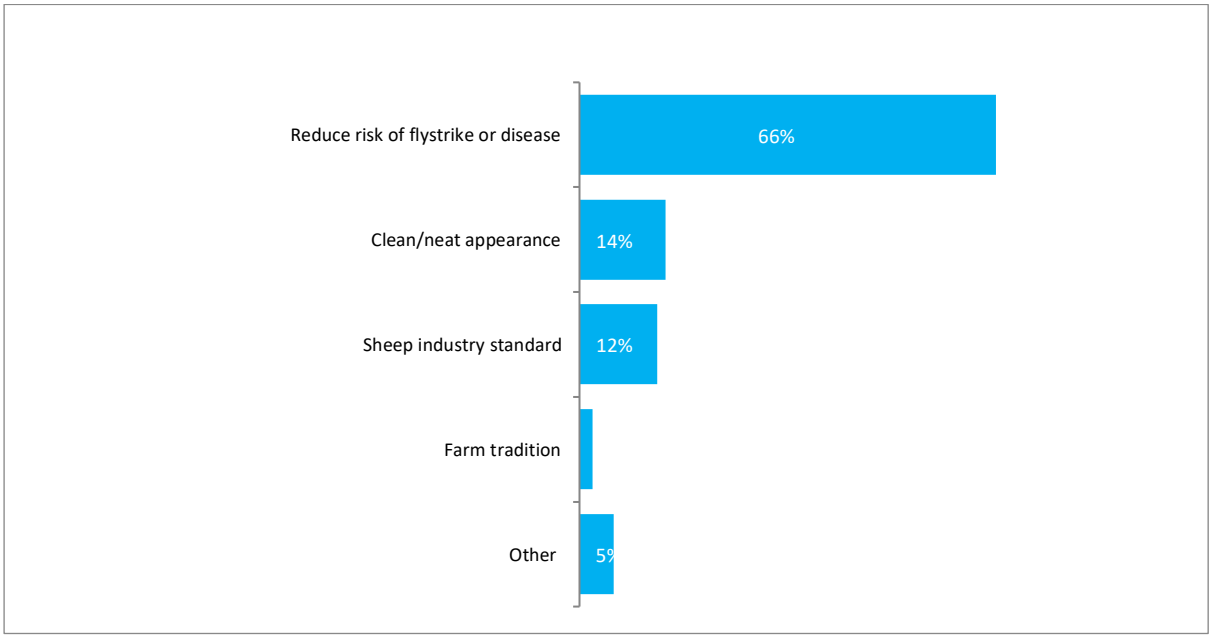
Base: Producers who dock male lamb tails n = 1,184



4.10 Why did you choose this tail length for your male lambs?

Figure 34: Reasons for tail docking lambs

Base: Producers who tail dock ewes or male lambs n = 1,196



4.11 Why do you tail dock either your ewe or male lambs?

4.5.4 Pain management

Nationally, 51% of producers use pain management at ewe lamb tail docking and 50% at male lamb docking (Figure 35). This represented 65% of ewe lambs and 64% of male lambs. Pain management is significantly less likely to be used in Tasmania (31% of producers for ewe lambs and 30% for male lambs) and NSW (44% of producers for ewes and 43% for male lambs). Merino producers were more likely to use pain management (70% ewe lambs and 69% male lambs) compared to non-Merino producers (24% both ewe and male lambs). Producers in South Australia (64% ewe lambs and 63% male lambs) and Western Australia (63% ewe lambs and 61% male lambs) were significantly more likely to use pain management.

While 51% of producers use pain management for ewe tail docking an average of 798 ewe lambs across all methods, adoption of pain management varies by tail docking method (**Figure 36**). When tail docking ewe lambs, fewer producers use pain management for rings (24%). For other methods, pain management is used by the majority of producers: cold knife (75%), hot knife (76%) and shears (90%). When comparing Merino and non-Merino, 86% of Merino producers use pain management for hot knife and 37% use it for rings while non-Merino producers 42% use it for hot knife and 17% for rings.

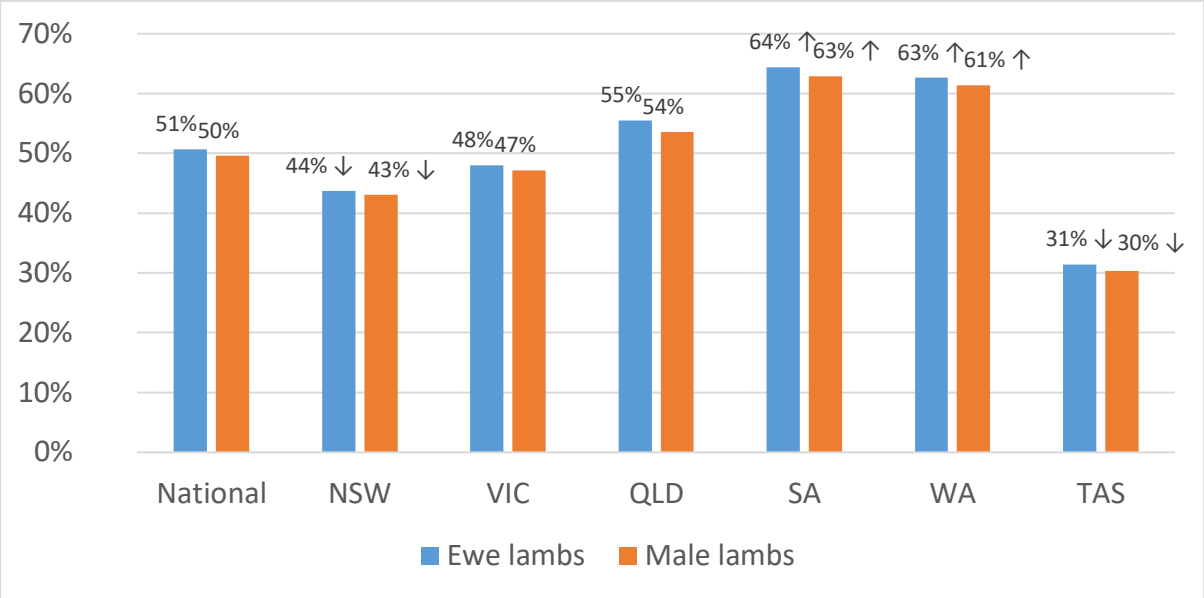
Adoption of pain management for male lambs also varies by tail docking method and is highest for shears (84%) and lowest for rings (24%) (**Figure 37**). 84% of Merino producers use pain management for hot knife compared to 38% of non-Merino producers, and 35% of Merino producers use pain management for rings compared to 18% of non-Merino producers.

Anaesthetic and antiseptic spray at the site was by far the most commonly used pain management method (**Figure 38**). Nationally, it is used by 71% of producers who use pain management products at tail docking. Analgesic oral gels were the second most popular pain relief (18% composed of veterinary prescribed; 9% and non-veterinary prescribed; 9%). Queensland producers were significantly more likely to use non-veterinary prescribed analgesic oral gel (26%), Tasmanians were more likely to use analgesic injections (41%) and anaesthetic injections (46%). Western Australian producers were more likely to use anaesthetic and antiseptic spray (82%) and non-veterinary prescribed analgesic gel (17%). 78% of Merino producers used anaesthetic and antiseptic spray with 13% using analgesic injection and 10% using anaesthetic injection compared to non-Merino producers where 43% used anaesthetic and antiseptic spray, 27% used analgesic injection and 25% used anaesthetic injection.

The specific type of pain management for each method of tail docking ewes is presented in **Table 2**. Products that are inappropriate for a specific method of tail docking are highlighted with an asterisk. These include using an anaesthetic and antiseptic spray at the surgery site (e.g., Tri-Solfen®) for rings or using anaesthetic injection at the surgery site (e.g., Numnuts®) for hot knife. This could reflect a misunderstanding among some producers as to the appropriate pain management type needed for tail docking. It is also possible that some producers may be doing multiple animal husbandry practices at the same time. Even though they were asked what pain management products they used specifically for tail docking, they may have selected products used for other invasive animal husbandry practices that are undertaken and treated at the same time as tail docking. These factors could account for the inappropriate pain management product use.

Figure 35: Use of pain management for tail docking of lambs

Base: Producers who tail docked ewe lambs n = 1,185 Producers who tail docked male lambs n =1,184

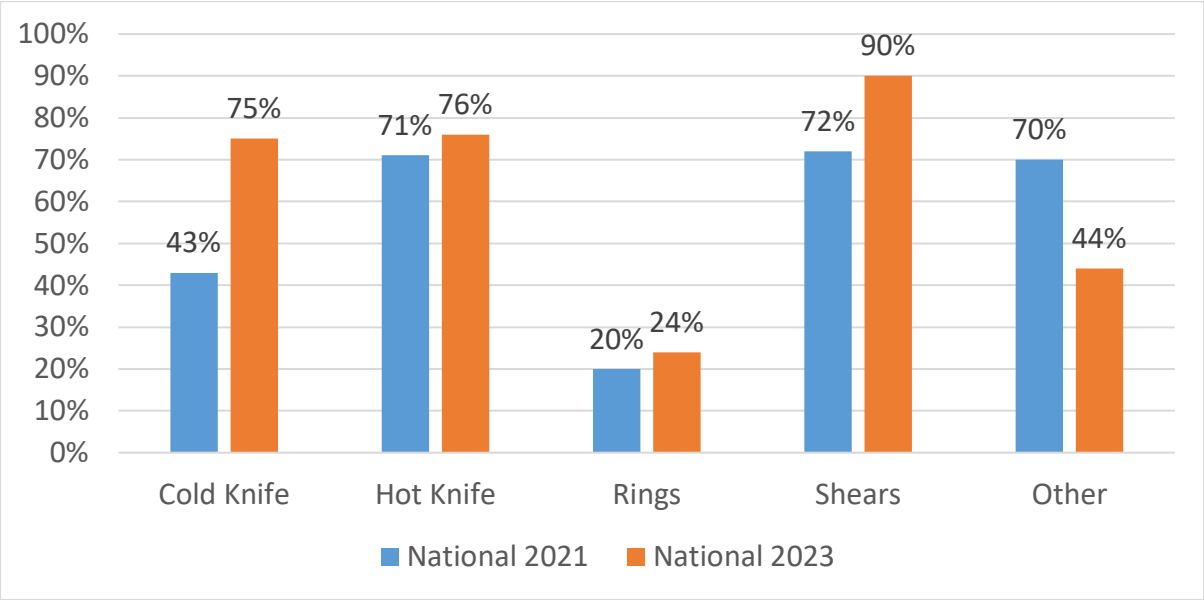


4.12 Did you use any products for pain management for tail docking your ewe lambs in 2023?

4.12.2 Did you use any products for pain management for tail docking your male lambs in 2023?

Figure 36: Use of pain management for tail docking by docking method for ewe lambs

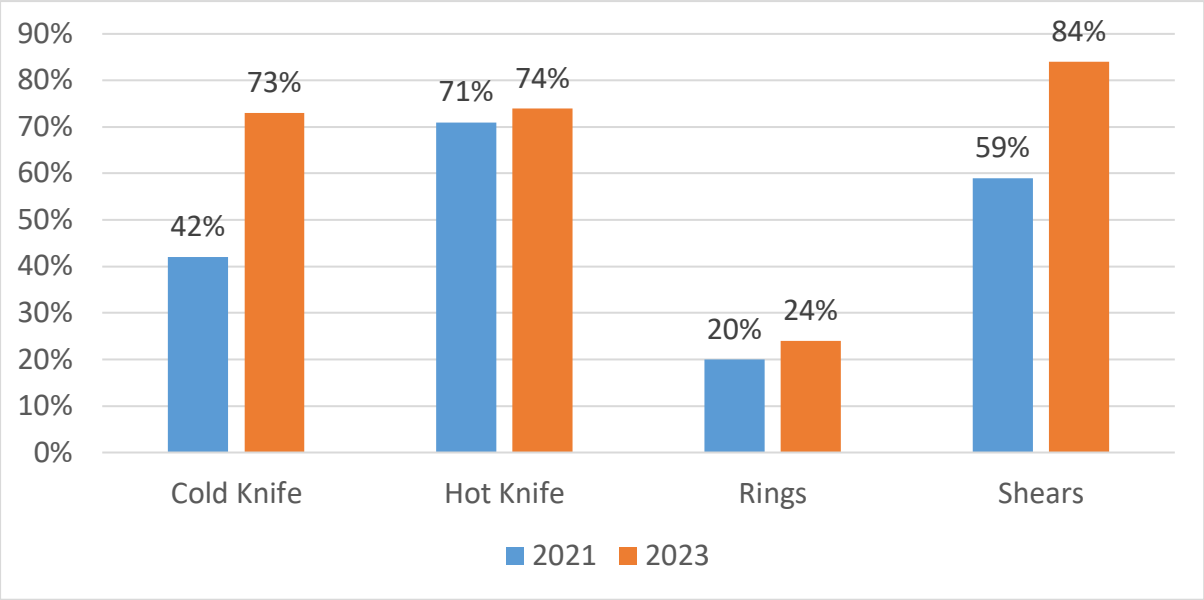
Base: n = 1,185



4.12 Did you use any products for pain management for tail docking your ewe lambs in 2023?

Figure 37: Use of pain management for tail docking by docking method for male lambs

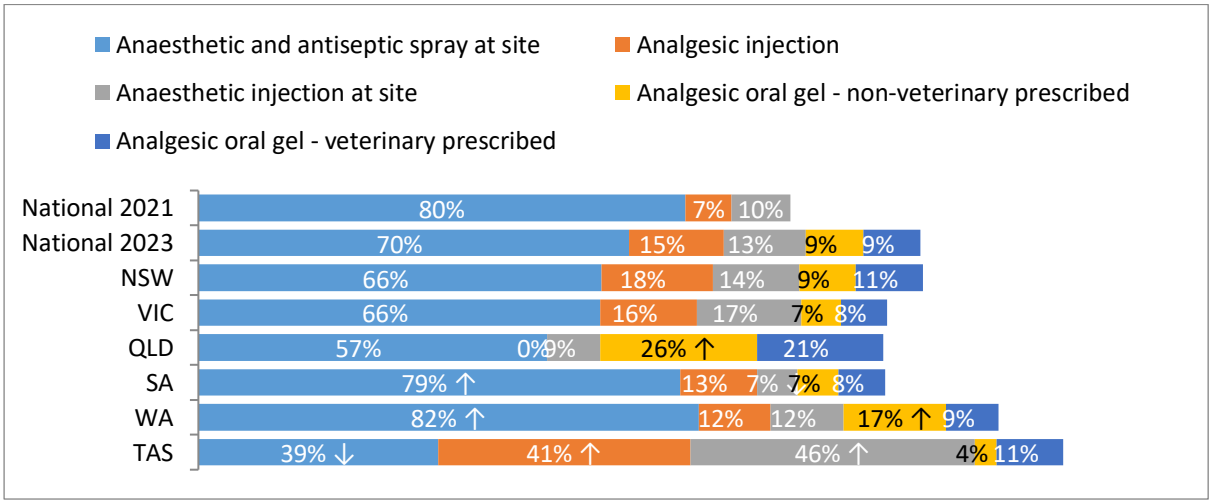
Base: n = 1,913



4.12.2 Did you use any products for pain management for tail docking your male lambs in 2023?

Figure 38: Use of pain management at tail docking

Base: n = 716



4.13 What type of product/s did you use?

NB. Analgesic oral gel was separated into veterinary prescribed and non-veterinary prescribed in 2023

Table 2: Types of pain management products used by tail docking method for ewe lambs

Method of tail docking	Anaesthetic and antiseptic spray at the surgery site (e.g., Tri-Solfen®)	Analgesic / pain killing oral gel (non-veterinary prescribed)	Analgesic / pain killing oral gel (veterinary prescribed)	Anaesthetic injection at the surgery site (e.g., Numnuts®)	Analgesic / pain killing injection (e.g., Meloxicam)
Rubber Ring (n = 469) 24% use pain management (n = 113)	26%*	12%	15%	38%	33%
Hot Knife (n = 683) 76% use pain management (n = 517)	84%	10%	7%	7%*	12%
Cold Knife (n = 38) 75% use pain management (n = 27)	79%	2%	12%	11%	16%
Shears (n = 26) 90% use pain management (n = 23)	79%	17%	9%	-	4%

*Inappropriate pain management product for tail docking method

Similar findings were evident for pain management type when tail docking male lambs with different methods.

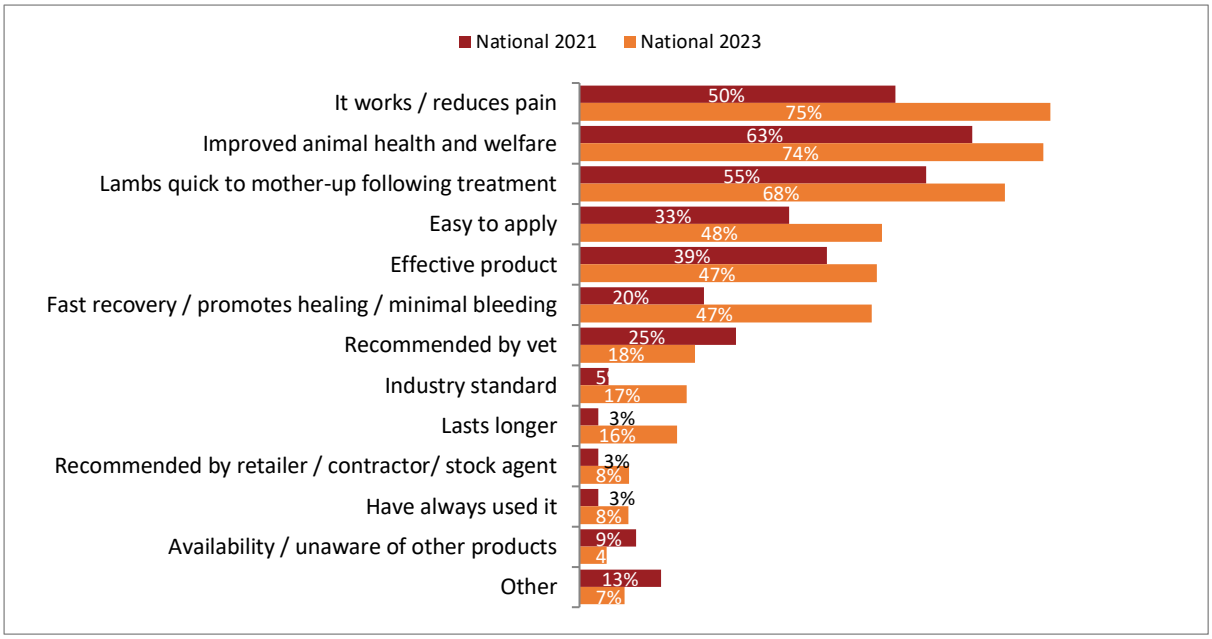
4.5.5 Rationale for pain management method

The most common reasons cited for choosing anaesthetic injections at tail docking of lambs were reduced pain (75%), improved animal health and welfare (74%), and quick mothering-up (68%) (Figure 39). For anaesthetic and antiseptic spray at the surgery site (e.g., Tri-Solfen®), the most common reasons cited were to improve animal health and welfare (88%), ease of application (74%) and effective pain reduction (72%) (Figure 40). Producers who chose analgesic injections said they improved welfare (81%) and were effective for pain reduction (73%) (Figure 41). The most common reasons cited for choosing veterinary prescribed analgesic oral gel were improved animal health and welfare (83%), longer lasting (69%) and pain reduction (68%) (Figure 42). Non-veterinary prescribed oral gel was chosen because it promotes fast recovery and lambs mother up quickly (both 56%).

The most common reason given for not using pain management is that producers do not consider it necessary (45%). 33% said it was not practical or a quick procedure and 25% felt it was too expensive (Figure 43).

Figure 39: Reason for using anaesthetic injection at surgery site

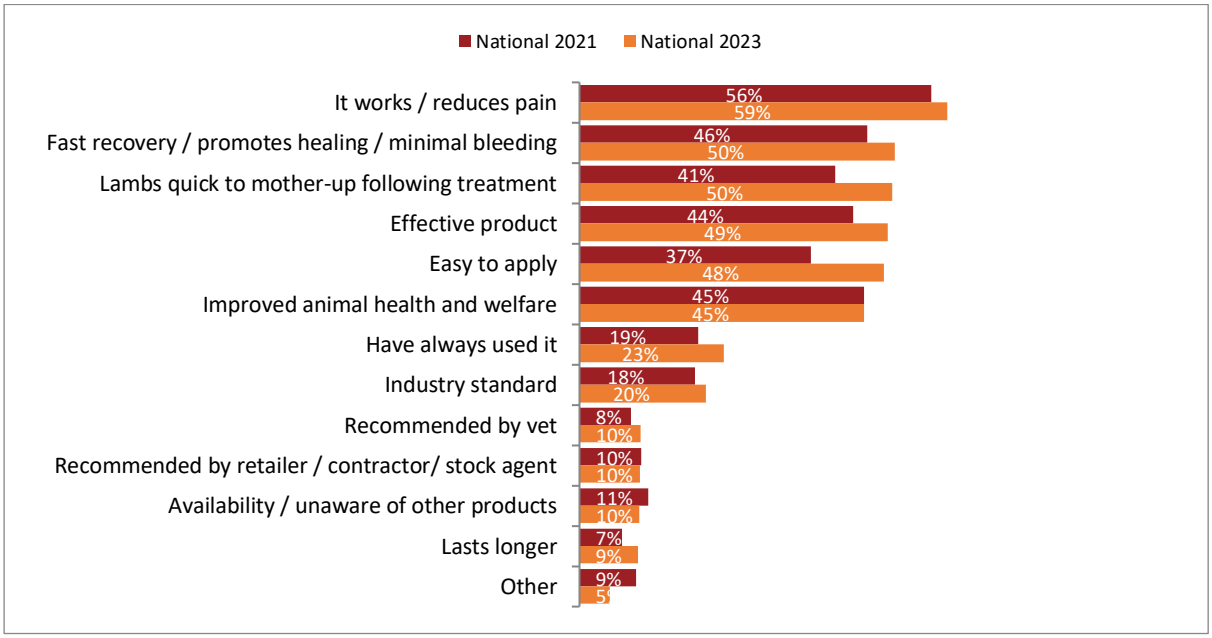
Base: n = 85



4.14 Why did you use this product?

Figure 40: Reason for using anaesthetic and antiseptic spray

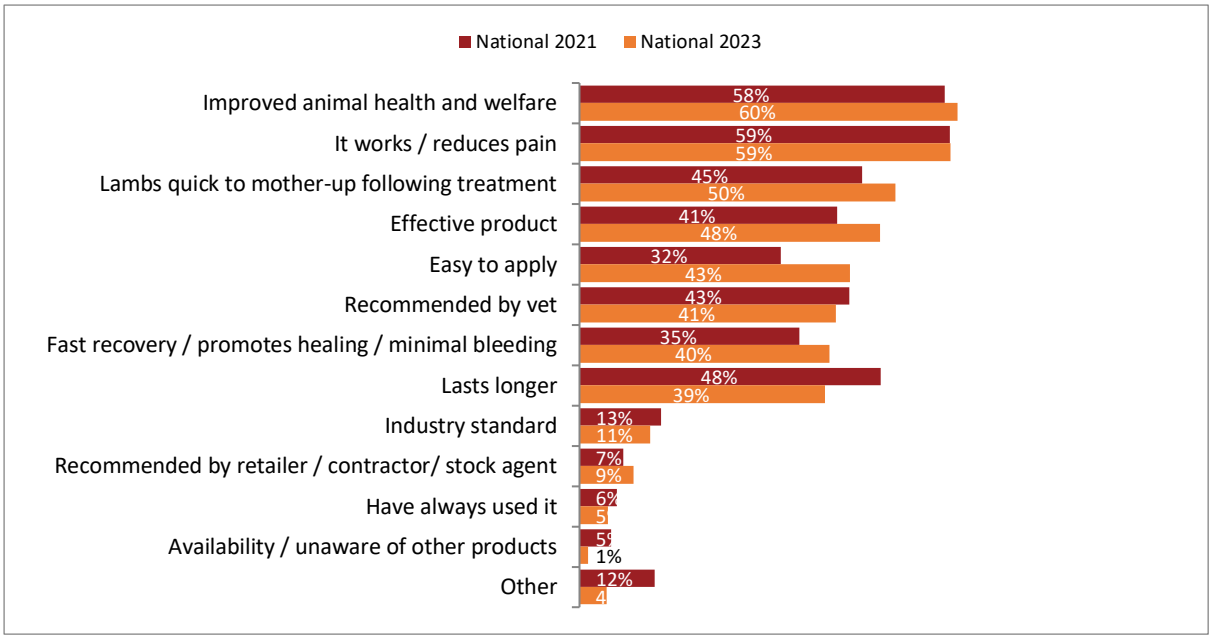
Base: n = 526



4.14 Why did you use this product?

Figure 41: Reason for using analgesic injection

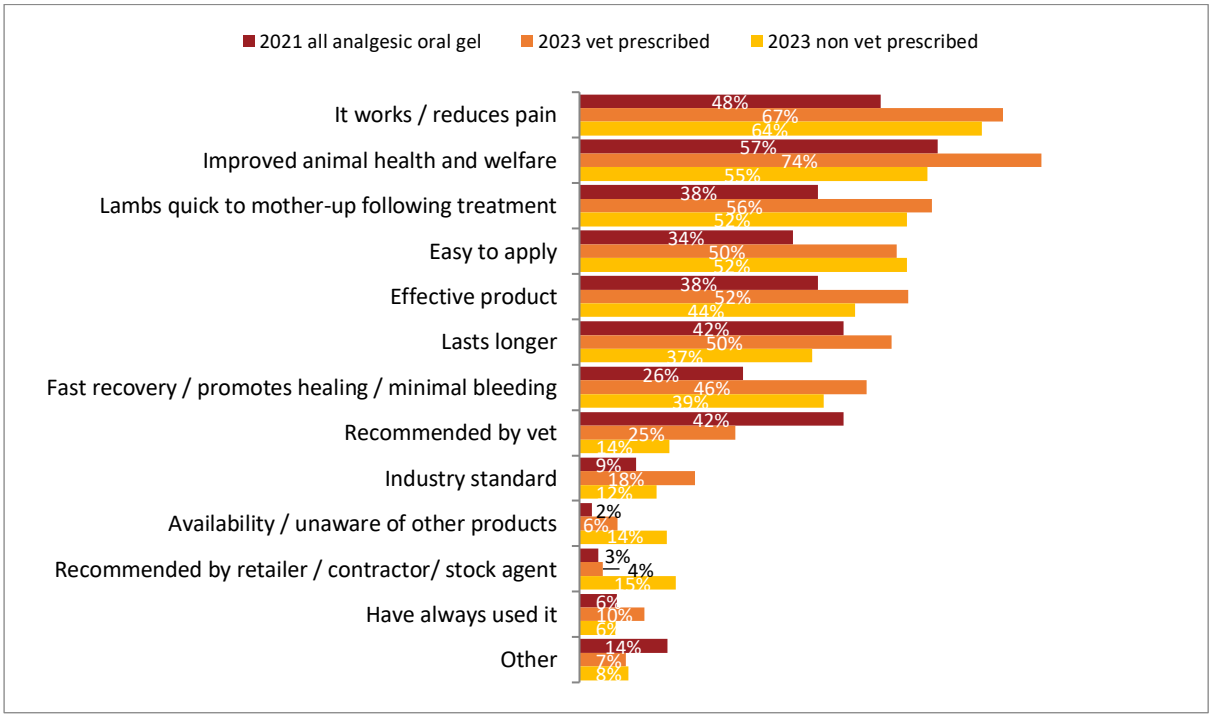
Base: n = 112



4.14 Why did you use this product?

Figure 42: Reason for using analgesic oral gel

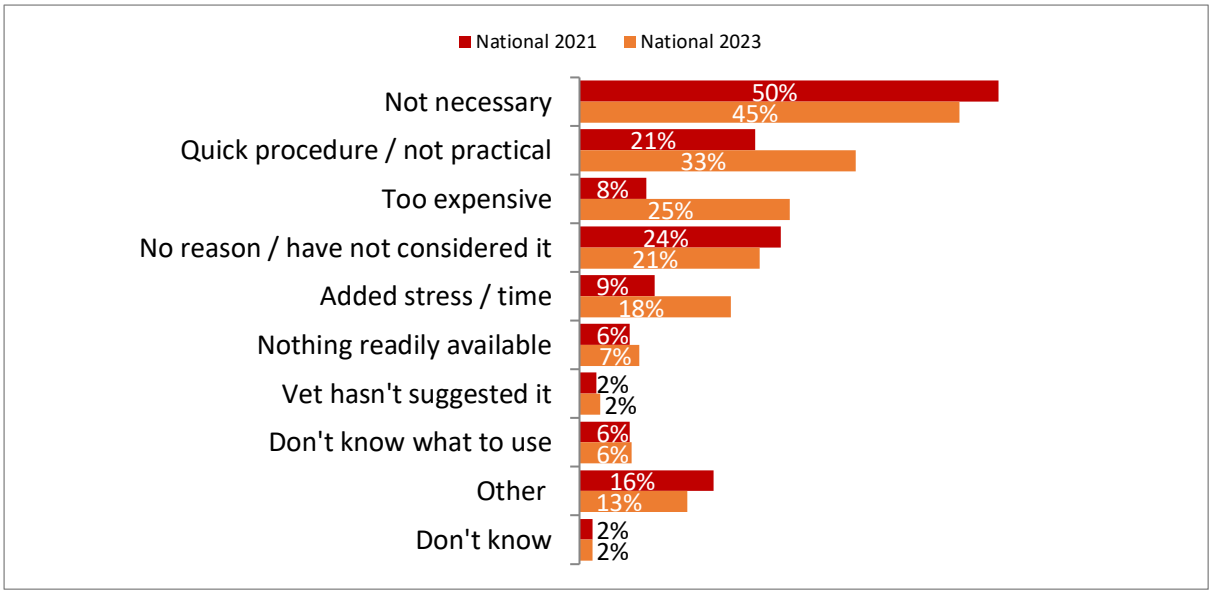
Base: veterinary prescribed n = 62, non-veterinary prescribed n=69



4.14 Why did you use this product?

Figure 43: Reasons against using pain management for tail docking

Base: n = 505



4.15 Why didn't you use pain management?

4.6 Castration

4.6.1 Overview

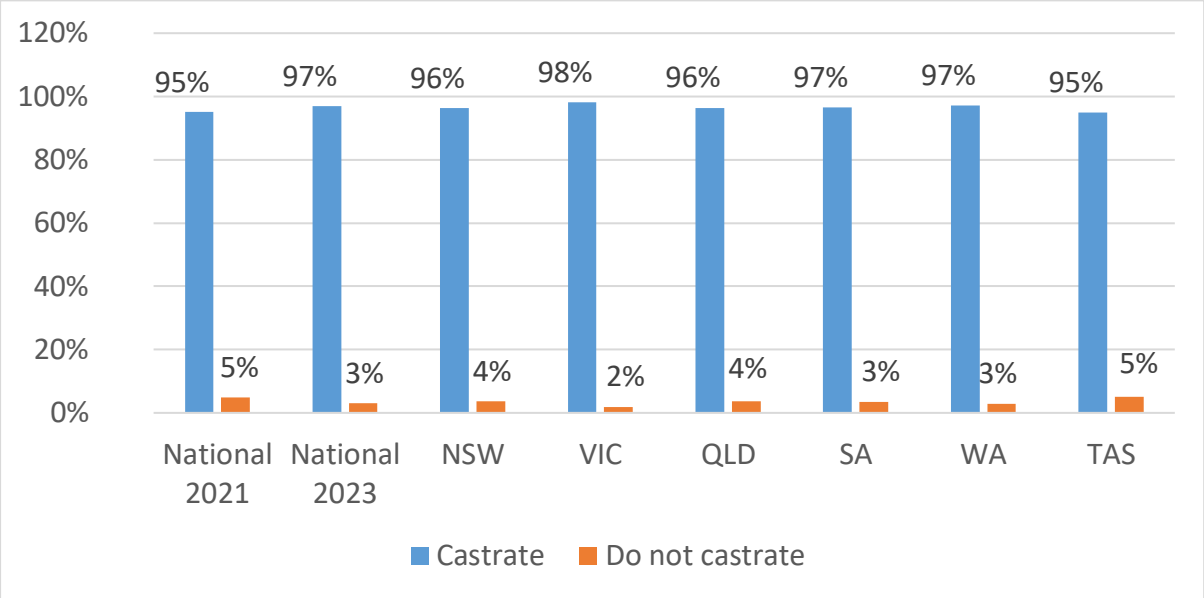
At the national level, 97% of producers castrate their male lambs (Figure 44), with 558 castrated on average (Figure 45). Merino producers were more likely to castrate lambs (98%) than non-Merino producers (95%). The proportion of male lambs that are castrated is 92%.

The primary reasons for castration were to prevent unwanted pregnancies (78%) and market requirements (60%) (Figure 46).

Rubber rings were by far the most common technique (99%) used for castration of male lambs nationally (Figure 47).

Figure 44: Castration of male lambs

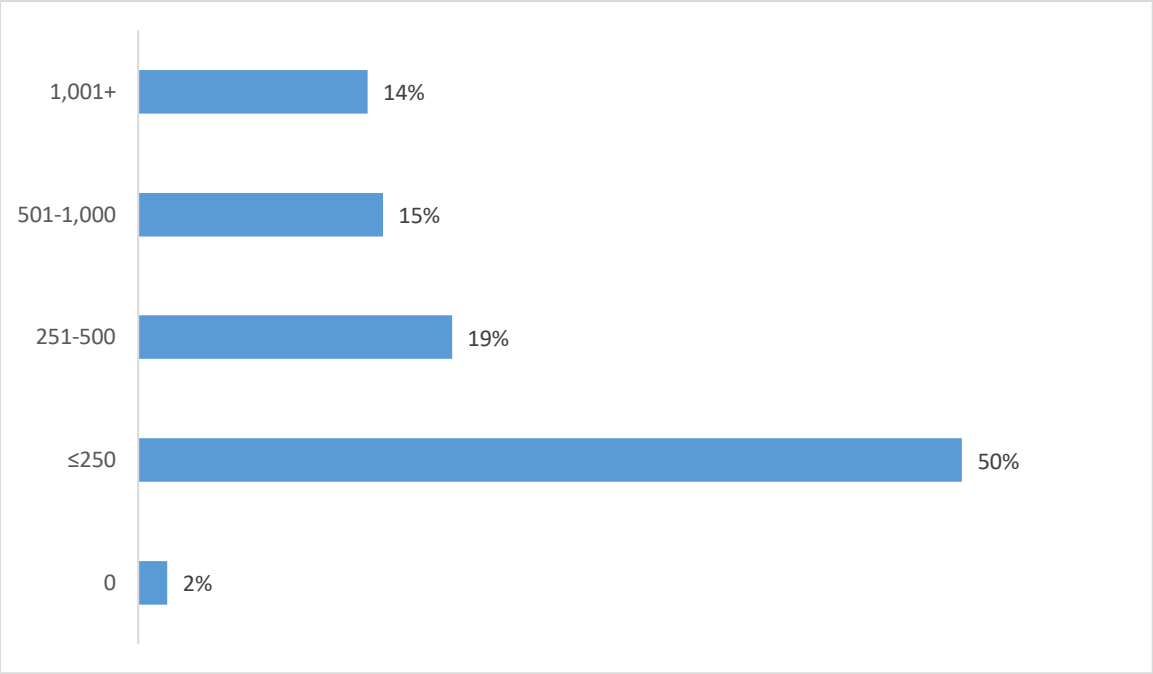
Base: n = 1,268



5.1.0 Do you castrate your male lambs?

Figure 45: Number of male lambs castrated

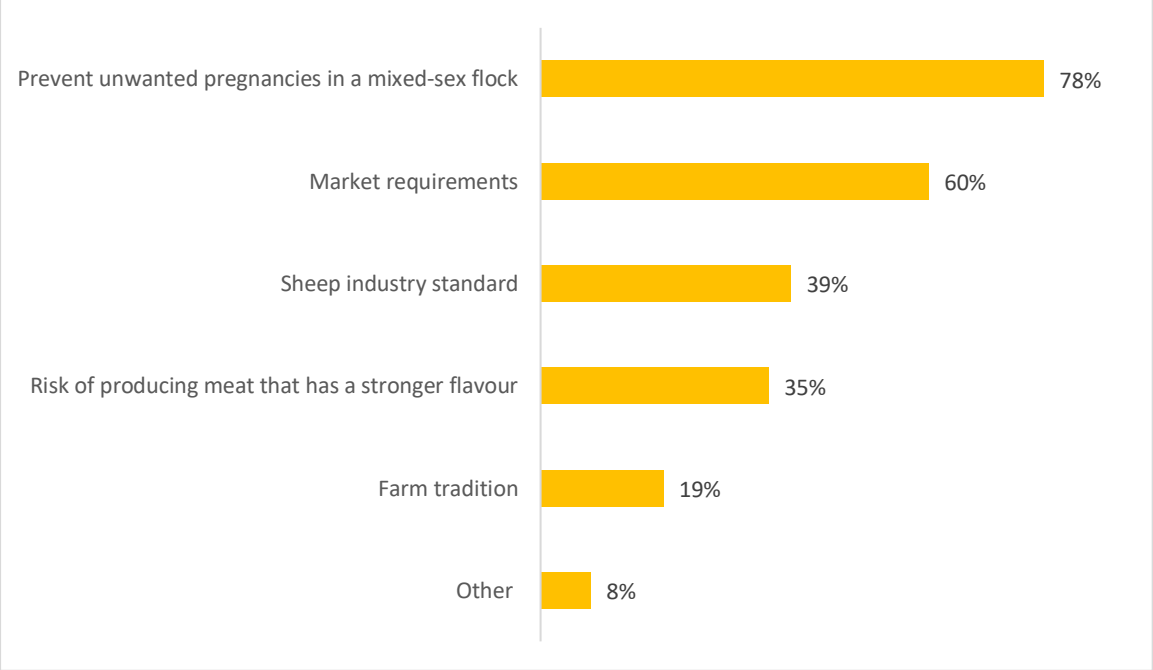
Base: All producers n = 1,231



5.1.01 How many male lambs did you castrate in 2023?

Figure 46: Reason for castrating male lambs

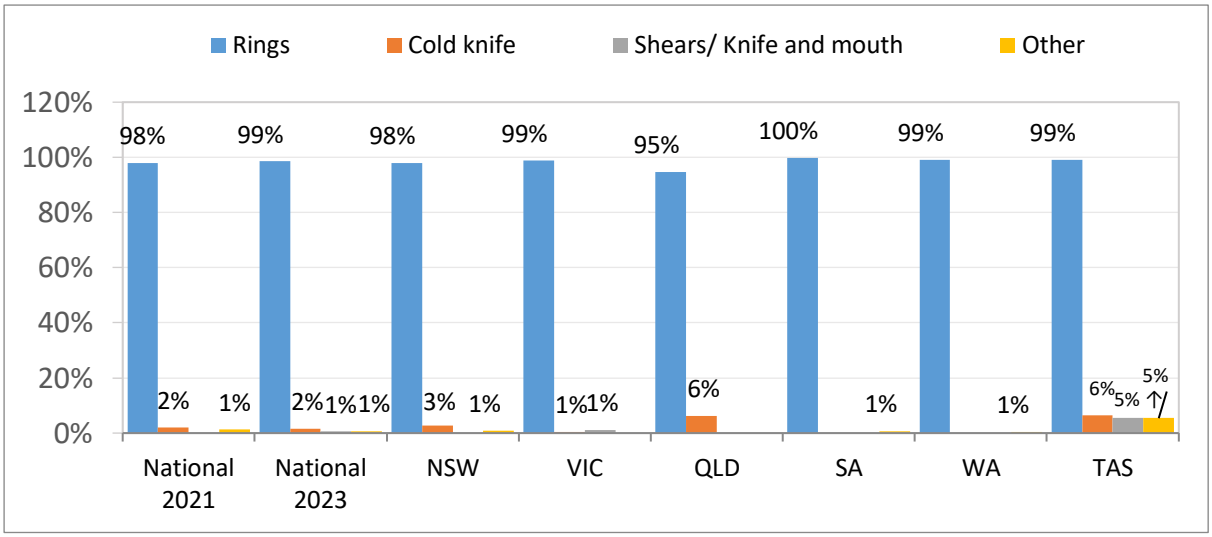
Base: All producers n = 1,231



5.1.1 Why do you castrate your male lambs?

Figure 47: Lamb castration methods by state

Base: Producers who castrate male lambs n = 1,231



5.2 What method do you use to castrate male lambs?

4.6.2 Pain management method

Nationally, 34% of producers used pain management in 2023 when castrating male lambs (Figure 48) which represented 55% of lambs castrated. Merino producers (47%) were more likely to castrate lambs than non-Merino producers (19%).

Use of pain management for castrating male lambs varies by castration method (**Figure 49**), with 33% of producers who practice lamb castration using rings also using pain management. 89% of producers use pain management when castrating with cold knife. Merino producers (46%) were more likely to use pain management to castrate lambs using rings than non-Merino producers (19%).

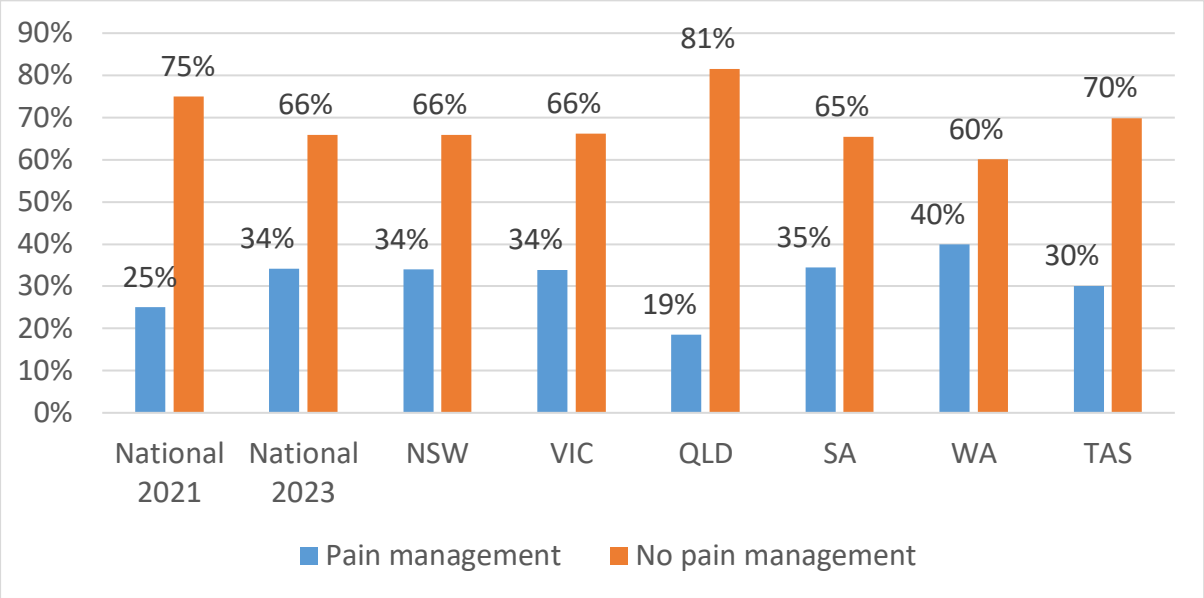
Anaesthetic and antiseptic spray at the site is the primary type of pain management for castration (**Figure 51**). Slightly less than half of producers who use pain management products at castration (44%) use anaesthetic and antiseptic spray at the surgery site Merino producers use anaesthetic and antiseptic spray (52%) and are less likely to use analgesic injection (16%). Conversely, non-Merino producers were less likely to use anaesthetic and antiseptic spray (22%) and more likely to use analgesic injection (33%).

The specific type of pain management for each method of castration is presented at

Table 3. Products that are inappropriate for a specific method of castration are highlighted with an asterisk. These include using an anaesthetic and antiseptic spray at the surgery site (e.g., Tri-Solfen®) for rings or using anaesthetic injection at the surgery site (e.g., Numnuts®) for cold knife or shears / knife and mouth. As with tail docking, this could reflect a misunderstanding around the appropriate pain management type for castration or that multiple animal husbandry practices are conducted and treated at the same time as castration.

Figure 48: Use of pain management for castrating male lambs in 2023

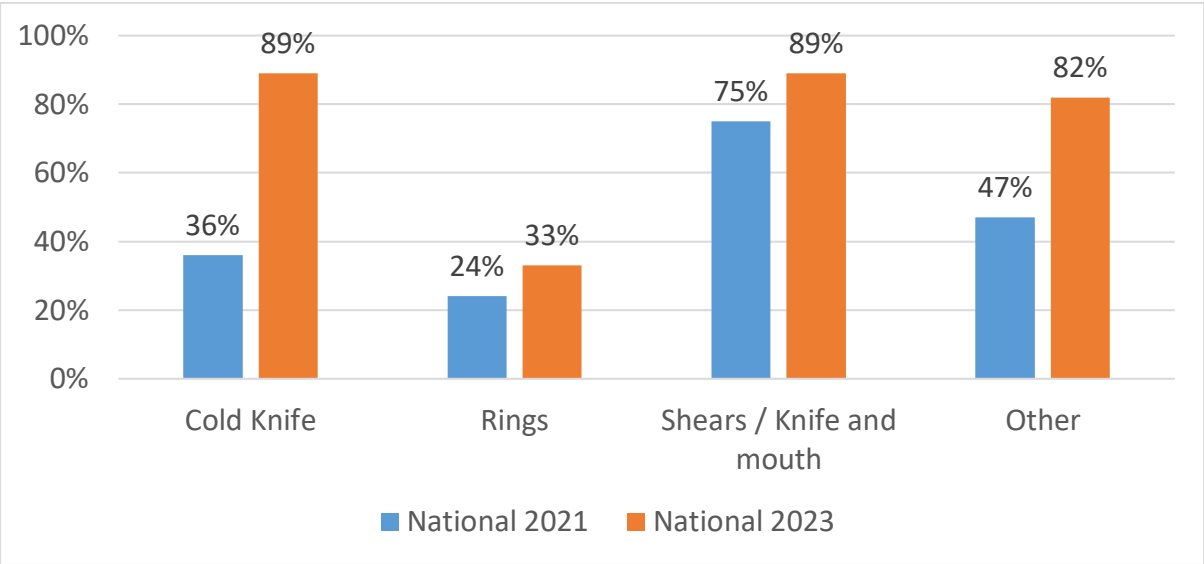
Base: Producers who castrated male lambs in 2021 n = 1,231



5.3 Did you use any products for pain management for castrating your male lambs in 2023?

Figure 49: Use of pain management by castration method

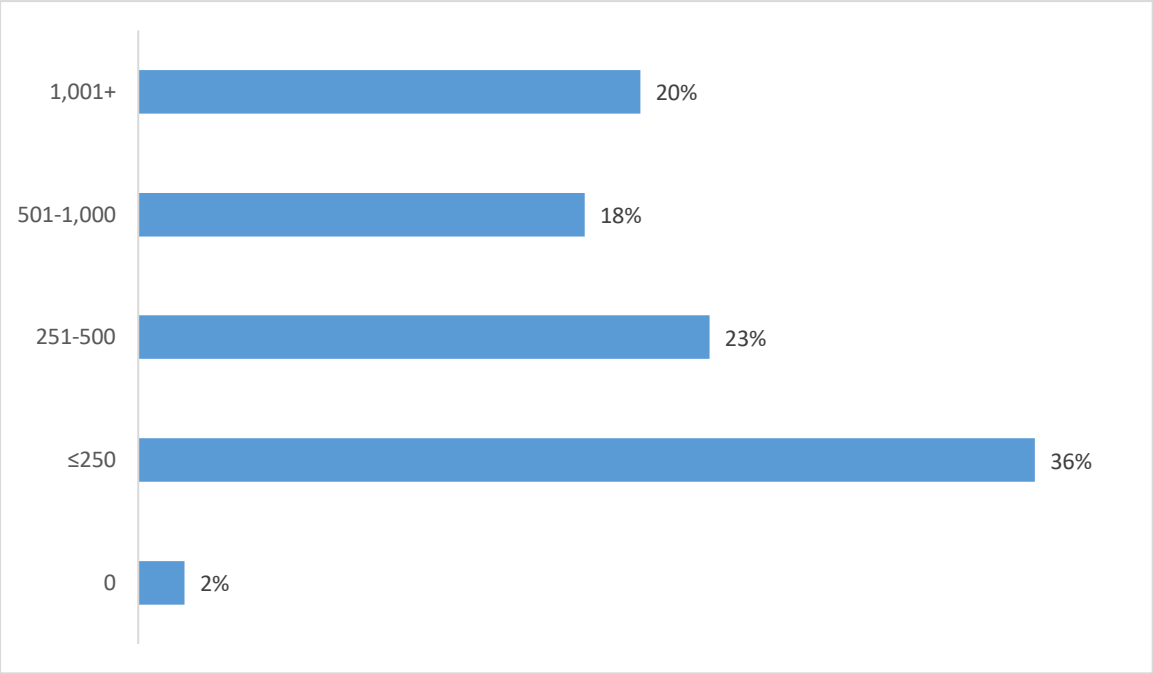
Base: Producers who castrated male lambs n = 1,231



5.3 Did you use any products for pain management for castrating your male lambs in 2023?

Figure 50: Number of male lambs castrated with pain management

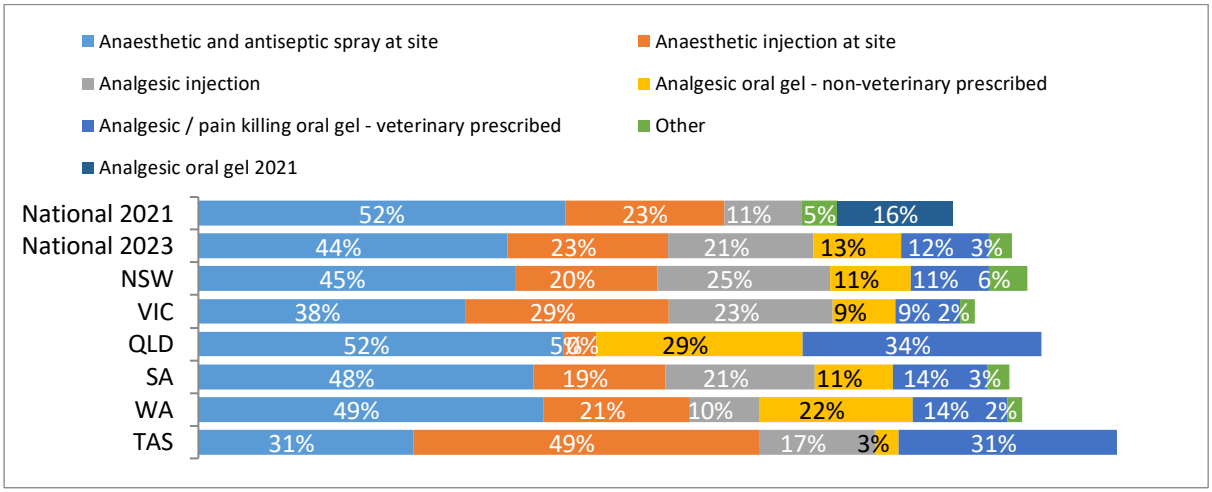
Base: Producers who use pain management n = 494



5.3.1 Of the male lambs you castrated in 2023, how many did you use pain management on for castrating?

Figure 51: Types of pain management products used at castration

Base: Producers who castrate male lambs using pain management products n = 494



5.4 What type of product/s did you use?

NB. Analgesic oral gel was separated into veterinary prescribed and non-veterinary prescribed in 2023

Table 3: Types of pain management products used by castration method

Method of castration	Anaesthetic and antiseptic spray at the surgery site (e.g., Tri-Solfen®)	Analgesic / pain killing oral gel Veterinary prescribed	Analgesic / pain killing oral gel Non veterinary prescribed	Anaesthetic injection at the surgery site (e.g., Numnuts®)	Analgesic / pain killing injection (e.g., Meloxicam)
Rubber Ring (n=1,210) 33% use pain management (n = 475)	42%*	13%	13%	24%	21%
Cold Knife (n = 22) 89% use pain management (n = 20)	88%	18%	-	-*	14%
Shears / Knife and mouth (n = 6) 89% use pain management (n = 5)	100%	35%	-	-*	-

4.6.3 Rationale for pain management method

The most common reasons cited for choosing anaesthetic injections were that it reduces pain (65%), improves animal health and welfare (64%) and lambs quickly mother-up afterwards (56%) (Figure 52).

The most common reasons cited for choosing anaesthetic and antiseptic spray were effective pain reduction (50%), to improve animal health and welfare (35%), and fast recovery (34%) (Figure 53).

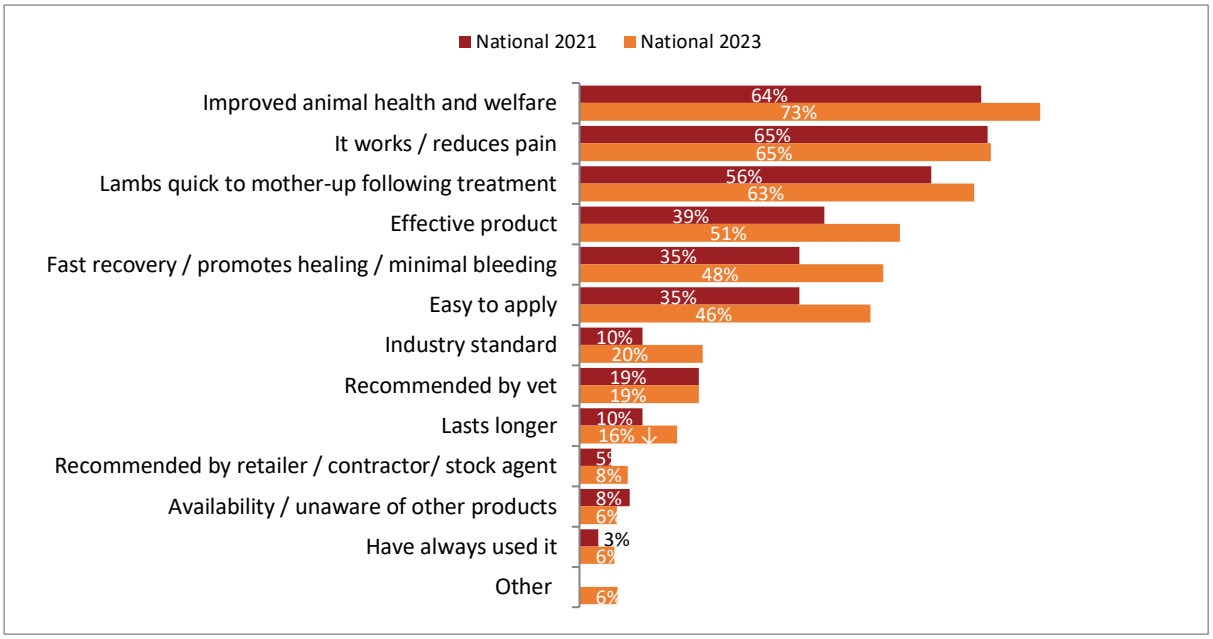
The most common reasons cited for choosing analgesic injections were to improve animal health and welfare (68%) and effective pain reduction (61%) (Figure 54). There was no significant difference in reasons for using this product between states or sheep breeds.

The most common reasons cited for choosing analgesic oral gel were improved animal health and welfare (56%) and pain reduction (52%) (Figure 55).

The most common reason given for not using pain management is that producers do not consider it necessary (45%). 25% of producers cited no particular reason with 19% stating it was not practical or a quick procedure (Figure 56). Queensland producers were significantly less likely to cite that pain management was not available (1%). Merino producers (6%) were less likely to say that pain management was too expensive, compared to non-Merino producers (11%).

Figure 52: Reason for using anaesthetic injection to castrate lambs

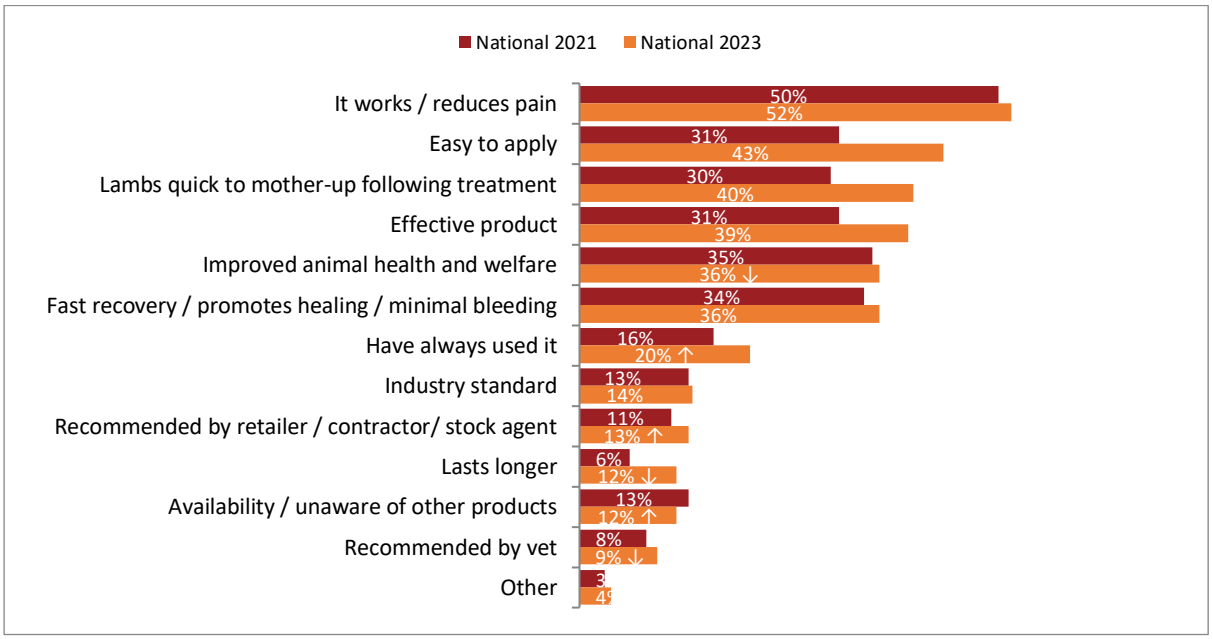
Base: Producers who castrate lambs using anaesthetic injection n = 110



5.5 Why did you use this product?

Figure 53: Reasons for using anaesthetic and antiseptic spray at castration

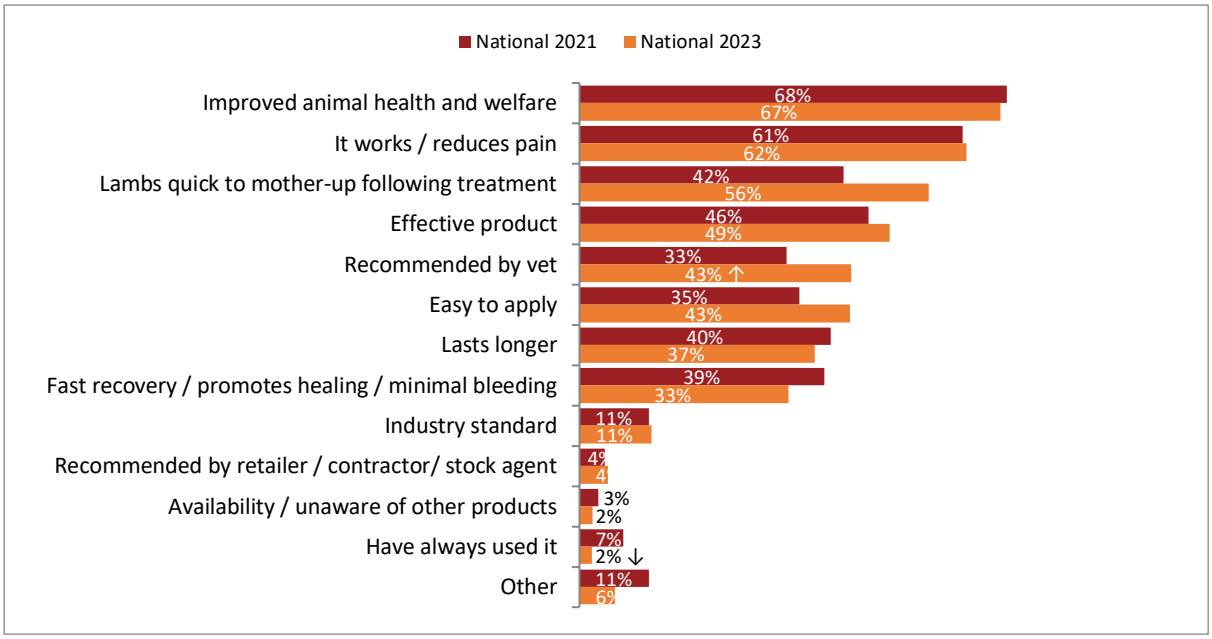
Base: Producers who castrate lambs using anaesthetic and antiseptic spray n = 221



5.5 Why did you use this product?

Figure 54: Reason for choosing analgesic injection at castration

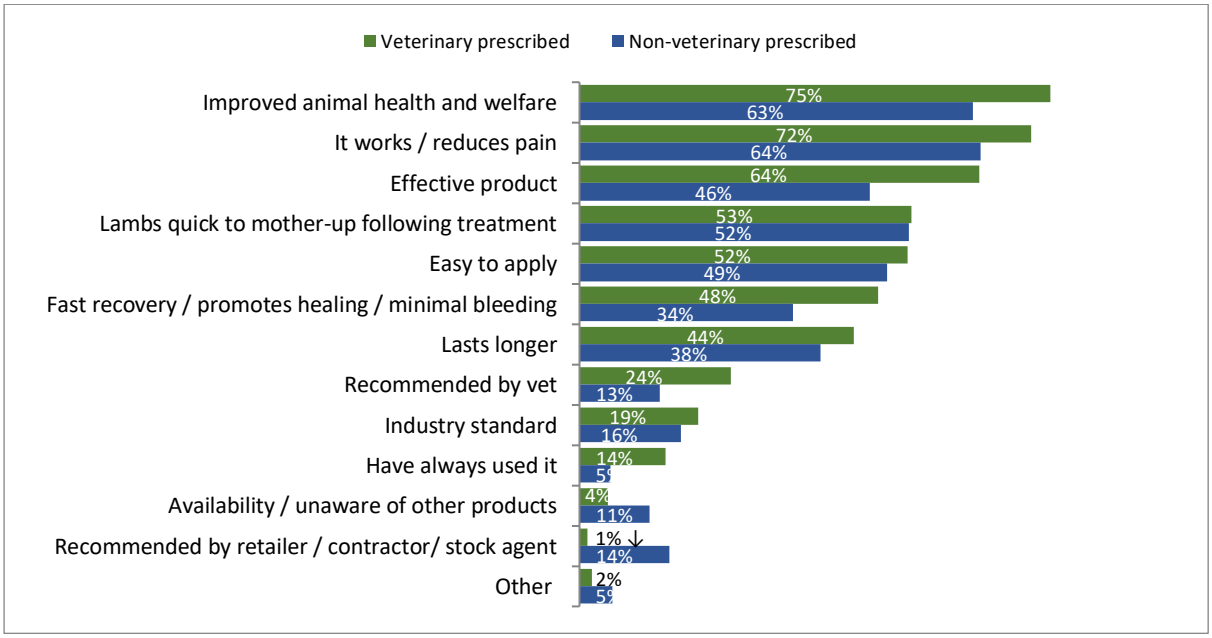
Base: Producers who castrate lambs using analgesic injection n = 99



5.5 Why did you use this product?

Figure 55: Reason for using analgesic oral gel at castration

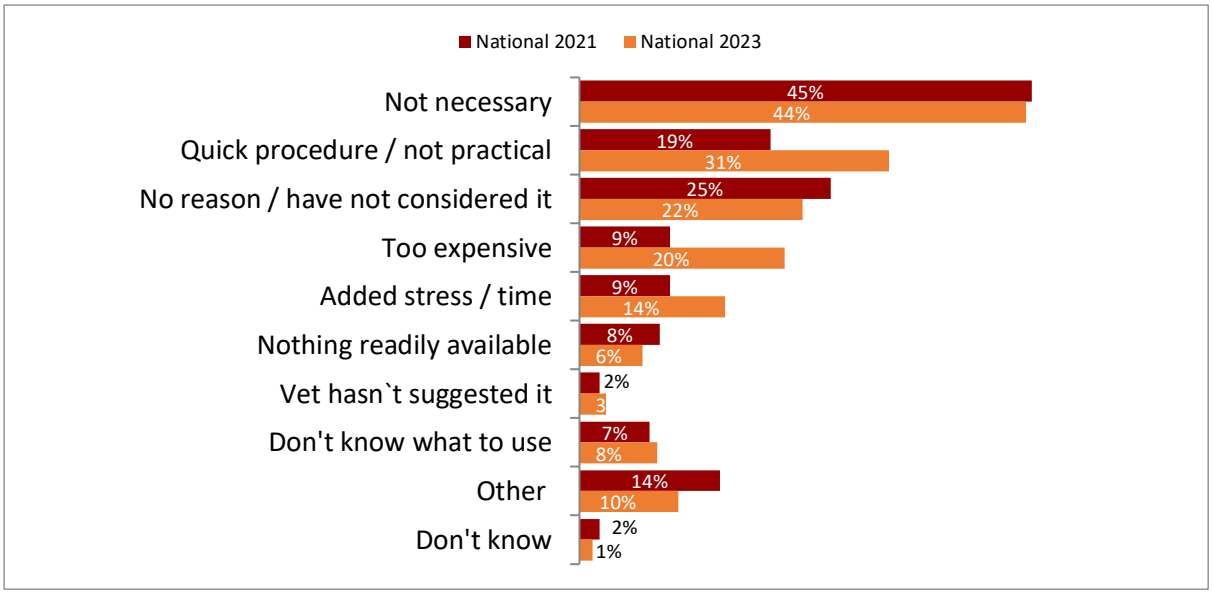
Base: Producers who castrate lambs using analgesic gel (vet prescribed) n = 58, and using analgesic gel (non-vet prescribed) n = 65



5.5 Why did you use this product?

Figure 56: Reason not to use pain management for castration

Base: Producers who did not use pain management products during castration n = 737



5.6 Why didn't you use pain management?

4.7 Mulesing

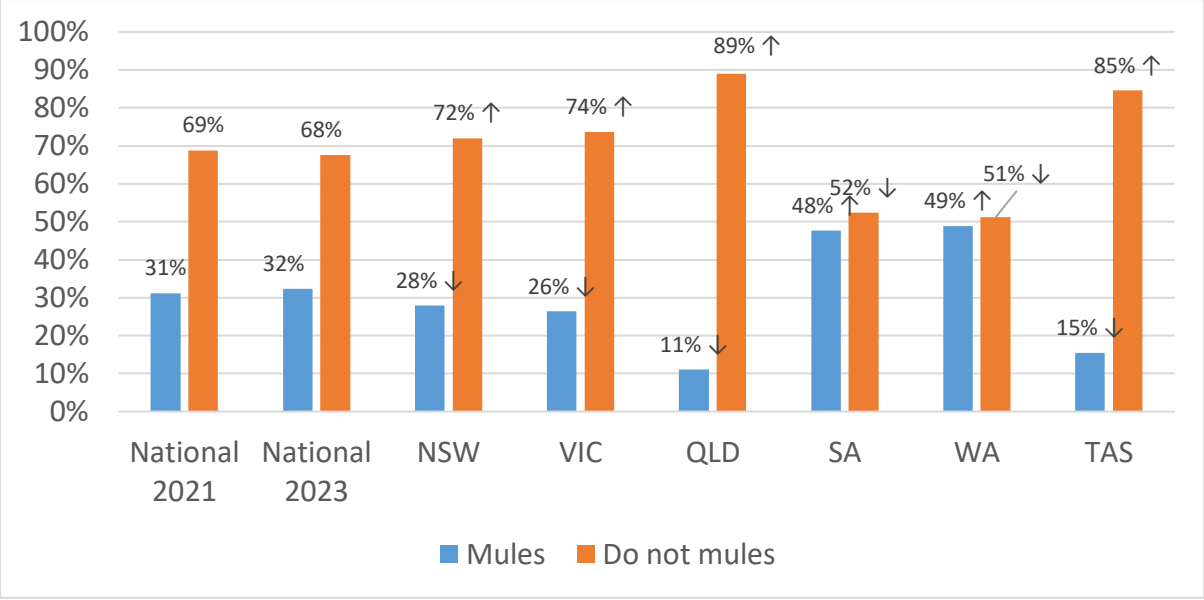
4.7.1 Overview

At the national level, 32% of producers mulesed their ewe lambs in 2023 (Figure 57) with 43% of ewe lambs being mulesed. The practice varies significantly across states, with mulesing less frequent in Tasmania, Queensland, Victoria and New South Wales (15%, 11%, 26% and 28% of producers respectively). South Australian and Western Australian producers were significantly more likely to mules (48% and 49% of producers respectively). Mulesing of ewe lambs is significantly higher among Merino producers (58%) than non-Merino producers (4%) and represents 61% of Merino ewe lambs and 7% of non-Merino ewe lambs being mulesed.

At the national level, 26% of producers mulesed their male lambs (Figure 58) with the proportion of male lambs mulesed at 33%. This varies significantly across states, with mulesing less frequent in Queensland and Victoria (7% and 21% of producers respectively). South Australian and Western Australian producers were significantly more likely to mules (36% and 42% respectively). Mulesing of male lambs is significantly higher among Merino producers (49%) than among non-Merino producers (1%) and represents 54% of Merino male lambs and 1% of non-Merino male lambs being mulesed.

Figure 57: Mulesing of ewe lambs

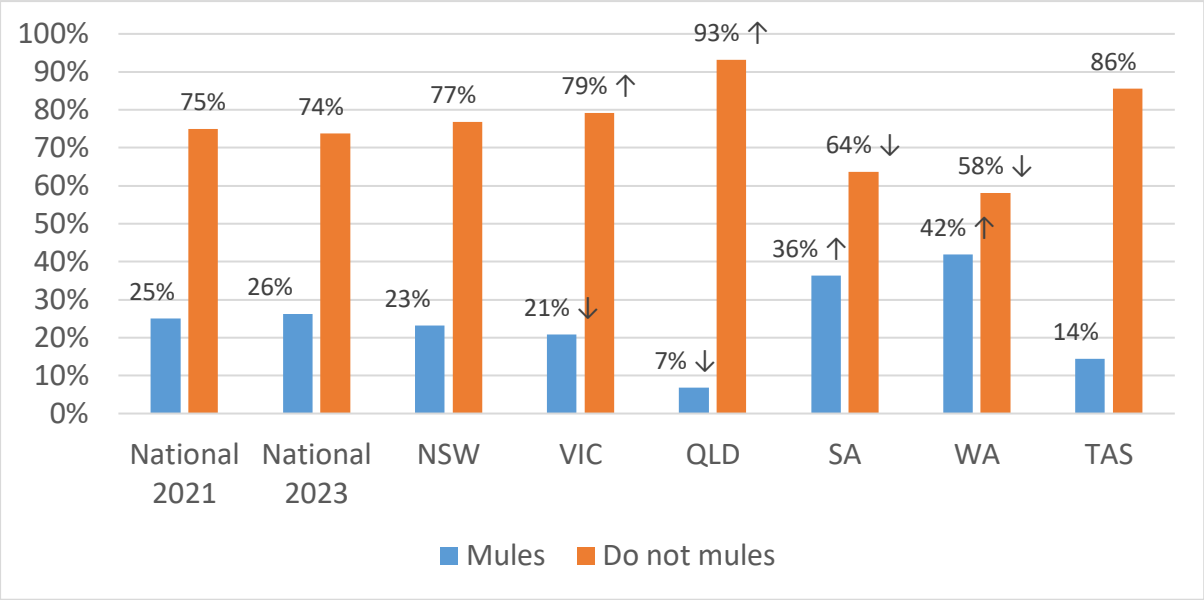
Base: n = 1,268



6.1 Did you mules your ewe lambs in 2023?

Figure 58: Mulesing of male lambs

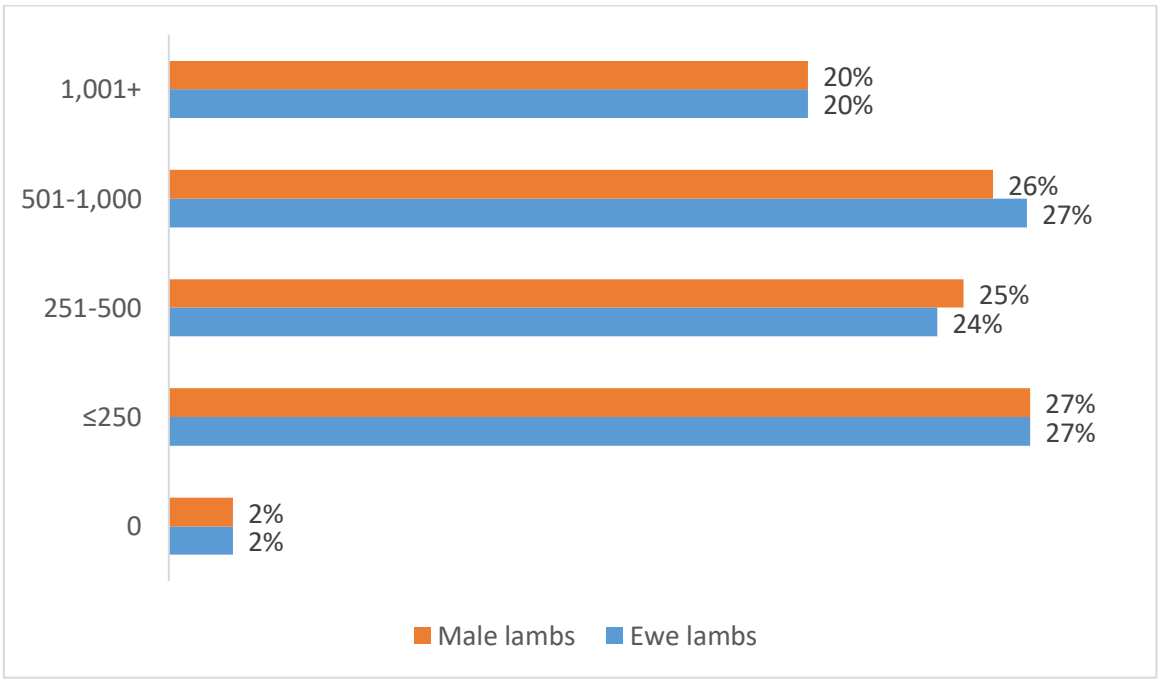
Base: n = 1,268



6.2 Did you mules your male lambs in 2023?

Figure 59: Number of lambs mulesed

Base: Producers who mules ewe lambs n = 511, or male lambs n = 434

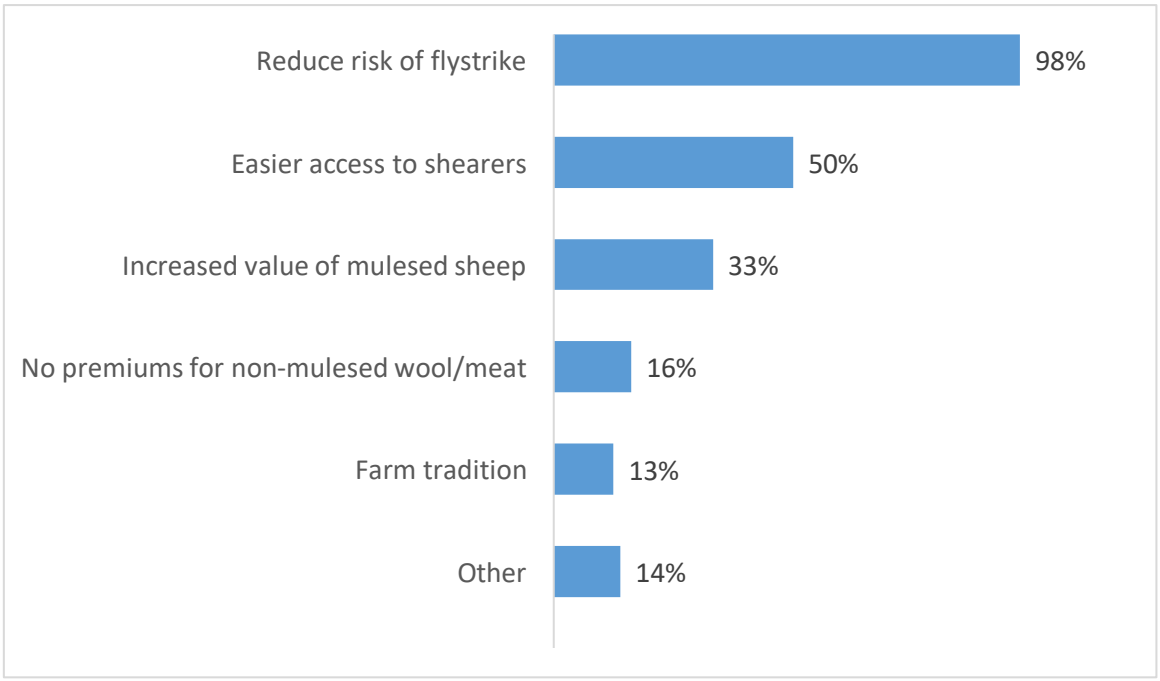


6.1.1 How many ewe lambs did you mules in 2023?

6.2.1 How many male lambs did you mules in 2023?

Figure 60: Reason for mulesing lambs

Base: n = 1,268



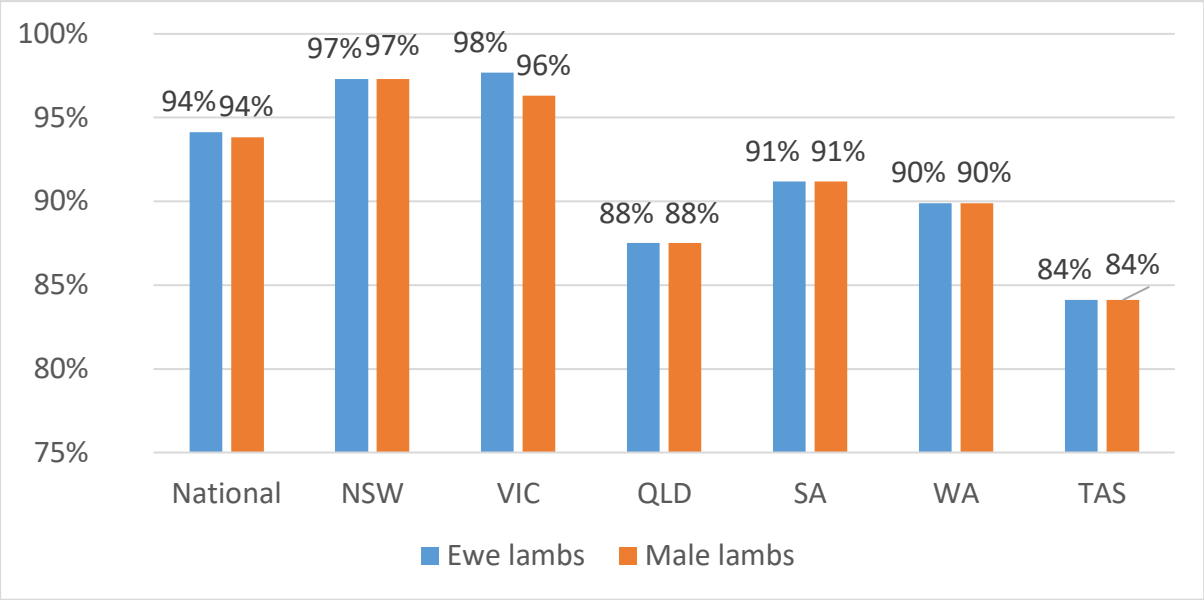
6.2.2 Why do you mules your lambs?

4.7.2 Pain management method

Across Australia, the vast majority of producers who mules use pain management (94% of producers for both ewe lambs and male lambs) (**Figure 61**). The proportion of ewe and male lambs being mulesed with pain management is similar at 95% and 94% respectively. On average, 775 ewe lambs and 771 male lambs were mulesed with pain management (**Figure 62**). Nationally, of producers who use pain management products at mulesing, virtually all (93%) use anaesthetic and antiseptic spray at the surgery site (**Figure 63**).

Figure 61: Use of pain management at mulesing

Base: Producers who mules ewe lambs n = 481, or male lambs n = 434



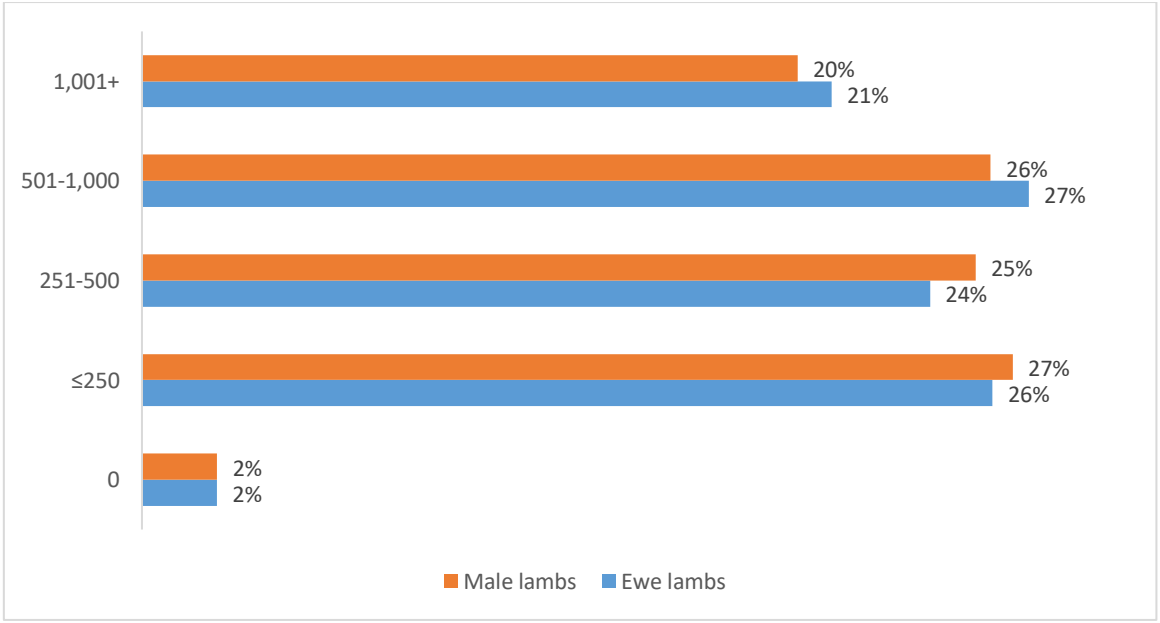
6.3 Did you use any products for pain management for mulesing your ewe lambs in 2023?

6.3.2 Did you use any products for pain management for mulesing your male lambs in 2023?

NB: this data was not split by ewe and male lambs in 2021. Nationally, an average of 92% used pain management in 2021

Figure 62: Number of lambs mulesed with pain treatment

Base: Producers who mules ewe lambs n = 481, or male lambs n = 434

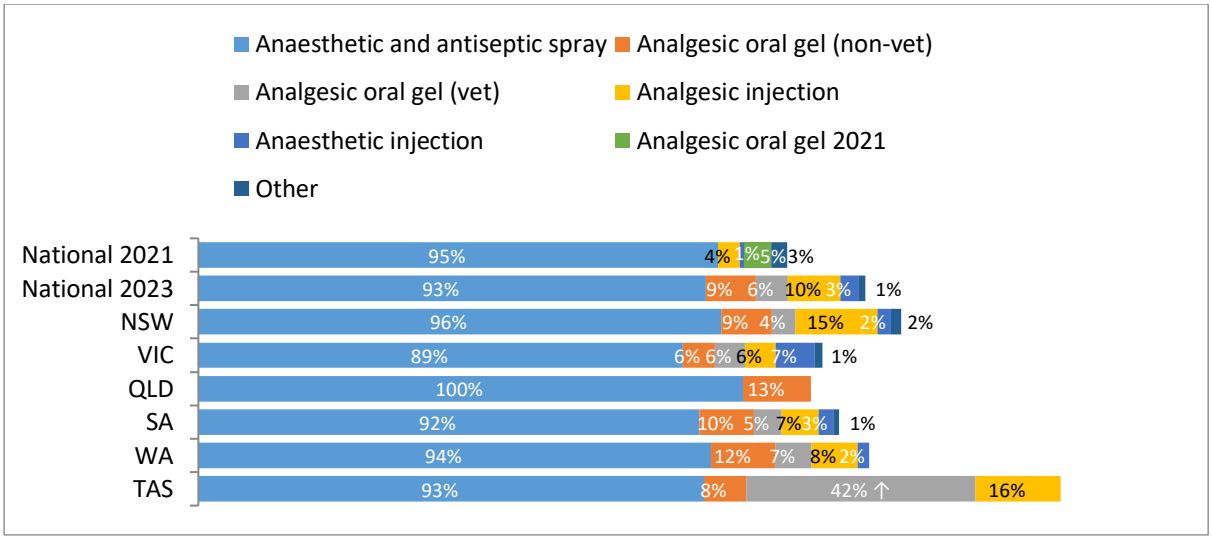


6.3 Did you use any products for pain management for mulesing your ewe lambs in 2023?

6.3.2 Did you use any products for pain management for mulesing your male lambs in 2023?

Figure 63: Types of pain management used at mulesing

Base: Producers who mules lambs using pain management products n = 407



6.4 What type of product/s did you use?

NB. Analgesic oral gel was separated into veterinary prescribed and non-veterinary prescribed in 2023

4.7.3 Rationale for pain management method

The most common reasons cited for choosing anaesthetic and antiseptic spray were effective pain reduction (64%), fast recovery (57%) and effectiveness (55%) (**Figure 64**).

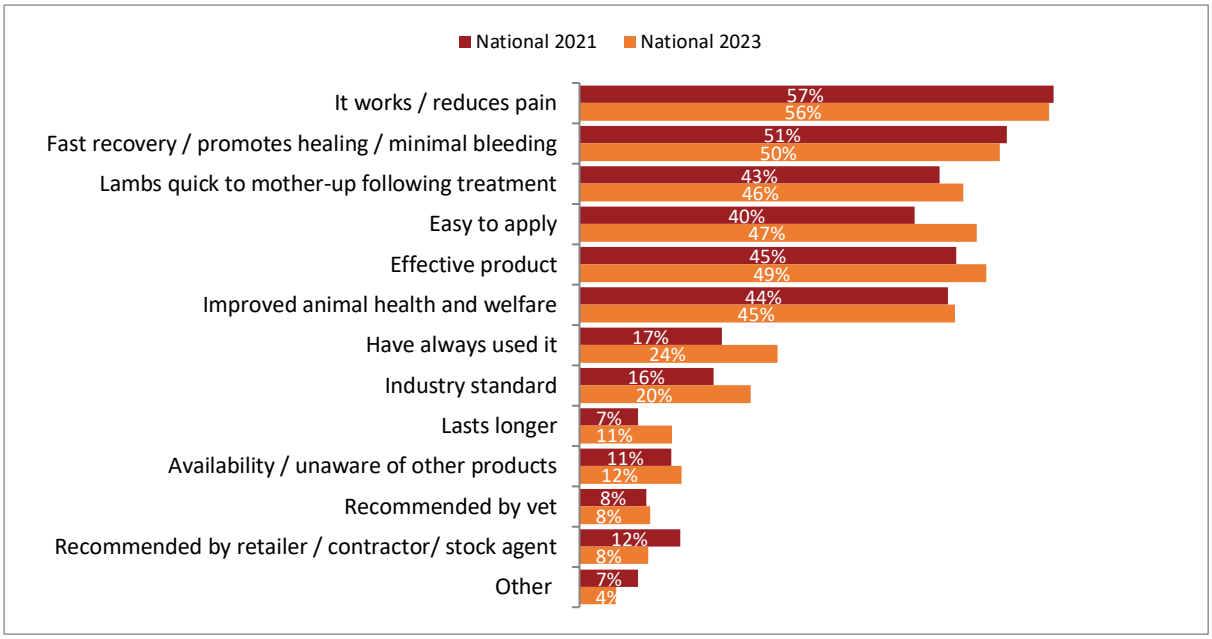
Where producers choose analgesic injections, they stated that they provided effective pain reduction (76%) and effectiveness (61%) (**Figure 65**).

The most common reasons cited for choosing veterinary prescribed analgesic oral gel effectiveness (70%) and pain reduction (64%) (**Figure 66**).Non-veterinary analgesic oral gel was used to improve animal welfare (76%) and lambs are quick to mother up (67%).

When producers did not use pain management it was largely because they do not consider it necessary (35%) (**Figure 67**). 31% of producers said it was impractical or a quick procedure with 30% stating it was too expensive.

Figure 64: Reason for using anaesthetic and antiseptic spray

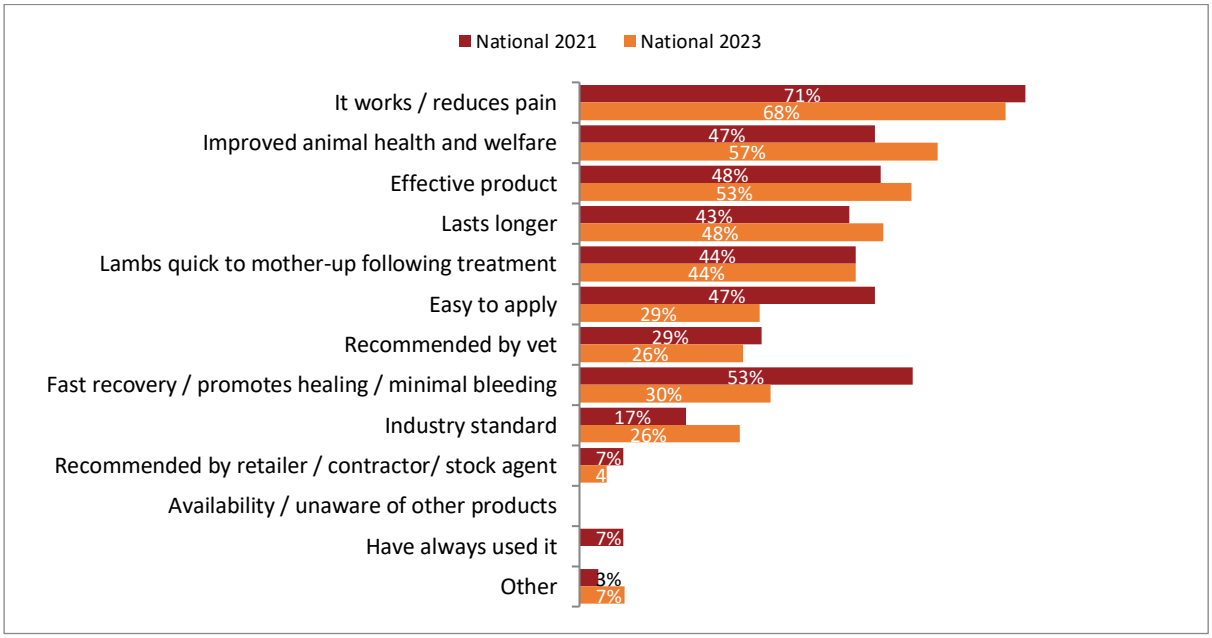
Base: Producers who mules lambs using anaesthetic and antiseptic spray n = 441



6.5 Why did you use this product?

Figure 65: Reason for using analgesic injection

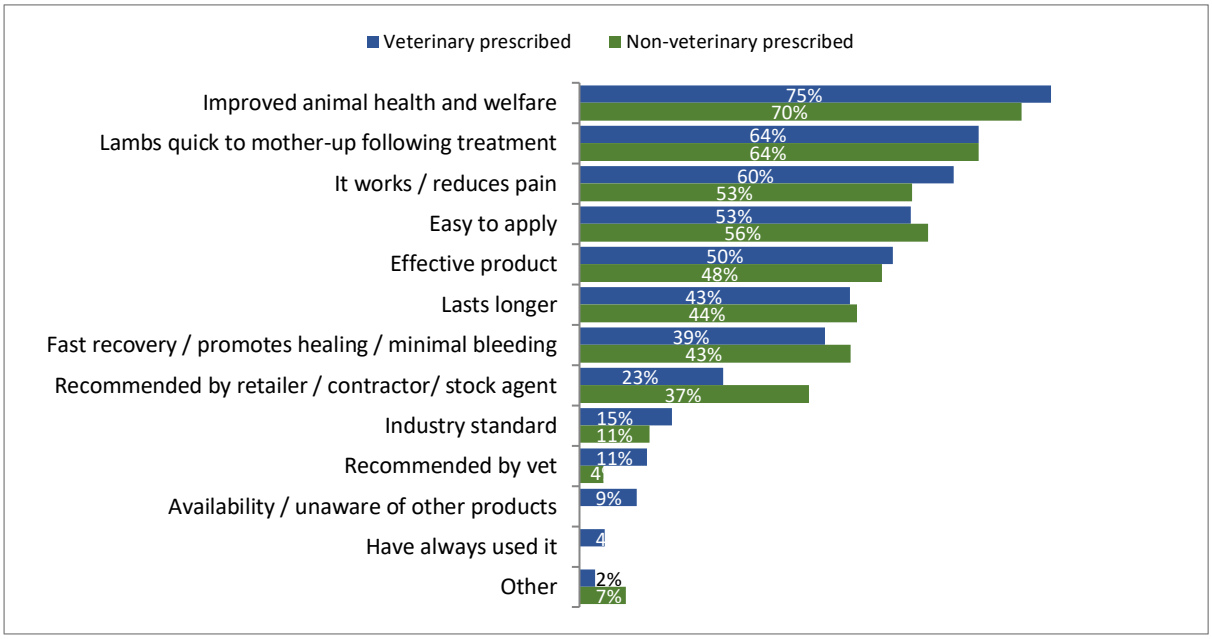
Base: Producers who mules lambs using analgesic injection n = 41



6.5 Why did you use this product?

Figure 66:Reason for using analgesic gel

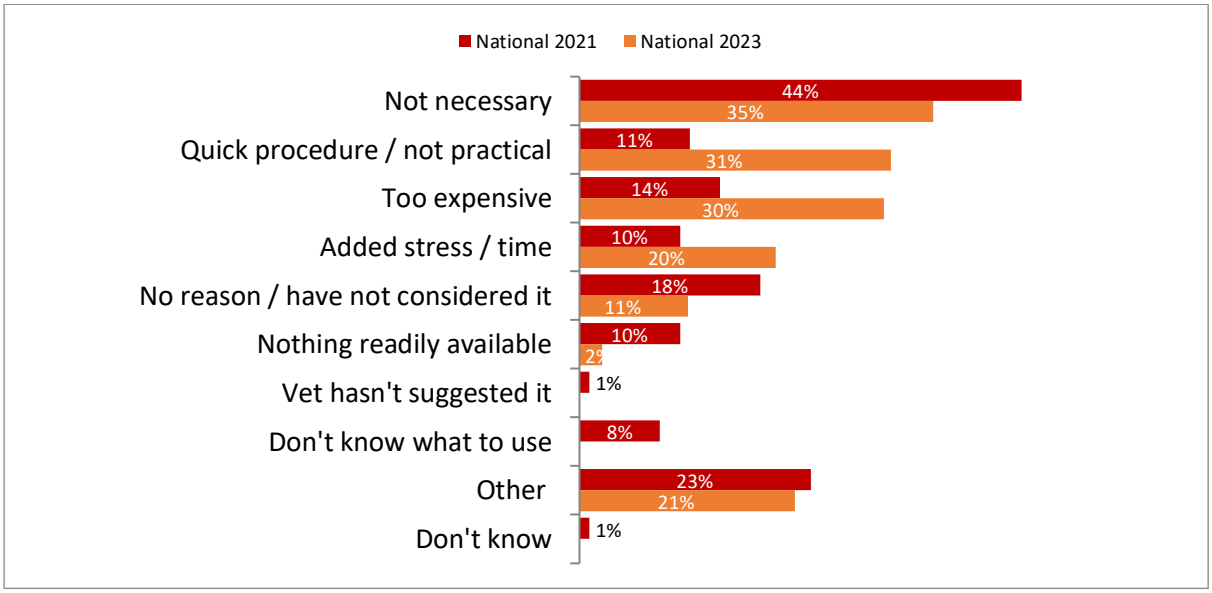
Base: Producers who mules lambs using veterinary prescribed analgesic gel n = 22 and non-veterinary prescribed analgesic gel n = 41



6.5 Why did you use this product?

Figure 67: Reason for not using pain management at mulesing

Base: Producers who did not use pain management products during mulesing n = 27



6.6 Why didn't you use pain management?

4.7.4 Mulesing cessation

At the national level, of producers who mulesed, more than half of producers said they were unlikely or very unlikely to cease mulesing (71%) (**Figure 68**).

The most common alternative to mulesing that producers selected was increased flystrike chemicals (40%) followed by increased crutching and moving to a different enterprise (both 31%) (**Figure 69**). New South Wales producers were significantly more likely to say that they would shift to a cattle enterprise (27%).

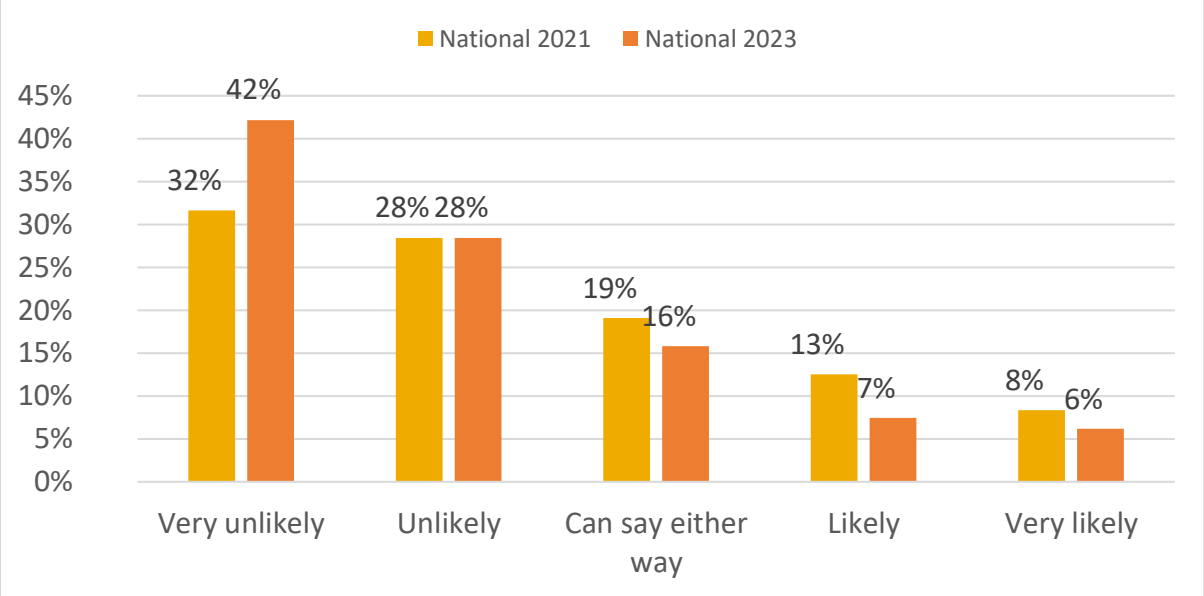
At the national level, more than two thirds (69%) of producers who did not mules in 2023 have never mulesed (**Figure 70**). Non-Merino producers (86%) were significantly more likely to have never mulesed than Merino producers (34%).

Nationally and on average, producers who had ceased mulesing were most likely to have done so in 2011 (**Figure 71**). Merino producers (2012) were significantly more likely to have ceased mulesing later than non-Merino producers (2008).

The most common reason given for ceasing mulesing is that producers are breeding sheep with less body wrinkle (45%) (**Figure 72**). Merino producers were much more likely to cite industry pressure (45% compared to non-Merinos at 11%).

Figure 68: Likelihood to cease mulesing in the next five years

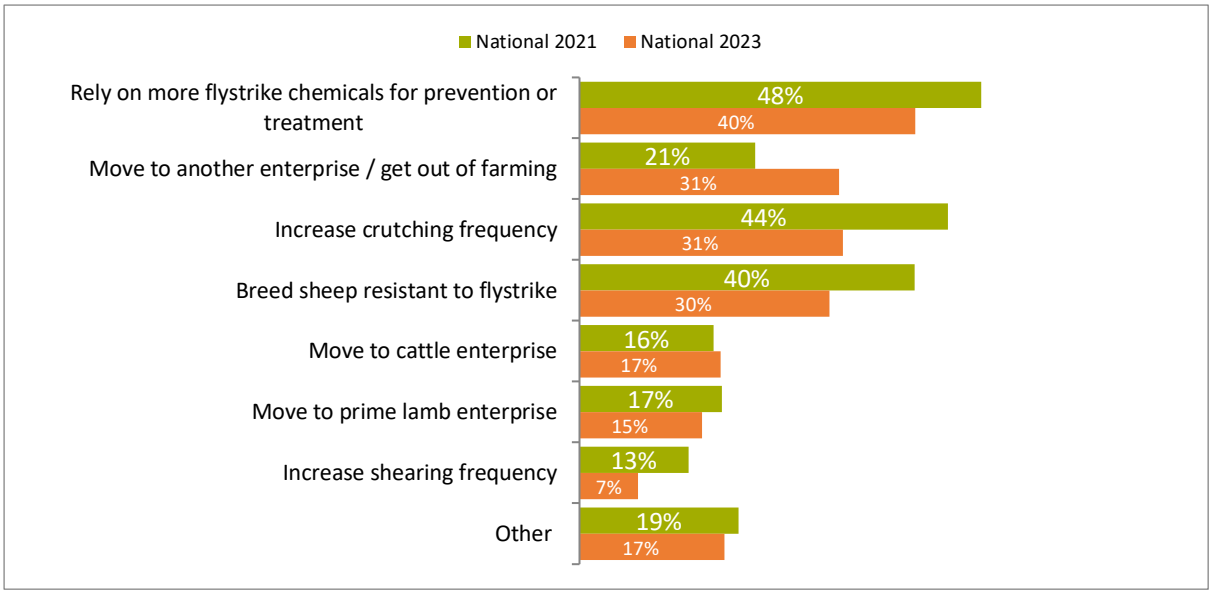
Base: Producers who mulesed lambs n = 540



6.7 How likely are you to cease mulesing in the next 5 years?

Figure 69: Alternatives to mulesing

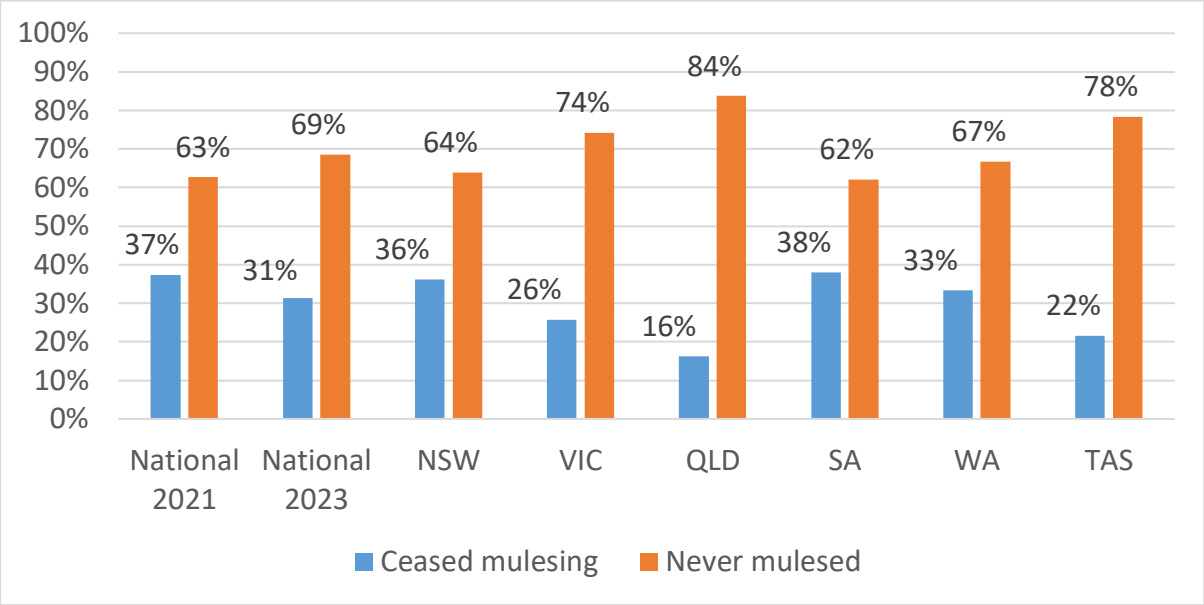
Base: Producers who mulesed lambs n = 540



6.8 If mulesing was no longer an option, which of the following would you do?

Figure 70: Mulesing cessation

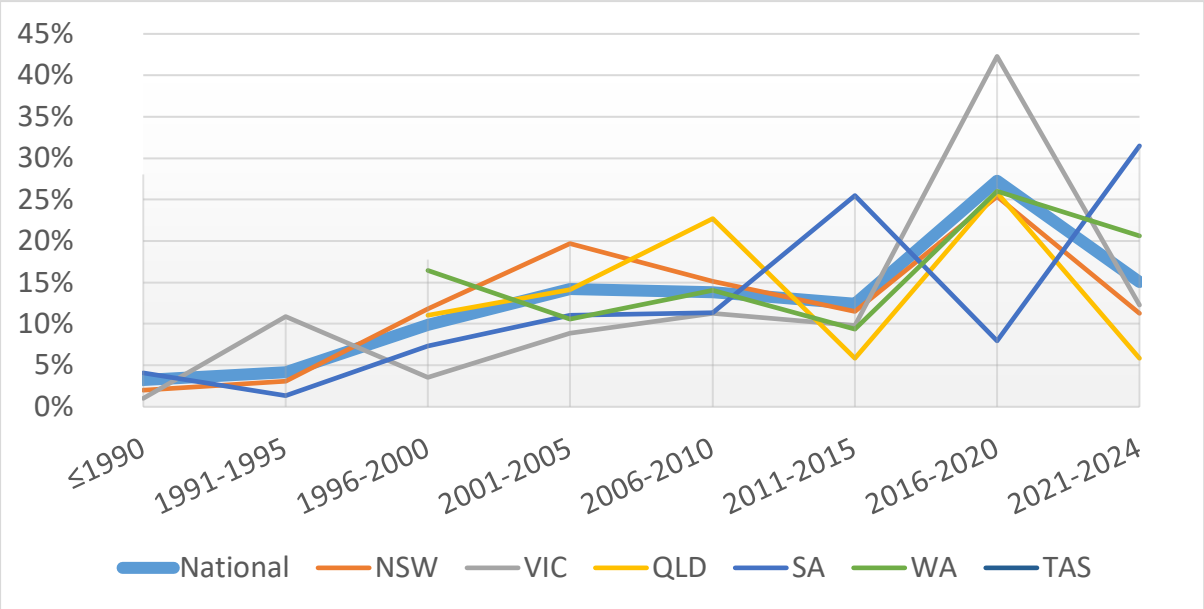
Base: Producers who did not mules n = 728



6.9 Have you ceased mulesing your ewe and male lambs or did you never mules them?

Figure 71: Average mulesing cessation year

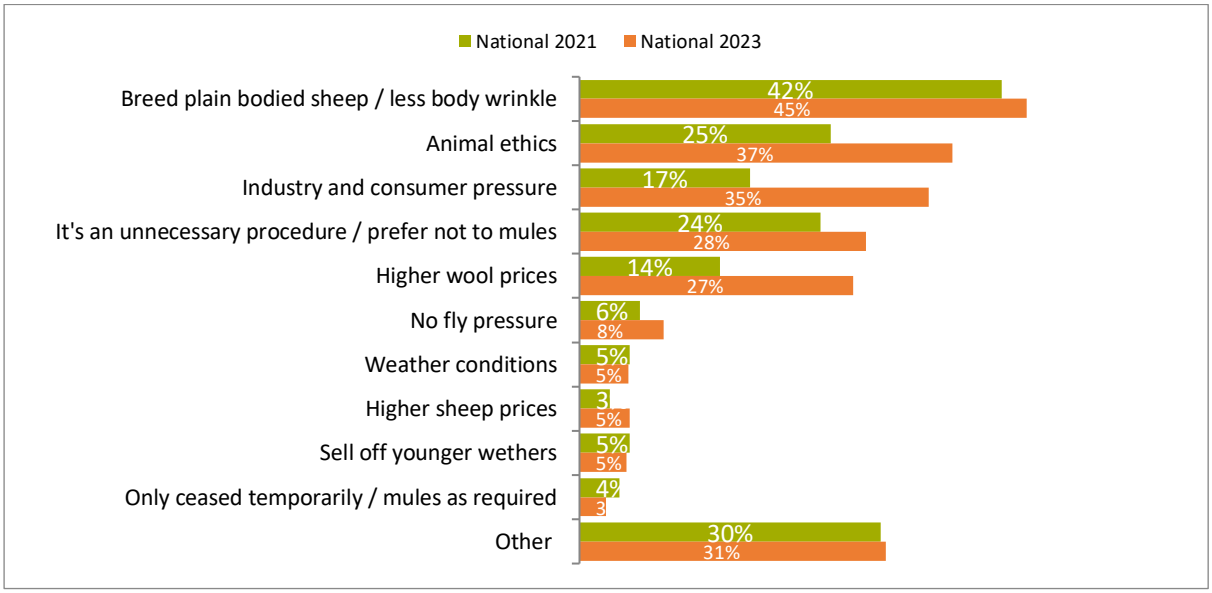
Base: Producers who ceased mulesing lambs n = 288



6.10 What year did you cease mulesing?

Figure 72: Reason for mulesing cessation

Base: Producers who ceased mulesing lambs n = 288



6.11 Why did you cease mulesing?

4.8 Vaccination

Nationally, an average of 92% of producers vaccinate at least some of their flock (Figure 73). Queensland producers were significantly less likely to vaccinate (31%). Further questioning revealed that on average, of the 92% who vaccinate their flock 94% vaccinate their entire flock (Figure 74), with an average of 2,608 sheep per producer receiving a vaccination.

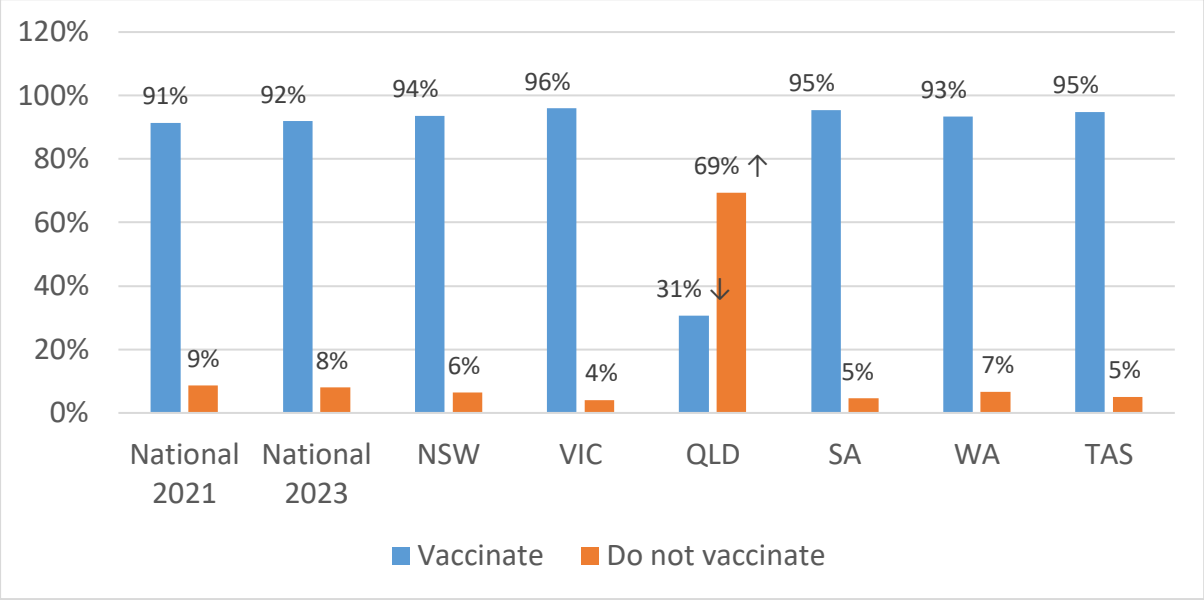
The most commonly used vaccine type is combined 5 in 1 clostridial with cheesy gland vaccine (61%) (Figure 75).

Nationally, an average of 71% of producers vaccinate pre-lambing, 95% at marking and 73% at weaning (Figure 76). Of those who vaccinate pre-lambing, South Australians (81%) are significantly more likely to vaccinate, and Queenslanders (35%) and Western Australians (62%) are significantly less likely. There were no significant differences at marking. At weaning, Merino and Western Australian producers were more likely to vaccinate (79% and 81% respectively) than non-Merino (66%), Victorian (66%), Queensland (51%) and Tasmanian producers (52%).

The majority (95%) of producers follow label recommendations when administering antibiotics (Figure 77).

Figure 73: Producers who vaccinate any sheep in flocks

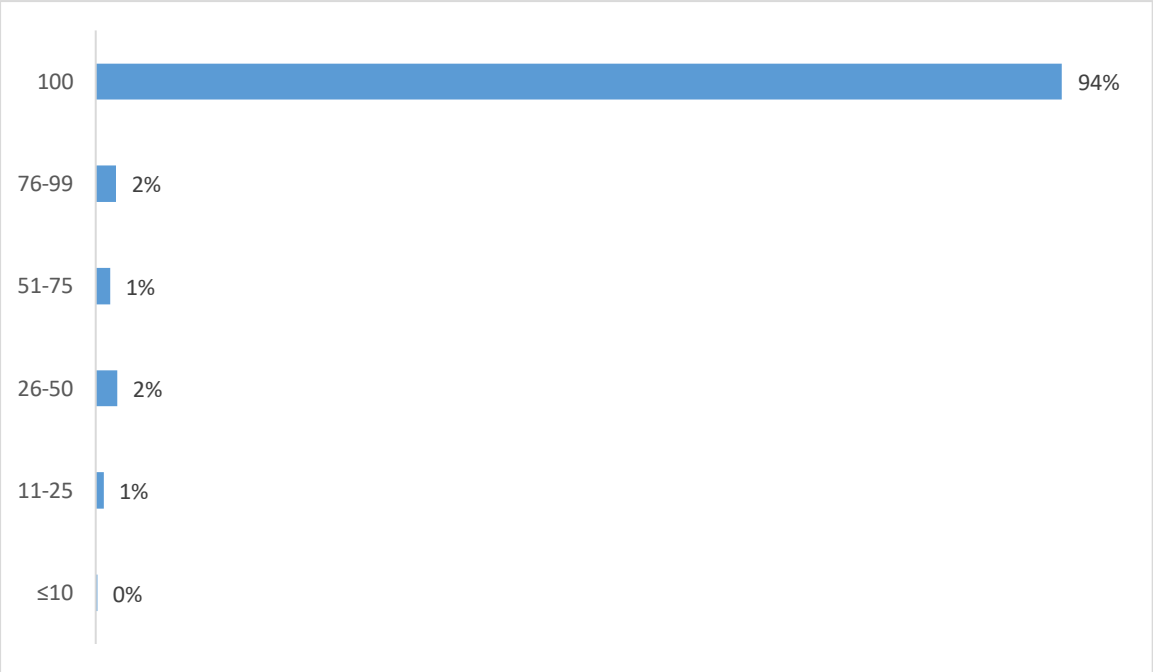
Base: n = 1,268



7.1 Do you vaccinate any sheep in your flock?

Figure 74: Percent of flock which receives at least one vaccination

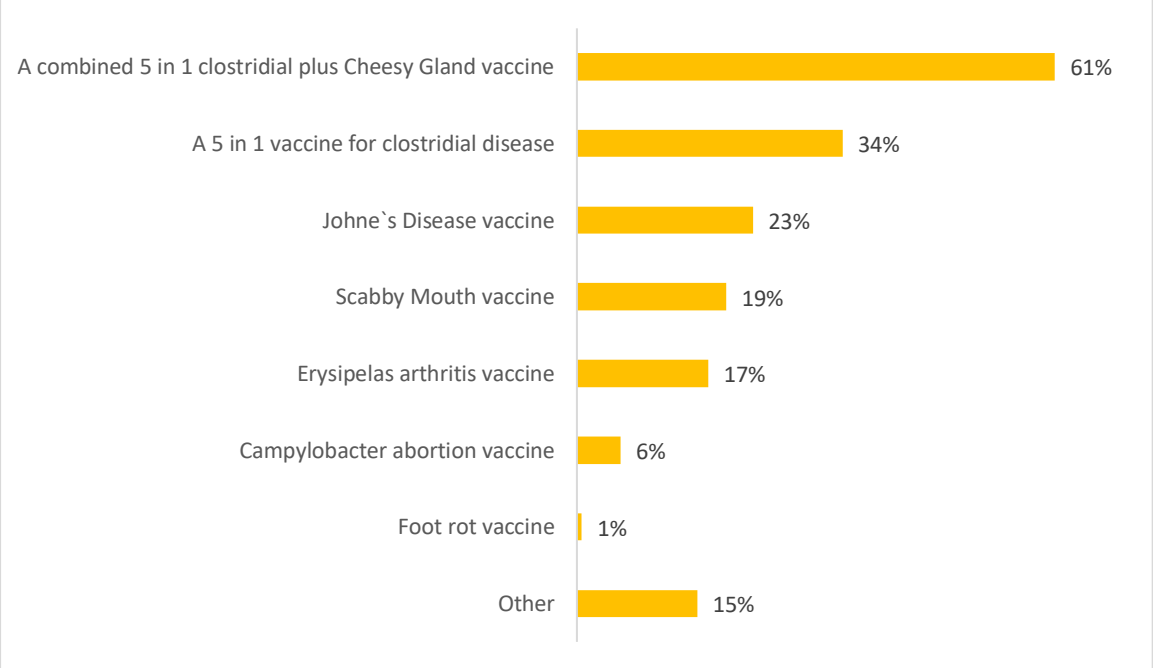
Base: Producers who vaccinate sheep n = 1,197



7.2.0 What percent of your entire flock receives at least one vaccination of any type of vaccine?

Figure 75: Vaccines used

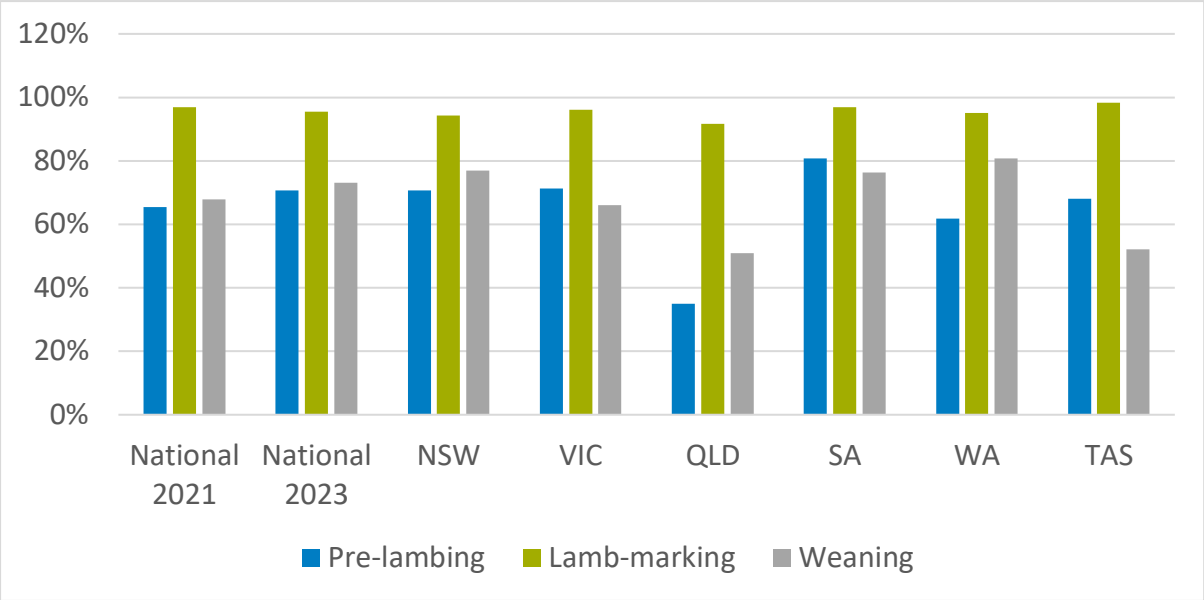
Base: Producers who vaccinate sheep n = 1,197



7.2.1 What type of vaccines do you use on your farm?

Figure 76: Vaccination timings

Base: Producers who vaccinate lambs n = 1,197



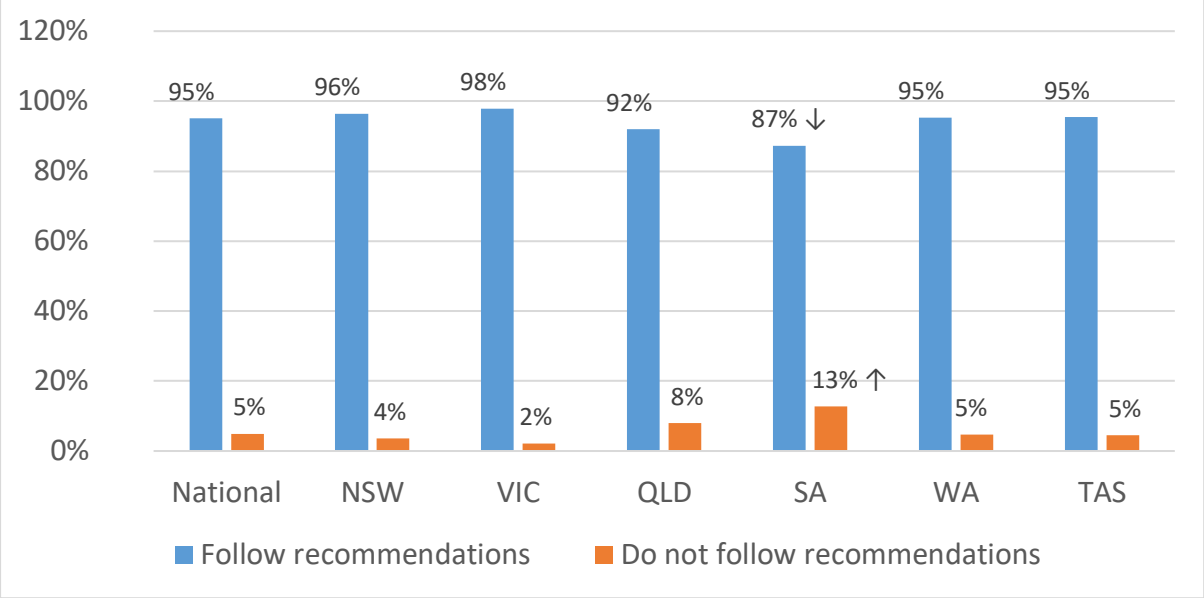
7.3 Do you do a pre-lambing vaccination?

7.4 Do you vaccinate your ewe lambs at lamb marking?

7.5 Do you vaccinate your lambs at weaning?

Figure 77: Producers who follow label recommendations for antibiotics

Base: Producers who vaccinate lambs n = 1,197



7.6 Do you follow label recommendations when administering antibiotics to your sheep?

4.9 Mortality and euthanasia

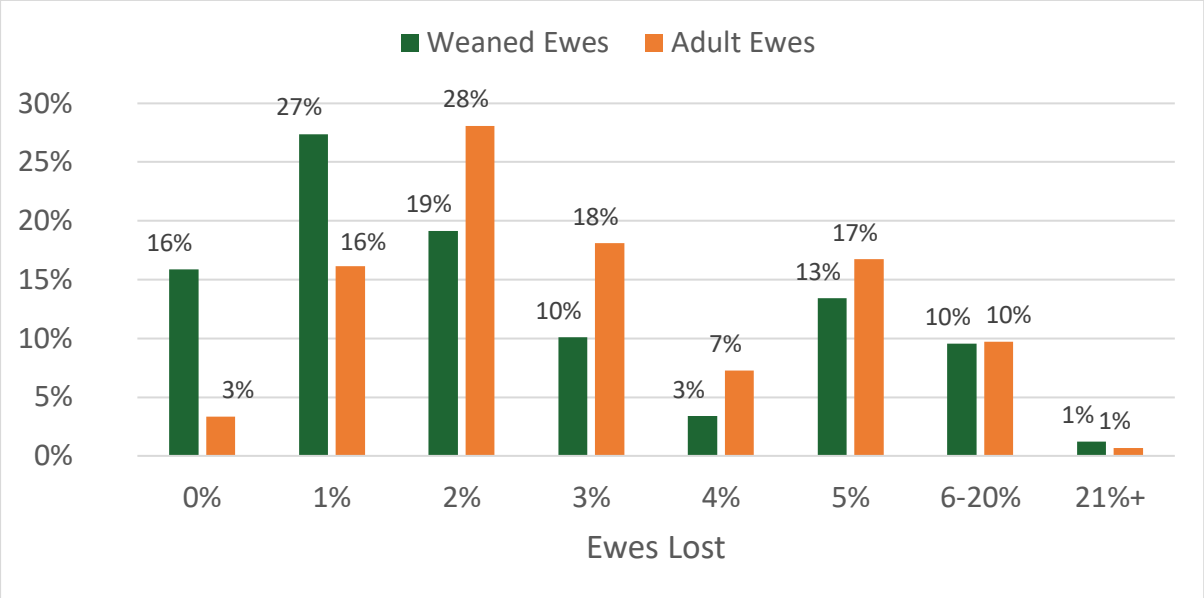
Nationally, the average weaned ewe mortality rate before joining was 3.6% with the adult ewe mortality rate at 3.6% (Figure 78). Nearly two thirds of producers (62%) lost 2% or fewer weaned ewes before joining.

Nationally, the majority (85%) of producers have at least heard of the welfare standards and guidelines and two thirds (66%) have read them (Figure 79).

Of producers who are aware of the broader Australian Animal Welfare Standards and Guidelines for Sheep, a majority (71%) are aware of and have read the specific standards and guidelines for the Humane Killing of Sheep (**Figure** 80).

Figure 78: Mortality of weaned ewes and adult ewes

Base: All producers n = 1,268

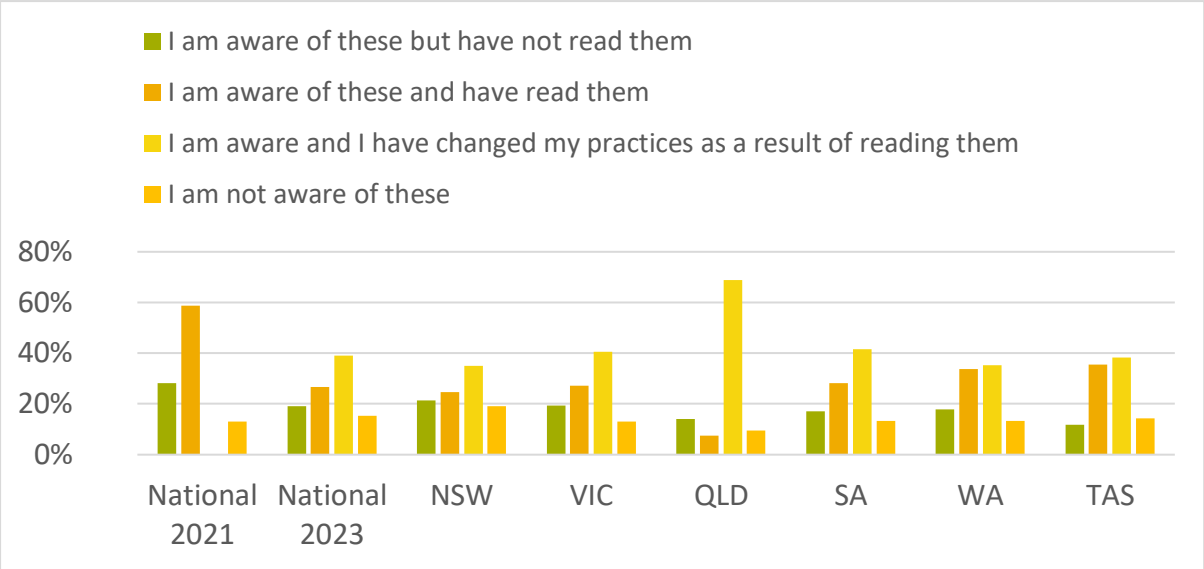


8.1 Of the ewe lambs that you wean, what percentage would you lose before the first joining?

8.2 What is your annual adult ewe mortality percentage rate?

Figure 79: Awareness of the Australian Animal Welfare Standards and Guidelines for Sheep

Base: n = 1,268



8.3 The industry has developed the Australian Animal Welfare Standards and Guidelines for Sheep. Which of the following best describes your knowledge of these standards and guidelines?

NB. Question has been slightly altered since 2021, with the response "I am aware and I have changed my practices as a result of reading them" added in 2023

Figure 80: Standards and Guidelines for the Humane Killing of Sheep

Base Producers aware of the Australian animal welfare standards and guidelines for sheep: n = 1,083

8.4 The Australian Animal Welfare Standards and Guidelines for Sheep include specific standards and guidelines for the Humane Killing of Sheep. Which of the following best describes your knowledge of the specific standards and guidelines for the Humane Killing of Sheep?

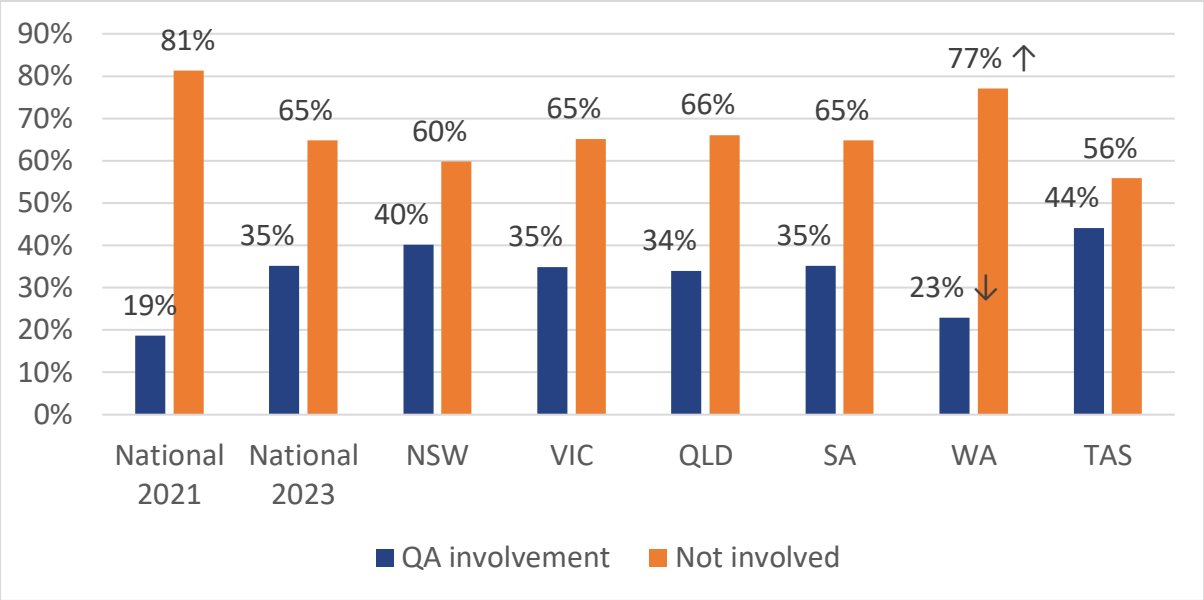
4.10 Wool quality assurance schemes

Nationally, over one third of Merino producers are involved in wool quality assurance schemes (35%) (Figure 81). Western Australian producers were significantly less likely to be involved (23%).

Where producers are not involved in a wool QA scheme, around half say they do not see any premiums (48%) and a quarter (25%) cite audit fatigue (Figure 82).

Figure 81: Wool Quality Assurance Scheme Involvement

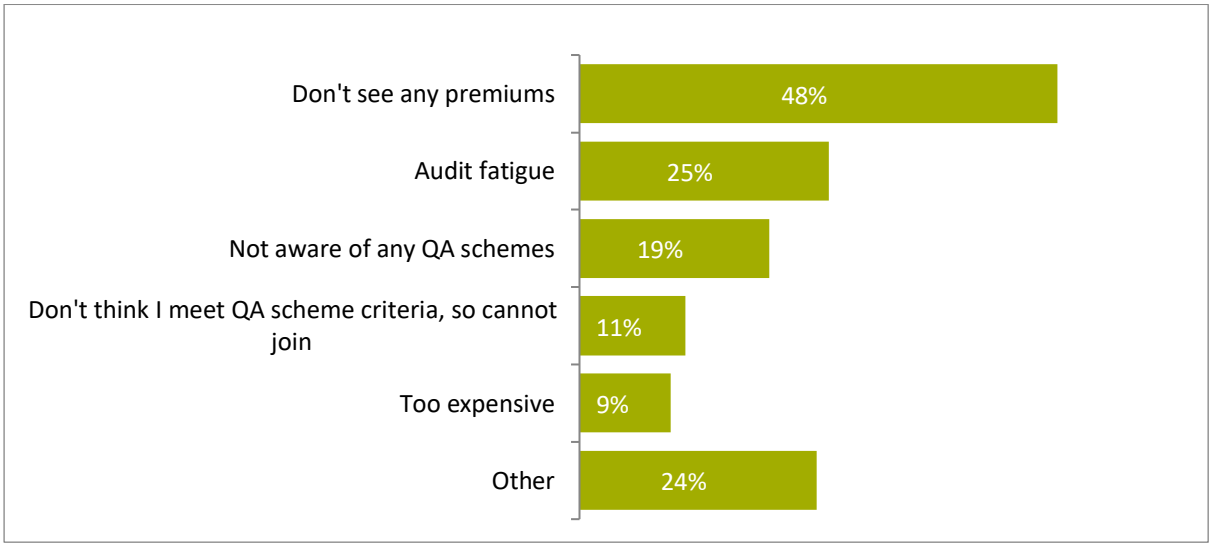
Base: Merino producers n = 809



9.1 Are you involved in any quality assurance schemes involving wool?

Figure 82: Reasons against involvement in quality assurance schemes

Base: Merino producers who are not involved in QA schemes n = 515



9.2 What has stopped you from being involved in a wool QA scheme?

4.11 Predators

4.11.1 Overview

On average, 75% of producers nationally reported problems with predators, with average losses of 36 sheep each year (**Figure 83**).

Most significant predators vary significantly by state, and by breed (Figure 84). Queensland, New South Wales and Merino producers were more likely to report issues with wild dogs (64%, 14% and 14% respectively). Pigs were most likely to be problematic in Queensland and New South Wales and among Merino producers (37%, 27% and 16%, respectively). Foxes were more likely to be reported in Victoria (97%) and Western Australia (98%). Birds were common in Western Australia (74%).

The most common method of wild dog control nationally is shooting (69%) (Figure 85). Queensland producers were significantly more likely to use guardian animals (39%) when compared to other states.

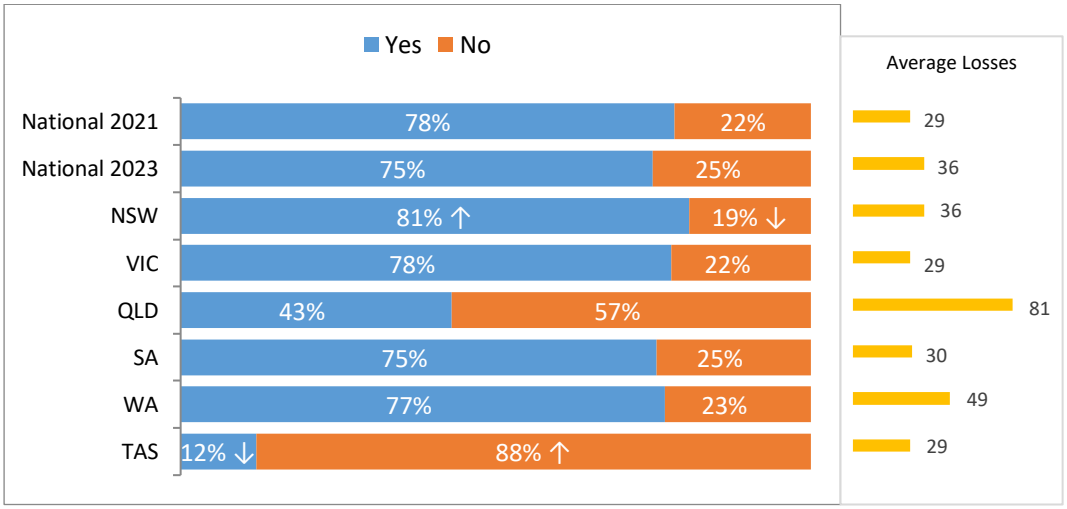
Producers most commonly control pigs by shooting them (93%). Traps (55%) and poison or bait (50%) are also popular (Figure 86).

Shooting foxes is the most common control method used (78% nationally) (Figure 87). There are significant differences between states with poison significantly more likely to be used in New South Wales (70%) and by Merino producers (59%). Western Australian producers are more likely to shoot (90%) or trap (20%), and Victorian producers were also more likely to shoot (87%).

Most producers do not control birds (76% nationally) (Figure 88), with South Australian producers significantly less likely to control birds. Queensland producers were significantly more likely than other states to poison or trap birds (25% and 15% respectively).

Figure 83: Problems with predators

Base: n = 1,268

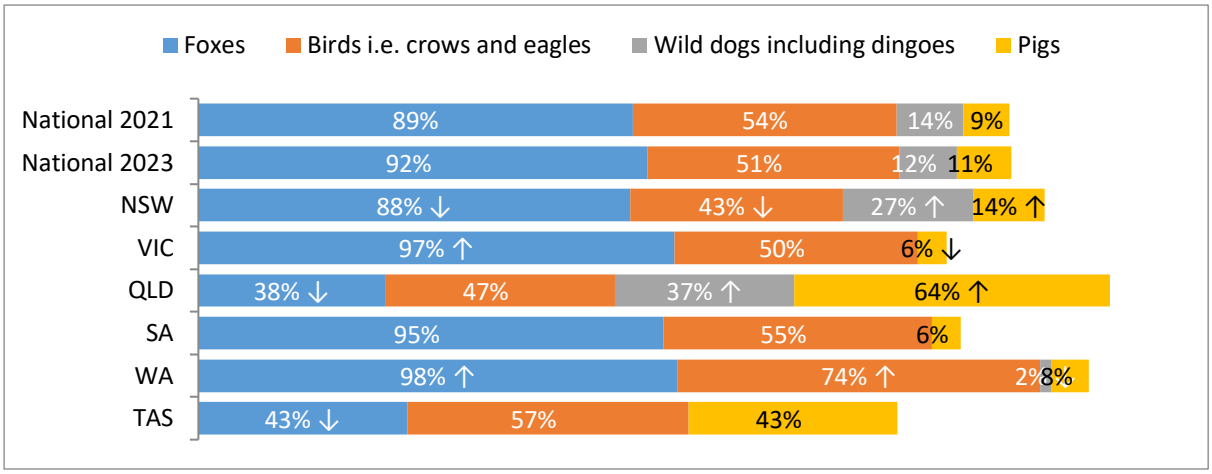


10.1 Do you have a problem with predators on your property?

10.2 How many sheep did you lose to predators in 2023?

Figure 84: Significant predators by state

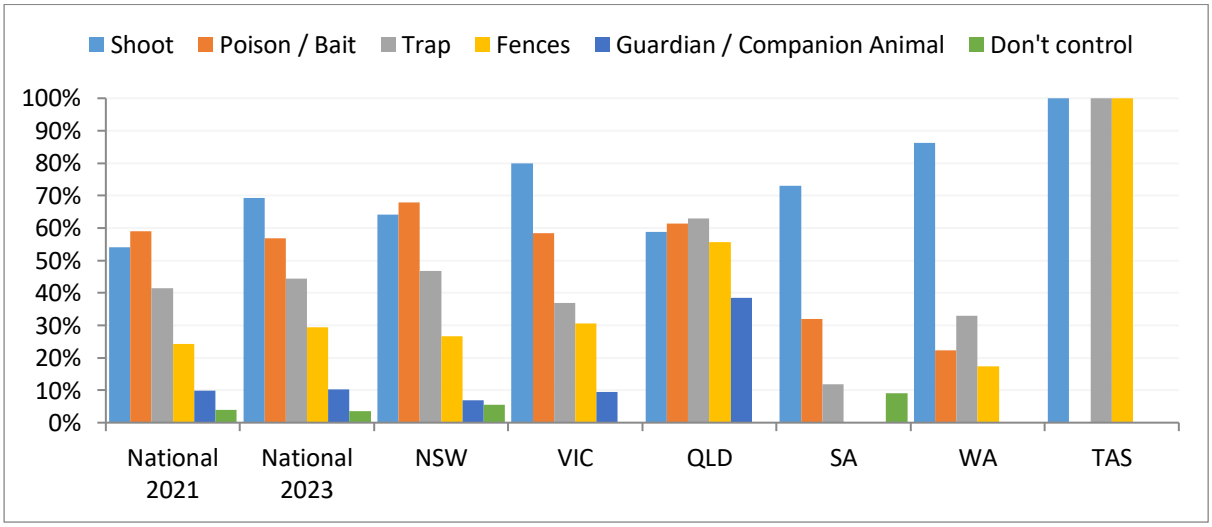
Base: Producers who reported problems with predators n = 964



10.3 What are the two most relevant predators on your property?

Figure 85: Wild dog control by state

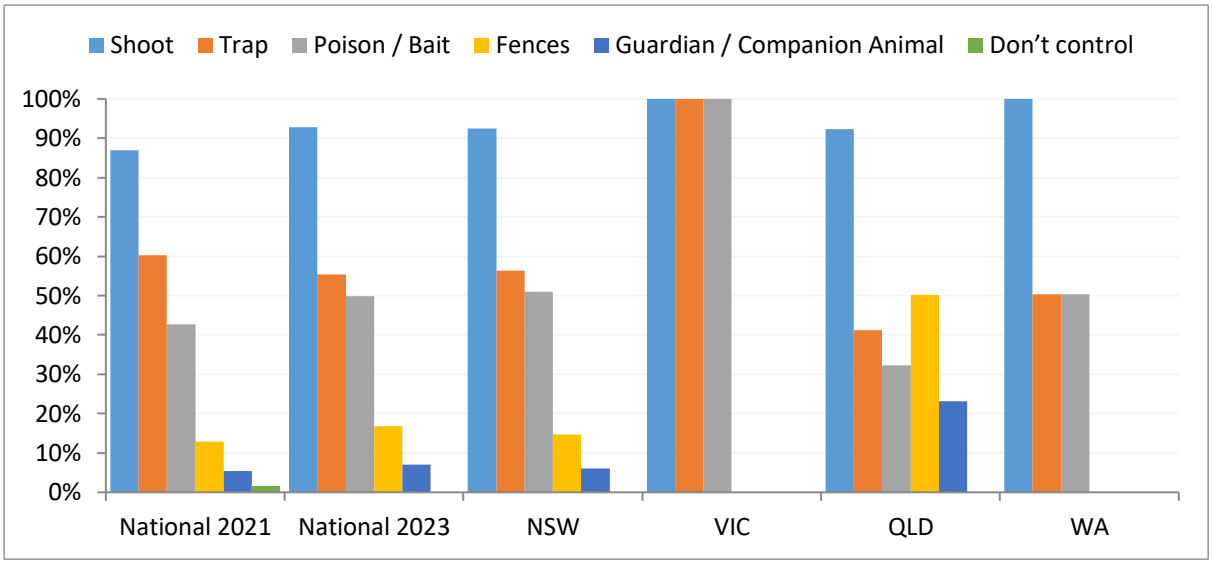
Base: Producers who reported problems with wild dogs n = 112



10.4 How do you control Wild dogs including dingoes?

Figure 86: Pig control by state

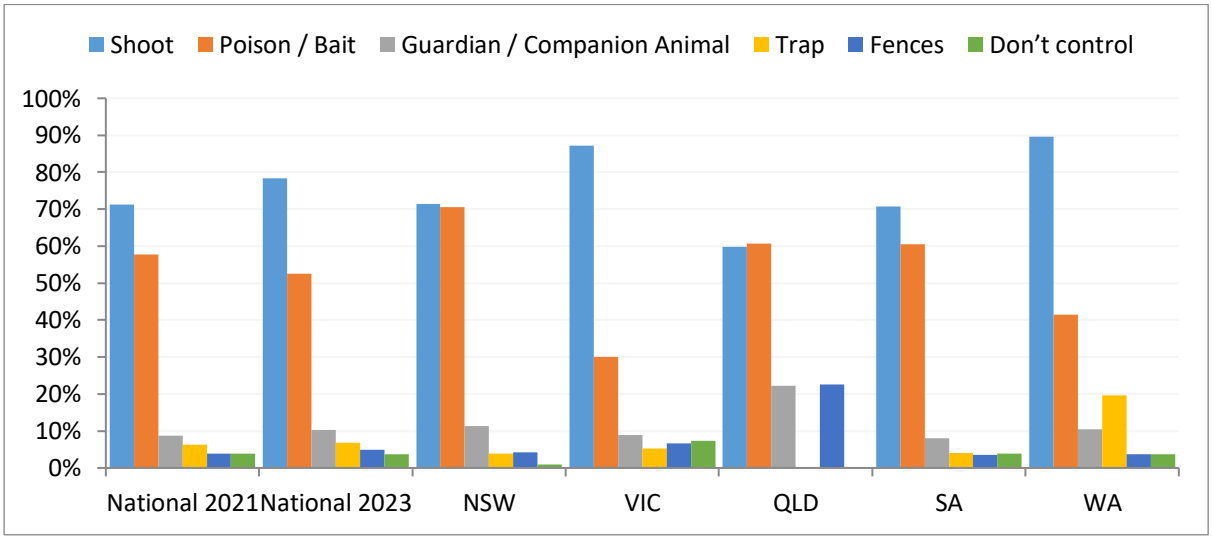
Base: Producers who reported problems with pigs n = 115



10.4 How do you control Pigs?

Figure 87: Fox control by state

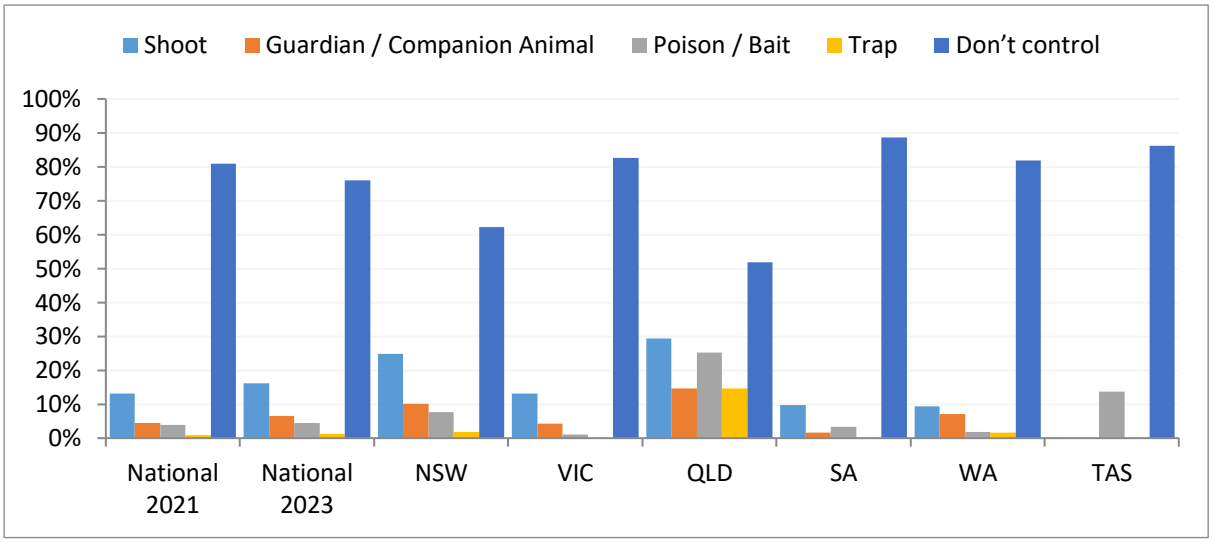
Base: Producers who reported problems with foxes n = 872



10.4 How do you control Foxes?

Figure 88: Bird control by state

Base: Producers who reported problems with birds n = 512



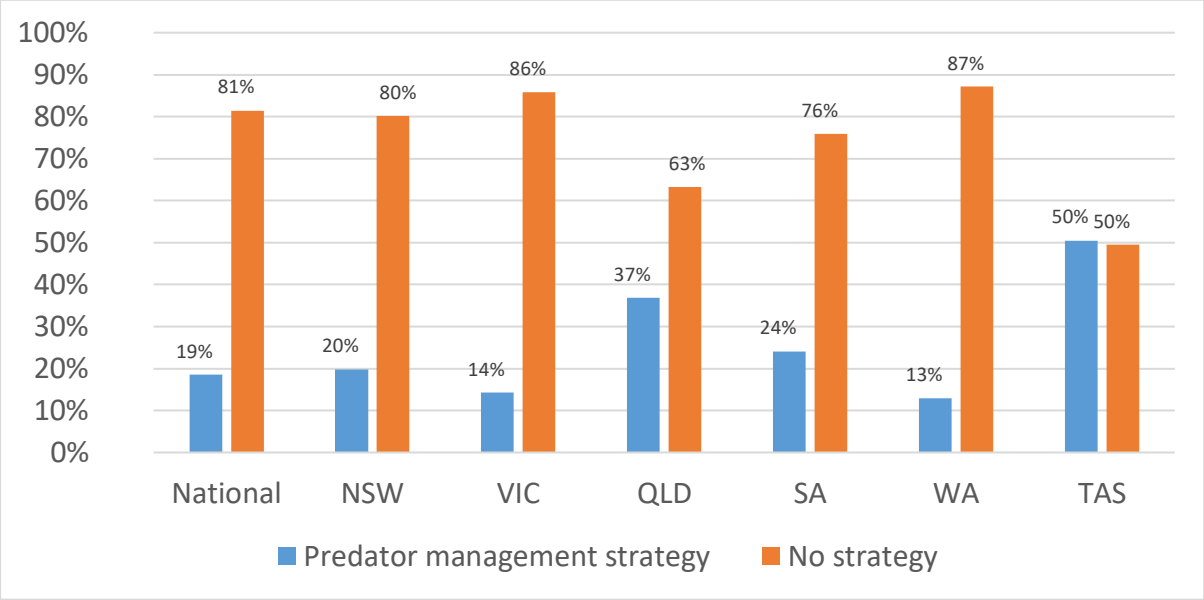
10.4 How do you control Birds i.e. crows and eagles?

4.11.2 Management strategies

Almost one fifth of producers nationally have a documented predator management strategy for their properties (19%) (Figure 89).

Figure 89: Documented predatory management strategy

Base: Producers who reported problems with predators n = 964



10.5 Do you have a documented predator management strategy or plan for your property?

4.12 Carbon activities

Around half (47%) of producers generate and use renewable energy (Figure 90). A further 11% of producers stated that they use renewable energy bought from their energy retailer with 44% not generating or buying any renewable energy. Tasmanian producers were significantly more likely to use renewable energy from a retailer (31%), while Western Australian producers were most likely not to generate or buy renewable energy (57%). There were no significant differences between other states or Merino and non-Merino producers. Producers were allowed to select multiple responses and may do a combination of the responses across their business.

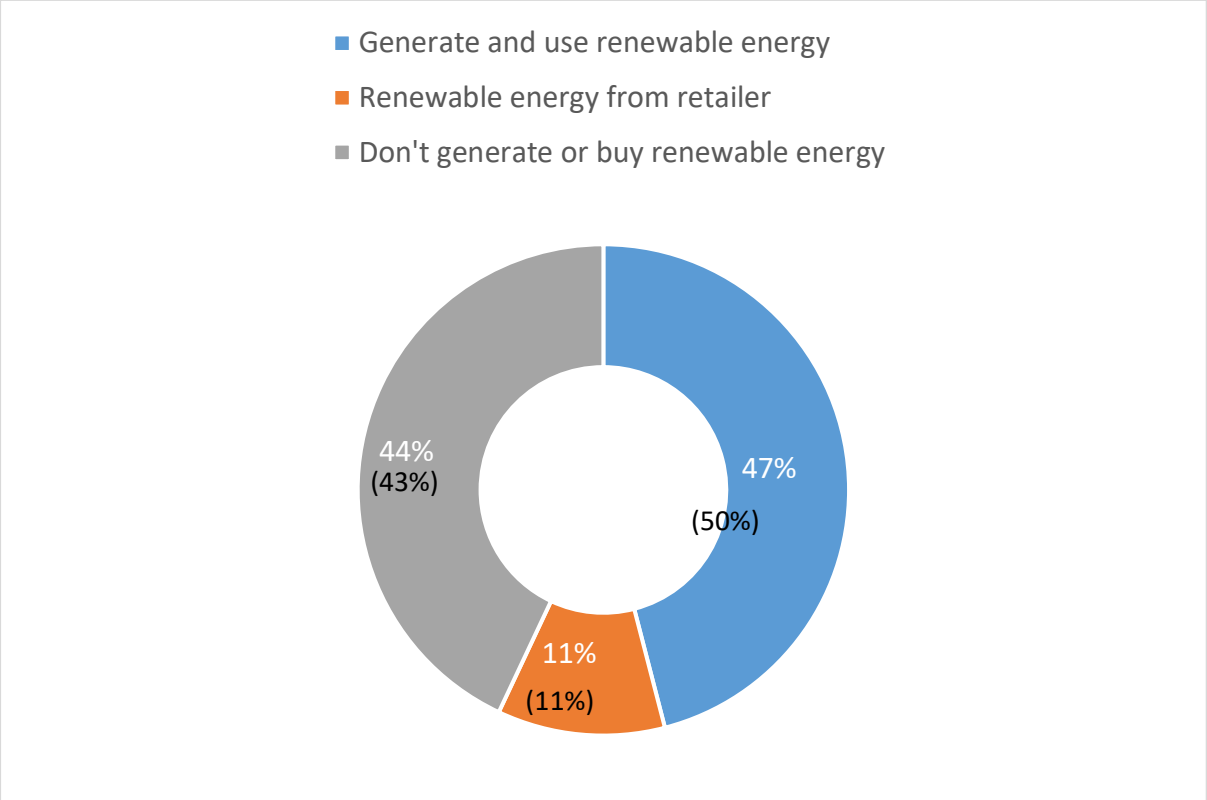
Where producers who generate their own renewable energy, the majority (82%) have solar without batteries (Figure 91). Slightly over a fifth (22%) generated solar with a battery.

Producers interviewed had generally not taken carbon accounting training study (87%) and did not estimate their emissions (90%). South Australian producers were significantly less likely to estimate emissions than other states (96%). There were no other significant differences (Figure 92).

21% of producers did conduct emission reduction activities (Figure 93), and often selected more than one measure (Figure 94: Emissions reduction measuresFigure 94). Almost three quarters of producers (71%) used pasture management, with carbon storage also a popular technique (55%).

Figure 90: Renewable energy generation and use

Base: All producers n = 1,268

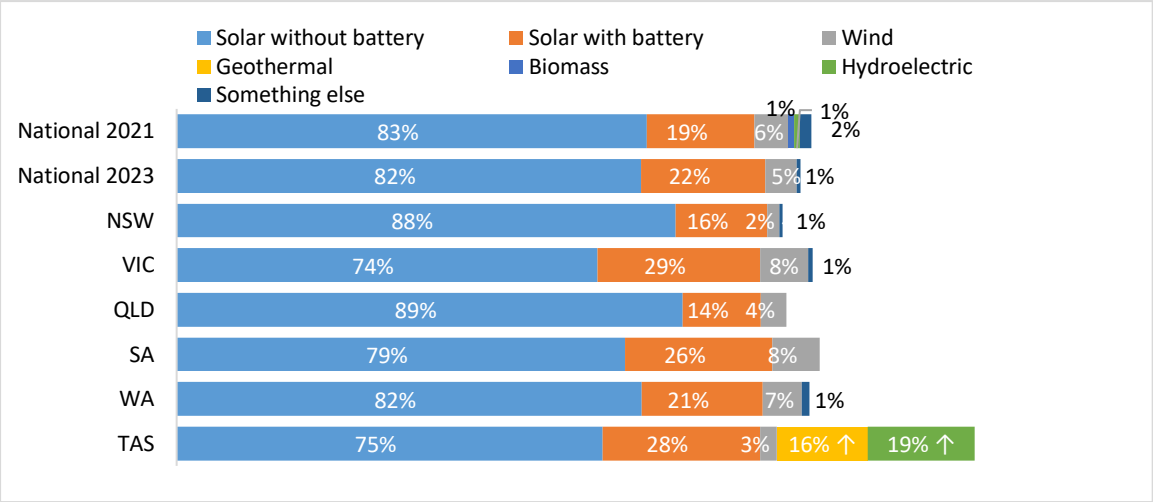


11.1 Which of the following best describes your use of renewable energy on your farm?

NB. 2021 results in brackets

Figure 91: Renewable energy generation methods

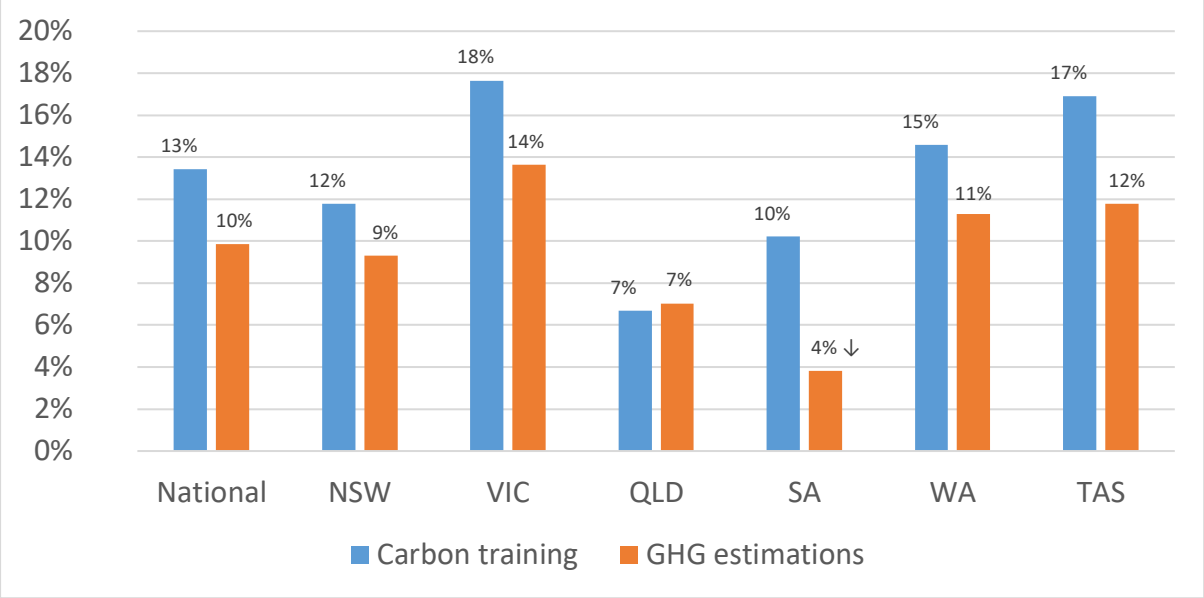
Base: Producers who generate their own renewable energy n = 613



11.2 Which of the following types of renewable energy do you generate and use on your farm?

Figure 92: Carbon training and emissions measurement

Base: All producers n = 1,268

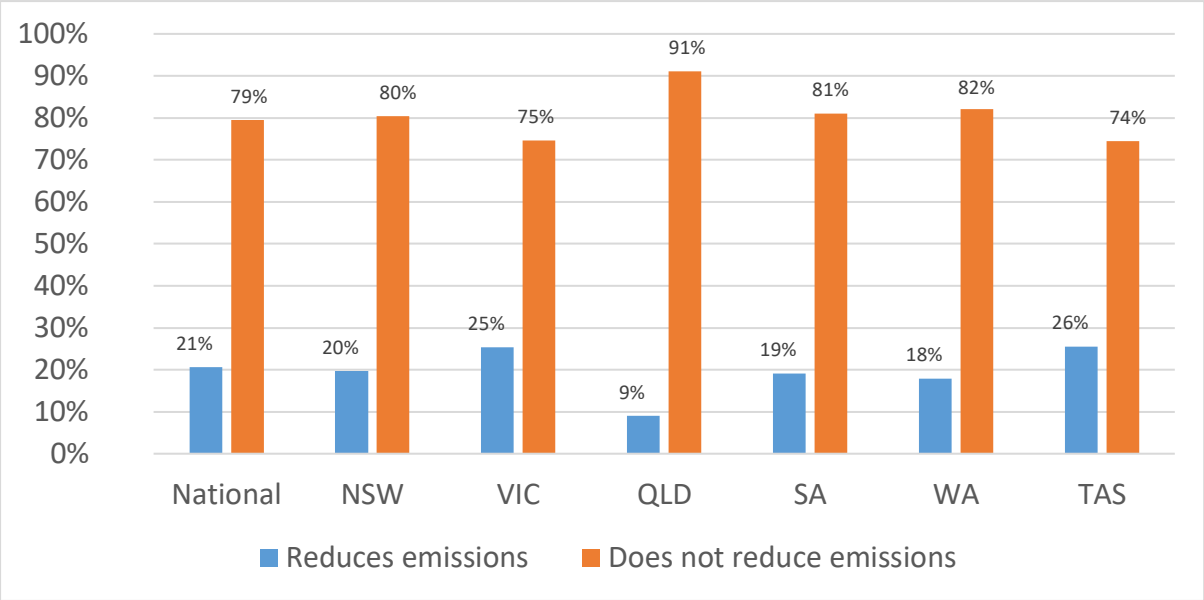


11.3 Have you undertaken any carbon neutral or carbon accounting training?

11.4 Have you estimated the net greenhouse gas emissions produced in your operation using a carbon calculator tool or another process?

Figure 93: Implementation of emissions reduction measures

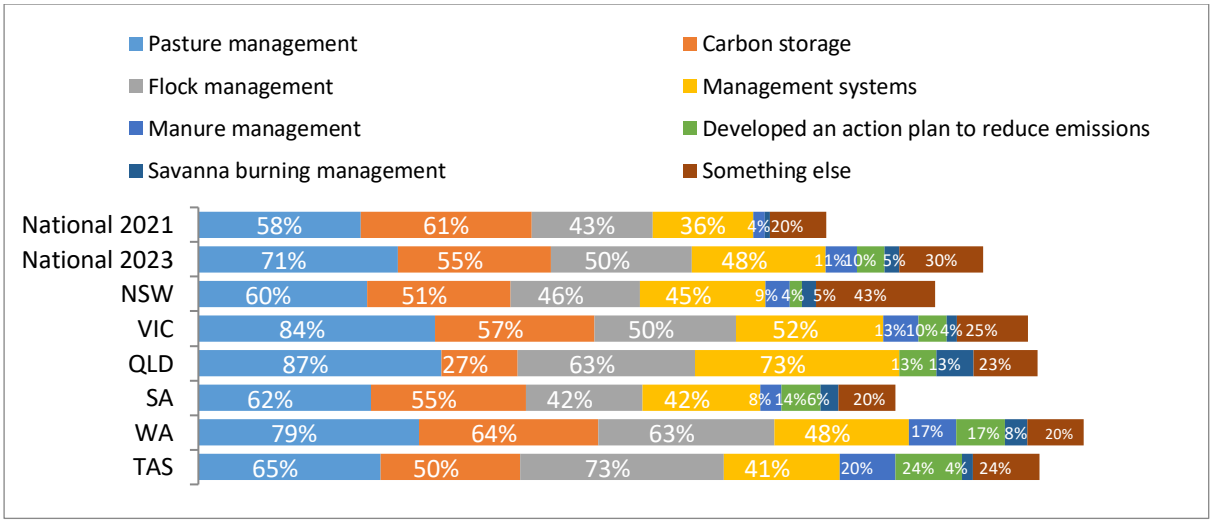
Base: All producers n = 1,268



11.5 Have you implemented any activities to reduce your net greenhouse gas emissions or emissions intensity (emissions per kilogram liveweight) while producing livestock?

Figure 94: Emissions reduction measures

Base: Producers who implement emissions reduction measures n = 271



11.6 Which of the following activities have you implemented?

Table 4: Examples of emissions reduction measures provided in the survey

Carbon Storage	Pasture Management	Flock Management	Management Systems	Reducing Livestock Numbers	Manure Management	Savannah Burning
Tree planting Dung Beetles Manure, plant debris and compost application Planting of permanent pastures	Grazing management Earthworms Grass species Legumes Perennial pastures	Increasing fertility Decreasing average age Reducing proportion of unproductive animals	Stocking rates Improved nutrition Improved rates of liveweight gain	Reducing overall livestock numbers	Manure stockpile aeration Addition of urease inhibitors	Management of savannah burning

4.13 Biodiversity and land and water management

4.13.1 Biodiversity and land management

Almost two fifths (39%) of producers had completed a property management plan which incorporates biodiversity and or conservation (Figure 95). Conversely, nearly three quarters (73%) of producers undertook deliberate activities to maintain, measure or enhance biodiversity.

Producers undertook an array of activities to maintain and improve biodiversity, with many undertaking multiple measures (Figure 96). The most common of these was maintenance of adequate ground cover (77%), management of soil health (67%) and minimum tillage (64%). Victorian producers were significantly more likely to undertake minimum tillage (75%) and non-Merino producers were significantly more likely to maintain adequate ground cover compared to Merino producers (82% compared to 72%).

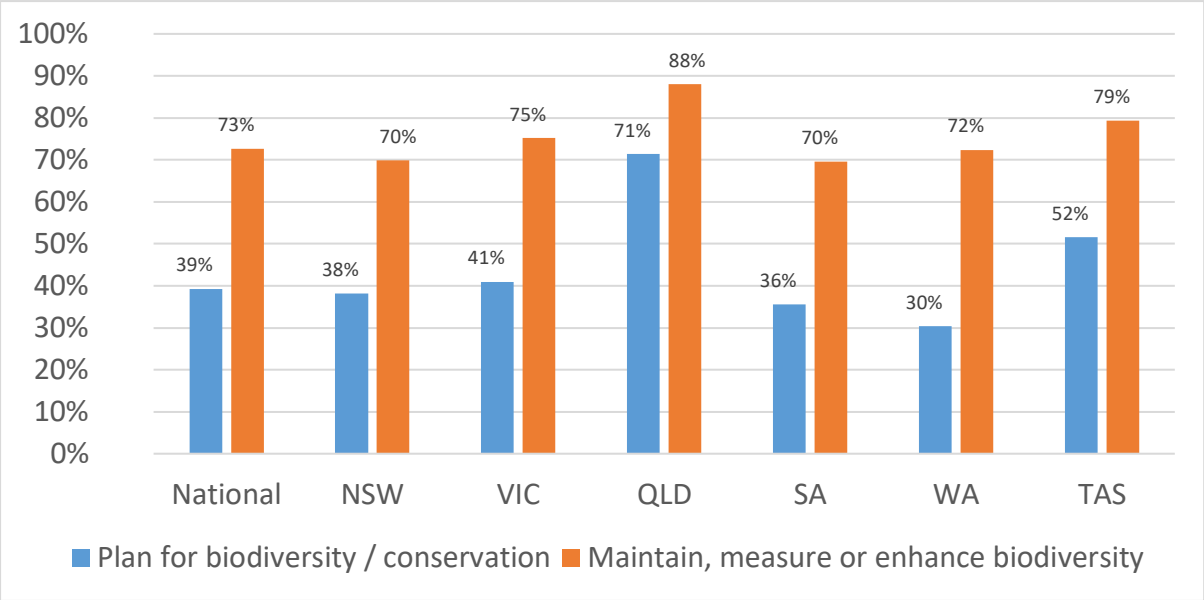
Likewise, producers undertook multiple land management activities (Figure 97), most commonly, weed control (89%), destocking of pastures (62%) and maintaining reliable water sources for livestock (53%). Victorian and Western Australian producers were significantly more likely to apply soil treatments (57% and 63% respectively). Erosion control was most common in Queensland (81%) and Western Australia (42%), while Merino producers were more likely to destock (40% compared to 29% non-Merino).

Producers also undertook multiple grazing management activities, with fencing areas to prevent livestock access (65%) or to better manage grazing pressure (62%) the most common measures (Figure 98). Queensland producers were significantly more likely to fence to manage grazing pressure (90%), while Western Australian producers were more likely to fence waterways (55%) and Tasmanian producers were more likely to fence waterways (62%) and provide off stream water (72%).

The majority of producers (97%) felt that they can accurately identify common weeds (Figure 99).

Figure 95: Biodiversity plan and activities

Base: All producers n = 1,268

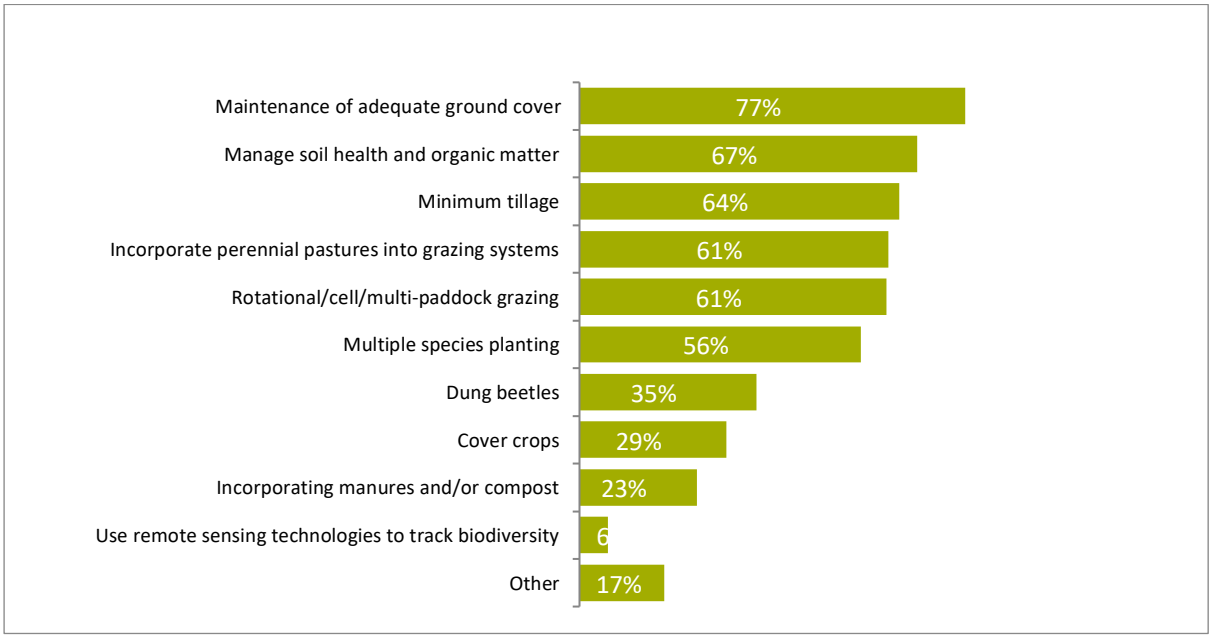


12.1 Do you have a completed property management plan that incorporates biodiversity and/or conservation?

12.2 Do you undertake deliberate activities to maintain, measure or enhance biodiversity on your property?

Figure 96: Practices to maintain and improve biodiversity

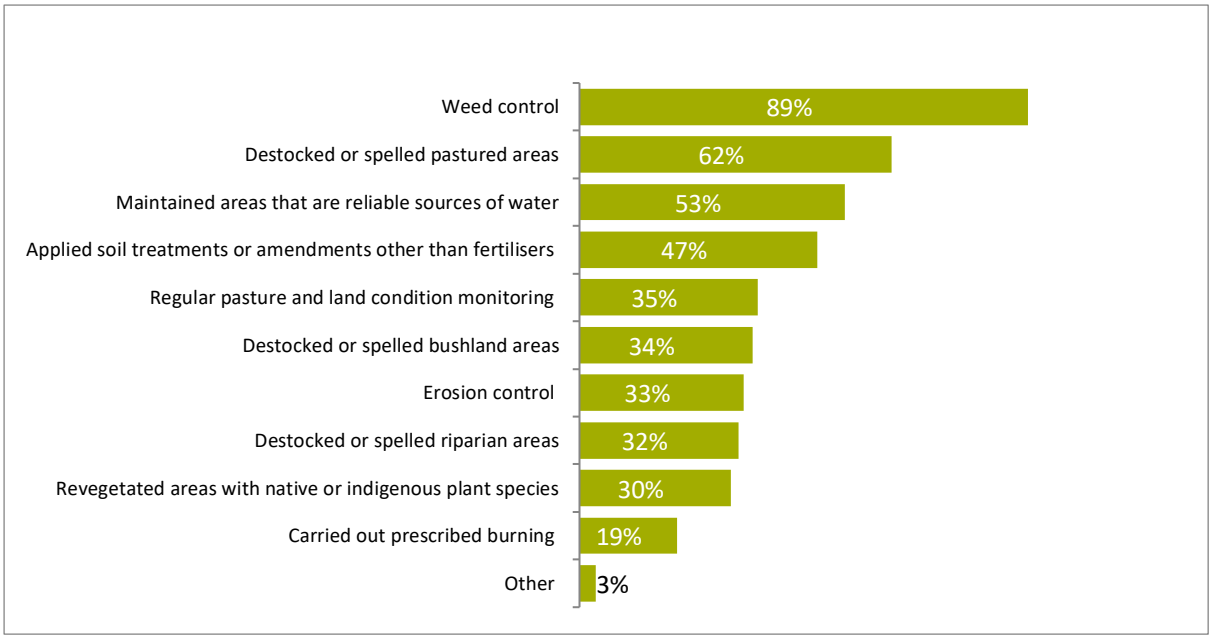
Base: Producers who undertake practices to maintain, measure or enhance biodiversity n = 929



12.3 Which practices do you use to maintain and improve biodiversity on your property?

Figure 97: Land management activities

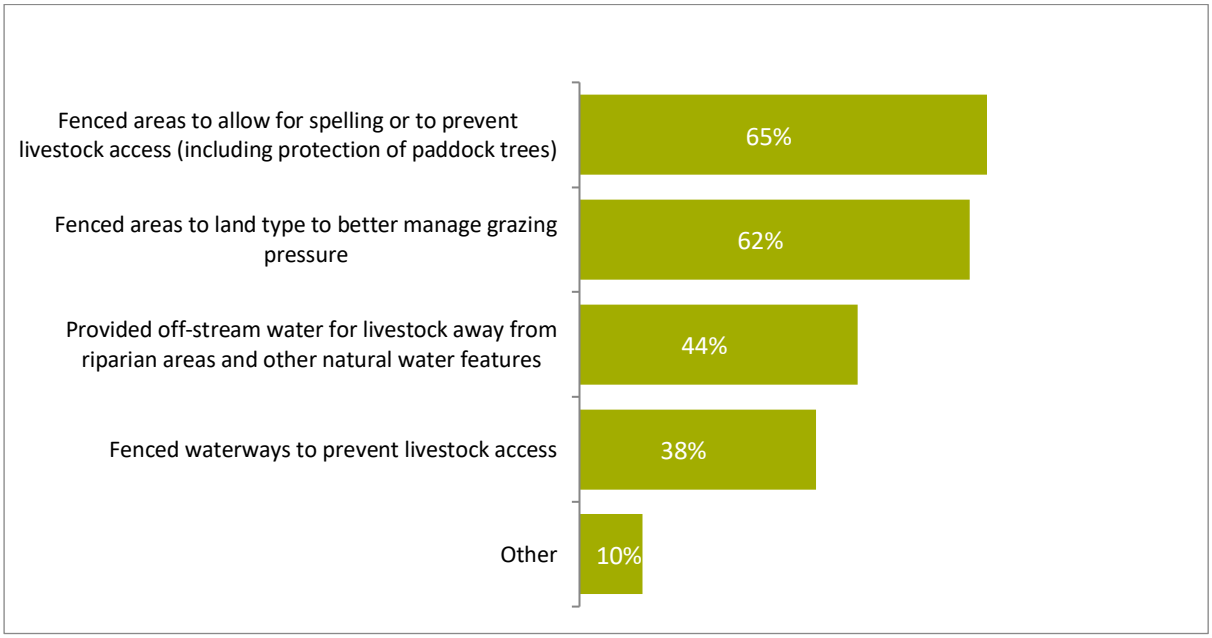
Base: All producers n = 1,268



12.4 Which of the following land management activities did you undertake on your property/ies in 2023?

Figure 98: Grazing management activities

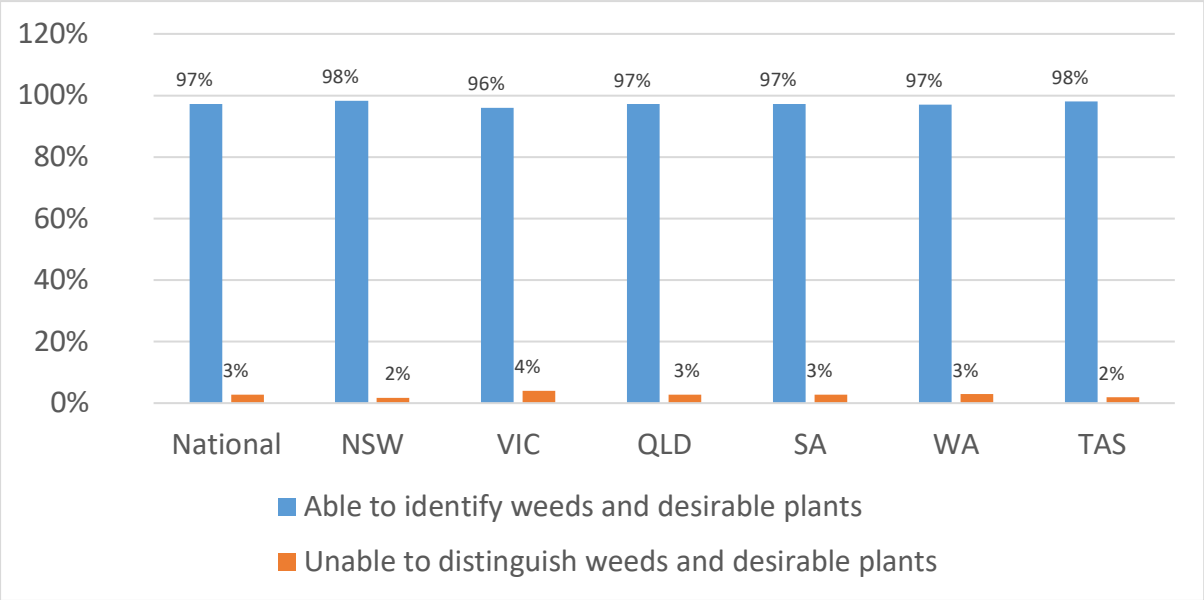
Base: All producers n = 1,268



12.5 Have you previously (in 2023 or earlier) undertaken any of the following grazing management activities on your property?

Figure 99: Identification of weeds

Base: All producers n = 1,268



12.6 Are you able to accurately identify various types of weeds that commonly grow in pasture systems, and distinguish them from desirable plants?

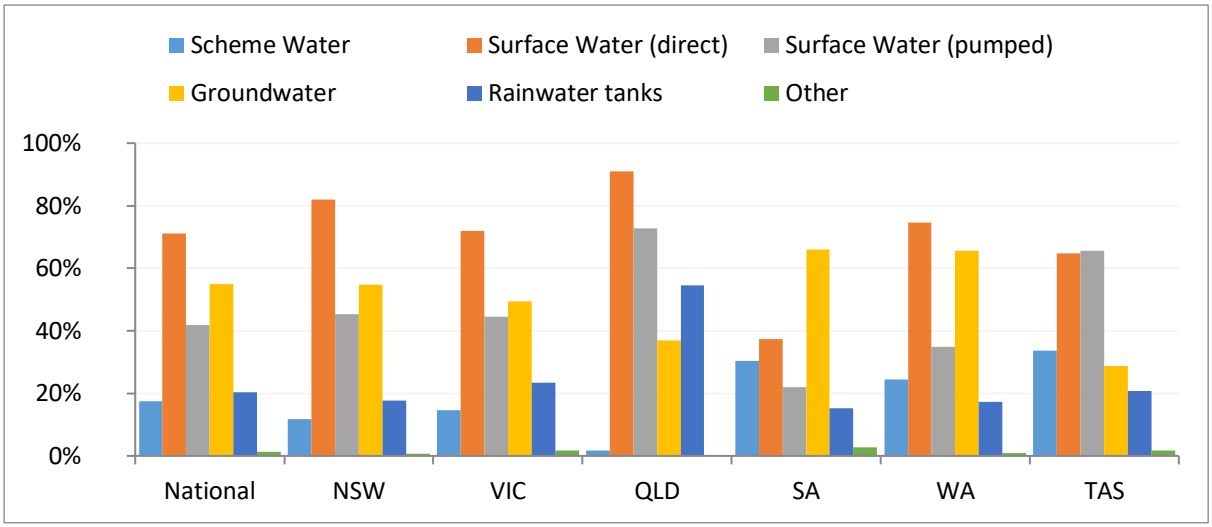
4.13.2 Water management

Nearly three quarters of producers (71%) sourced water for animals from surface water, directly from dams, creeks or rivers (Figure 100). New South Wales producers were most likely to source water directly from surface water (82%), South Australian and Western Australian producers from groundwater (both 66%) and scheme water (30% and 24%, respectively), Tasmanian producers were most likely to use pumped surface water (66%). Merino producers were most likely to use groundwater tanks (62% compared to 48% of non-Merino producers) and less likely to use rainwater (16% compared to 26%) or pumped surface water (36% compared to 48%).

Fewer than one third (30%) of producers had a documented plan for managing their farms and animals during extreme weather (Figure 101), however the vast majority (94%) believe their stock water supplies could withstand prolonged dry periods. 82% were confident that they could increase their stock water supply if needed. Queensland producers were most likely to have a plan for extreme weather (69%). There were no other significant differences.

Figure 100: Water source

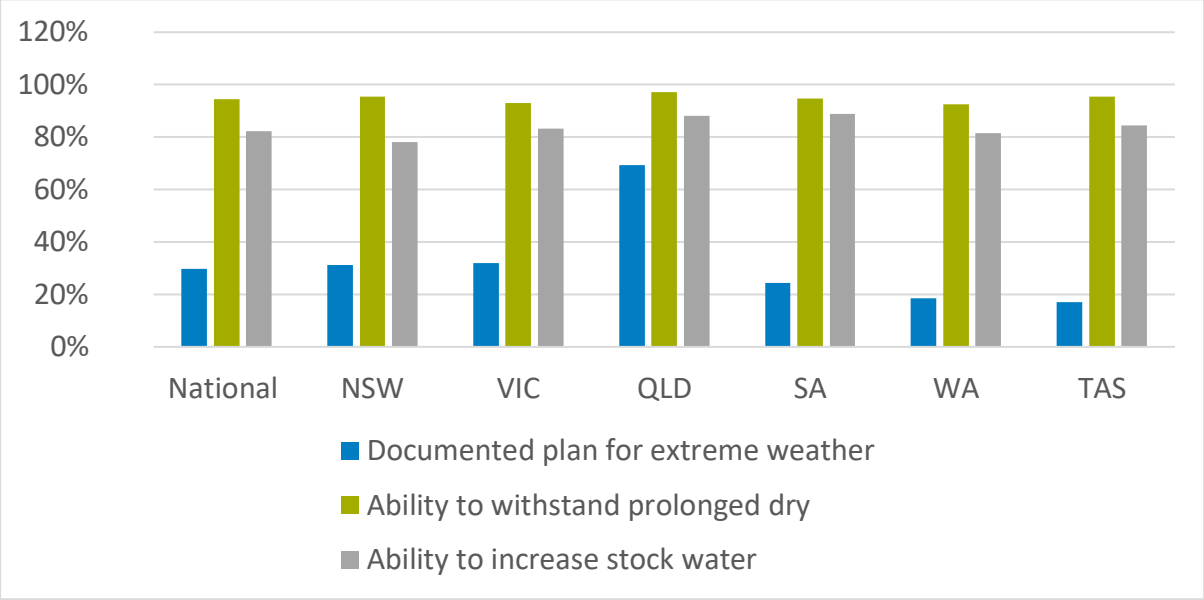
Base: All producers n = 1,268



12.7 What is the source of water for your animals?

Figure 101: Water supply resilience

Base: All producers n = 1,268



12.8 Do you have a documented plan for managing your farm and animals during extreme weather e.g., droughts, extreme heat events and floods?

12.9 Can your stock water supply withstand prolonged dry periods?

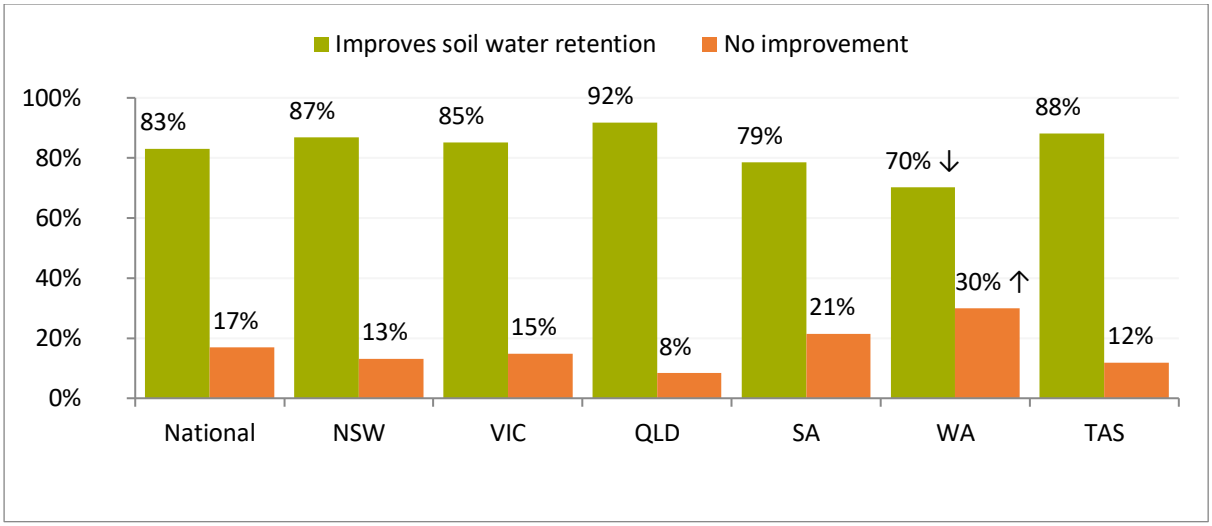
12.10 Can you increase stock water supply if needed?

4.14 Soil management

The majority of producers undertook practices to improve soil water retention (83%) (Figure 102), with Western Australian producers significantly less likely to do so (70%).

Figure 102: Soil water practices

Base: All producers n = 1,268



13.1 Did you undertake practices to improve your soil water retention? (e.g. leaving tall pasture grass stubble, greater grazing rotation, cover cropping, claying, aeration, pasture slashing/mulching, composting)

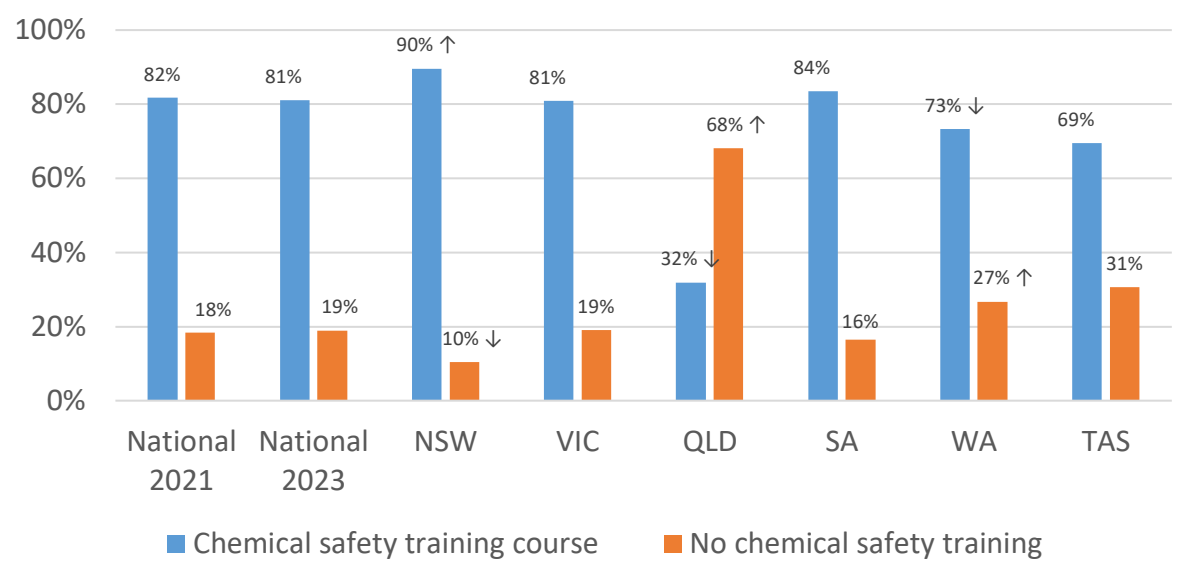
4.15 Chemicals

Nationally, around four fifths of producers (81%) report that they have completed chemical safety training (Figure 103). New South Wales (90%) and Merino producers (86%) were significantly more likely to have completed training. Western Australian (73%), Queensland (32%) and non-Merino (75%) producers were significantly less likely to have completed training.

Nationally, around three quarters of producers (77%) who have completed chemical safety courses report that they have ChemCERT accreditation or a current ChemCERT card (Figure 104). Western Australian (63%) producers were significantly less likely to have completed training. Western Australian producers were also significantly more likely than other states to report not knowing if they had certification (11%).

Figure 103: Attendance at chemical safety training courses

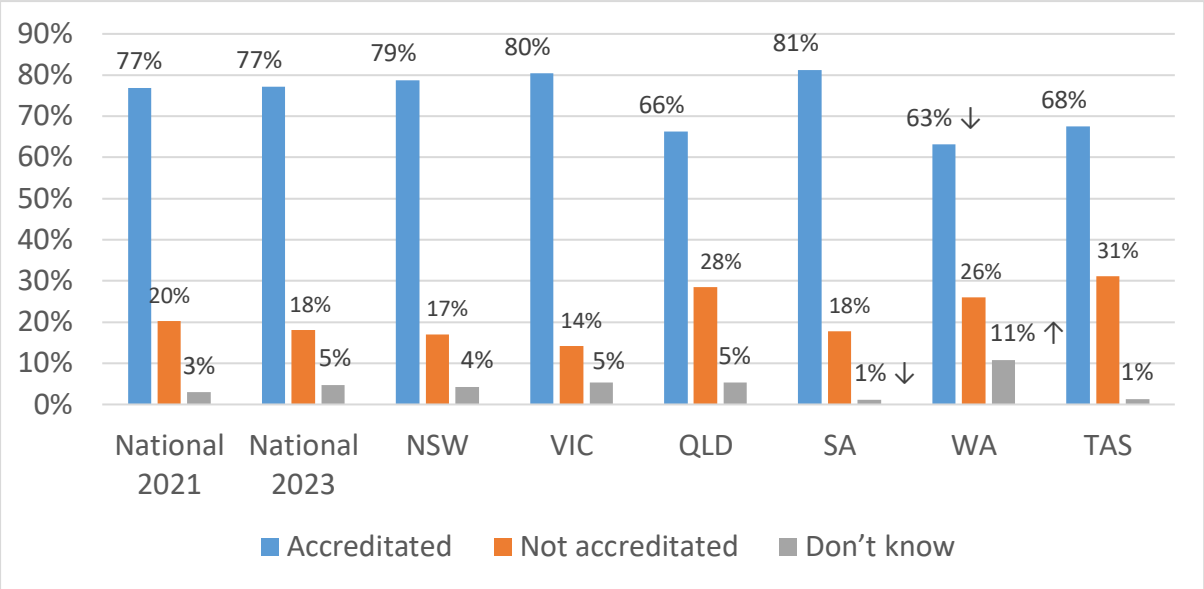
Base: All producers n = 1,268



14.1 Have you done any chemical safety training courses?

Figure 104: Chemical Accreditation Status

Base: Producers who have attended chemical safety training n = 1,075



14.2 Do you have ChemCERT accreditation or hold a current ChemCERT card?

4.16 Training and WHS

Generally, producers had received multiple sources of animal husbandry education (Figure 105). Most commonly, education was informal – either shown to them by another person (78%) or self-taught (58%).

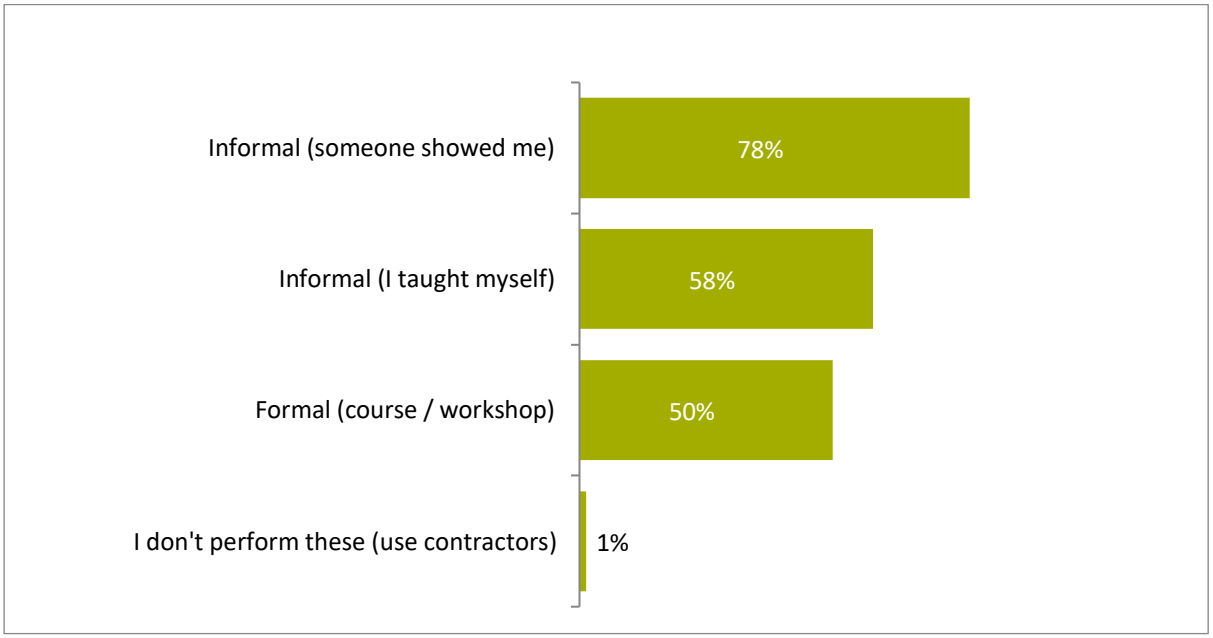
Over half (58%) of producers undertook training or education in 2023 (Figure 106), with Queensland and non-Merino producers significantly more likely to do so (89% and 63% respectively). Merino producers were significantly less likely to do so (54%).

Of those who did undertake training, producers covered multiple topics, with animal health / husbandry (61%) and pasture management / improvement (51%) most popular (Figure 107).

Nationally, 72% of producers have roll over bars on vehicles and 70% encourage workers to identify safety concerns (Figure 108). Across states, there were significant differences when it came to roll bars. Victorian producers were significantly more likely to have roll bars (82%) with Western Australian (62%) producers less likely to have roll bars. Merino producers were most likely to encourage workers to identify concerns (75%) and induct workers in WHS (56%) compared to non-Merino producers (64% and 41% respectively). South Australian and Merino producers were least likely to exclude children under 16 from farming activities (31% and 33% respectively), while non-Merino producers were more likely to exclude children (45%).

Figure 105: Animal husbandry education

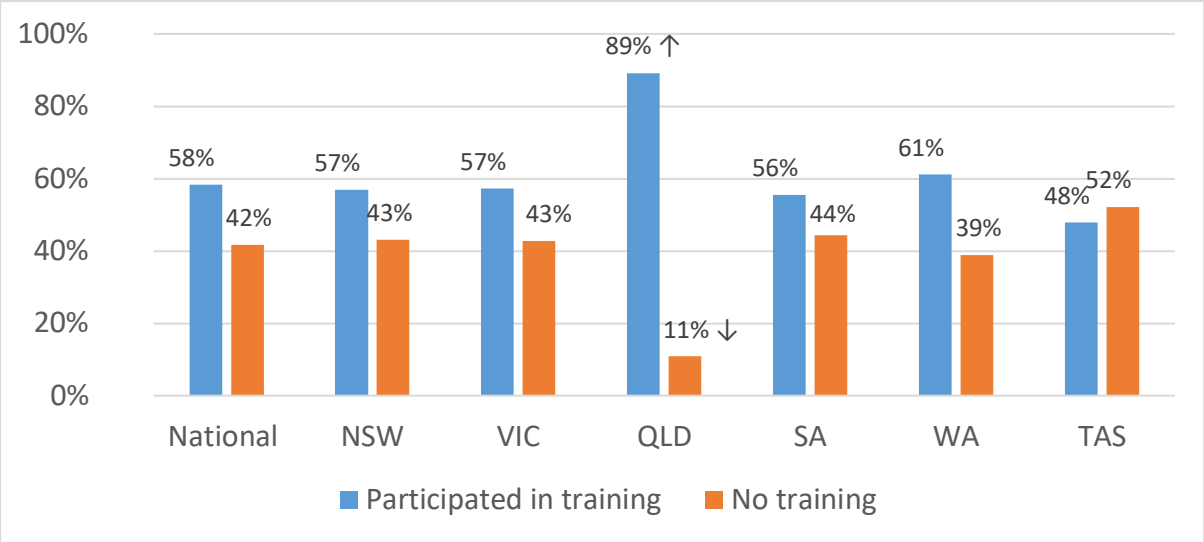
Base: All producers n = 1,268



15.1 How did you learn to perform the various animal husbandry practices undertaken on farm?

Figure 106: Participation in training or education

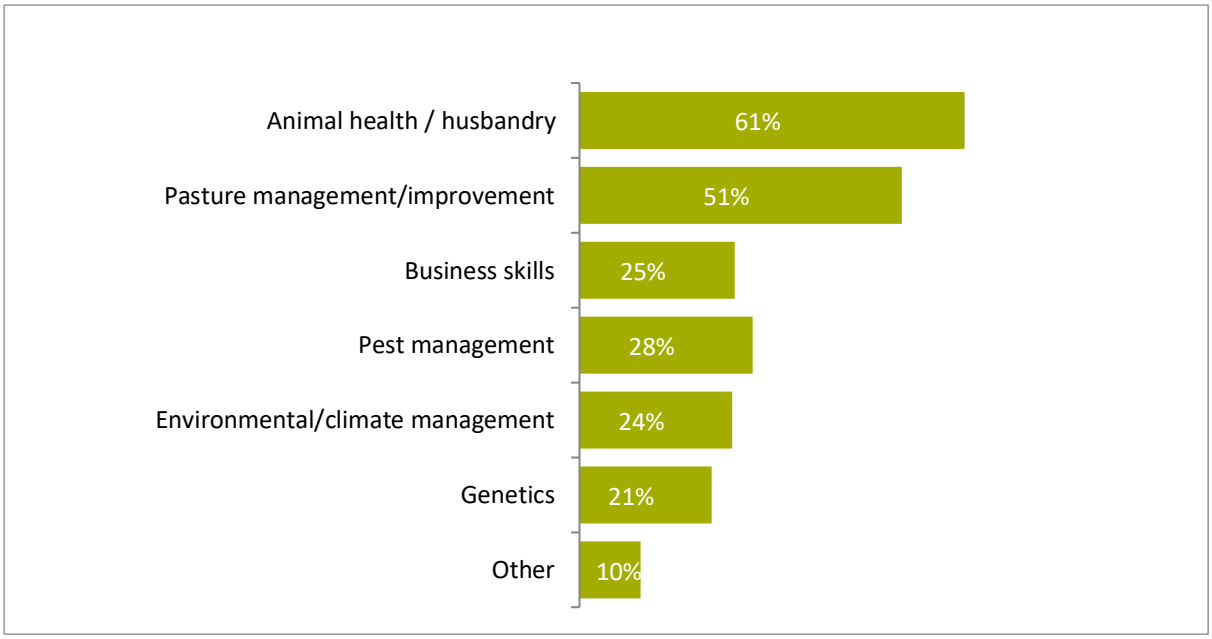
Base: All producers n = 1,267



15.2 In 2023, did you participate in any other training or continued education courses?

Figure 107: Training or education subject matter

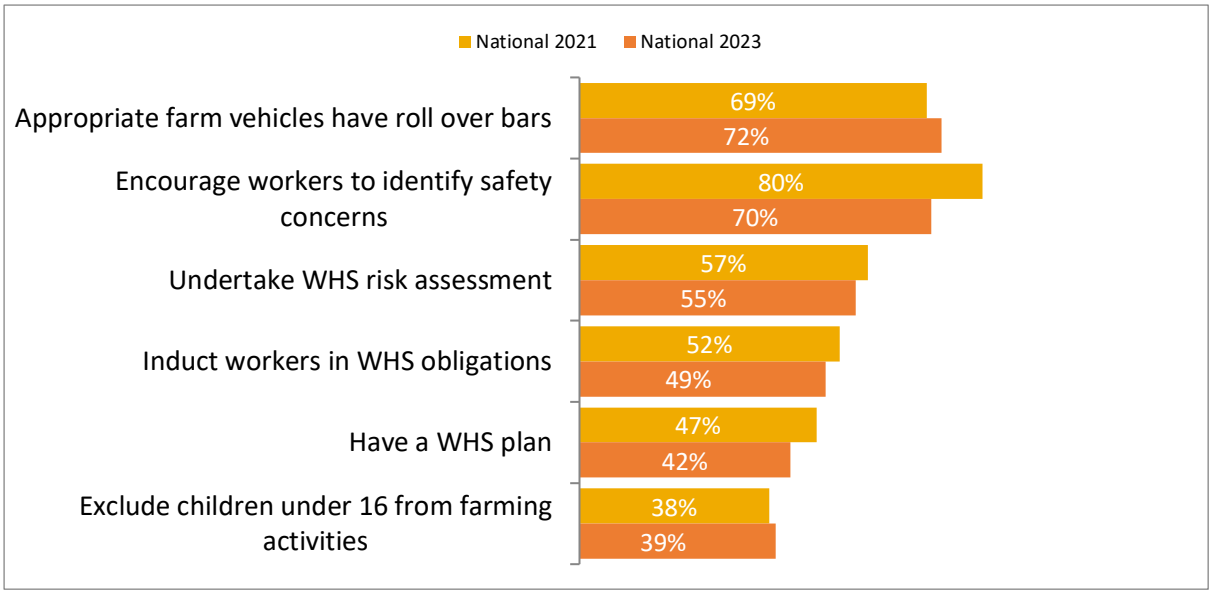
Base: Producers who undertook training or education in 2023 n = 731



15.3 What type of subject matter did the training or continued education courses cover?

Figure 108: Work health and safety on farm

Base: n = 1,268



15.4 Do you have, or are you doing, any of the following in regard to Workplace Health and Safety (WHS) on your farm?

4.17 On-farm issues

Over a third (38%) of producers report no issues with general labour availability, and slightly over two fifths (44%) report no issues with shearer availability (Figure 109). For shearers and general labour, the average rating given by producers was 4.7 and 5.2 respectively. Merino producers were more likely to report problems with general and shearer availability (5.9 and 5.3 respectively) compared to non-Merino (4.4 and 4.2 respectively).

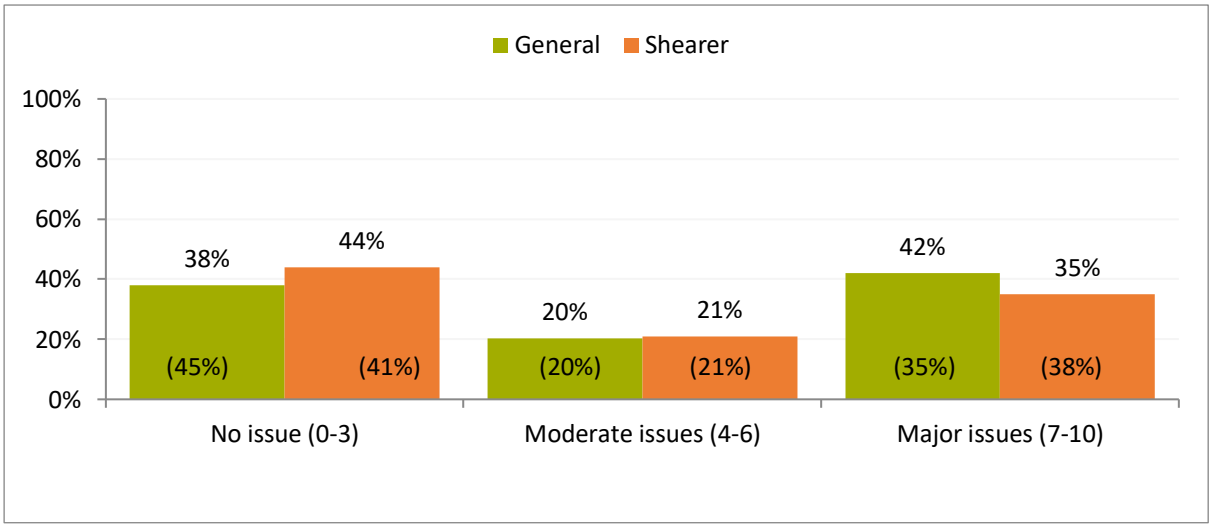
Contractors were the most common additional source of labour in 2023 (61%), 2022 (60%) and 2023 (59%) (Figure 110).

42% of producers had employees (Figure 111), with South Australian and Merino producers more likely to have employees (51% and 53%, respectively). Almost a quarter of these employees are between 25 and 34 years of age (Figure 112), and the majority (80%) are male (Figure 113).

The stage in succession planning is split fairly evenly across producers, with a third (33%) not having started this process yet (Figure 114). Western Australian producers were significantly more likely to have discussed and agreed on a plan with their family than other states (27%). Merino producers (28%) were less likely to say they have only commenced planning compared to non-Merino producers (39%) and were more likely to have a formal plan in place (24% to 16%, respectively).

Figure 109: Labour availability rating out of ten

Base: All producers n = 1,268



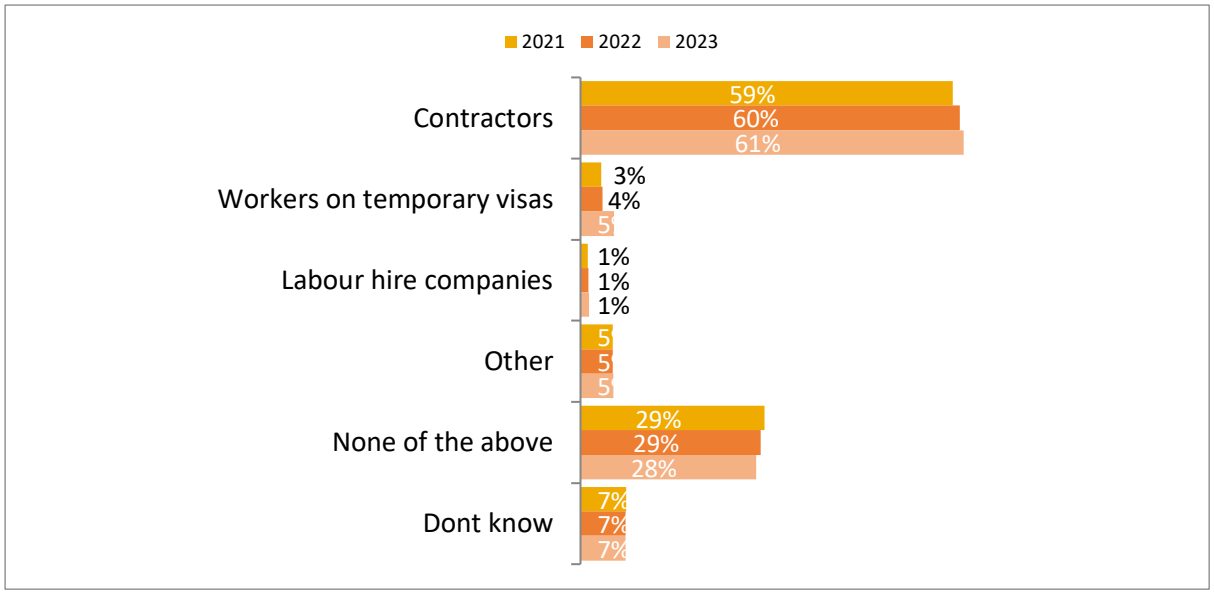
16.1 How much of an issue is the availability of general labour for your sheep operation?

16.2 How much of an issue is the availability of shearers for your sheep operation?

NB. 2021 results in brackets

Figure 110: Additional labour

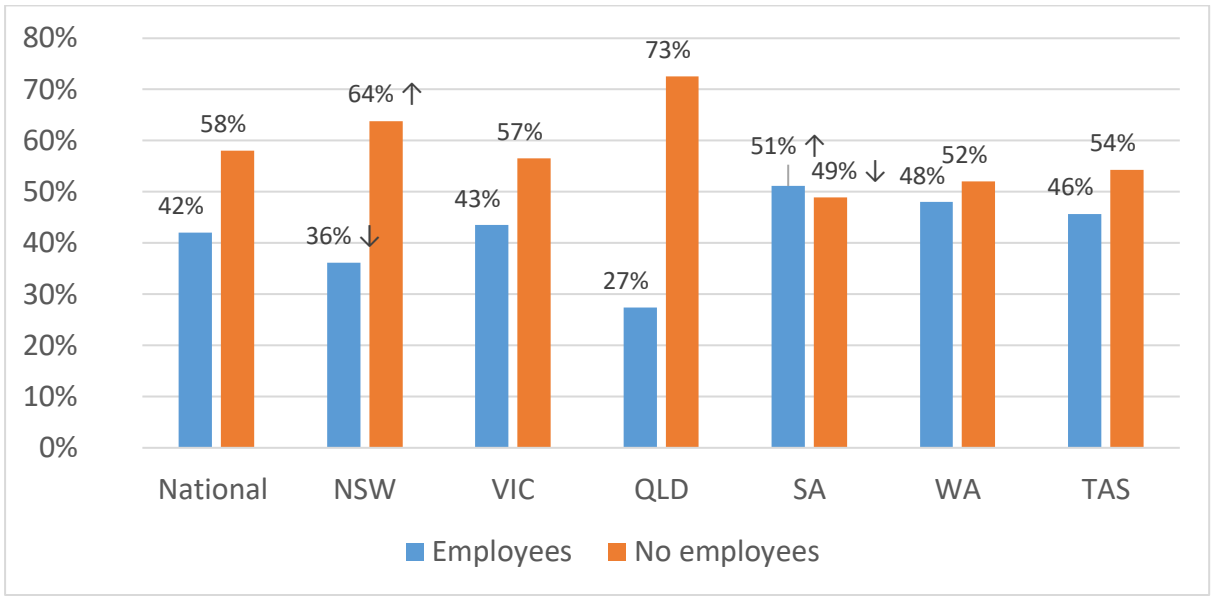
Base: All producers n = 1,268



16.3 Did you use any of the following additional sources of labour for your sheep operation in 2023, 2022 or 2021?

Figure 111: Non-contractor employees

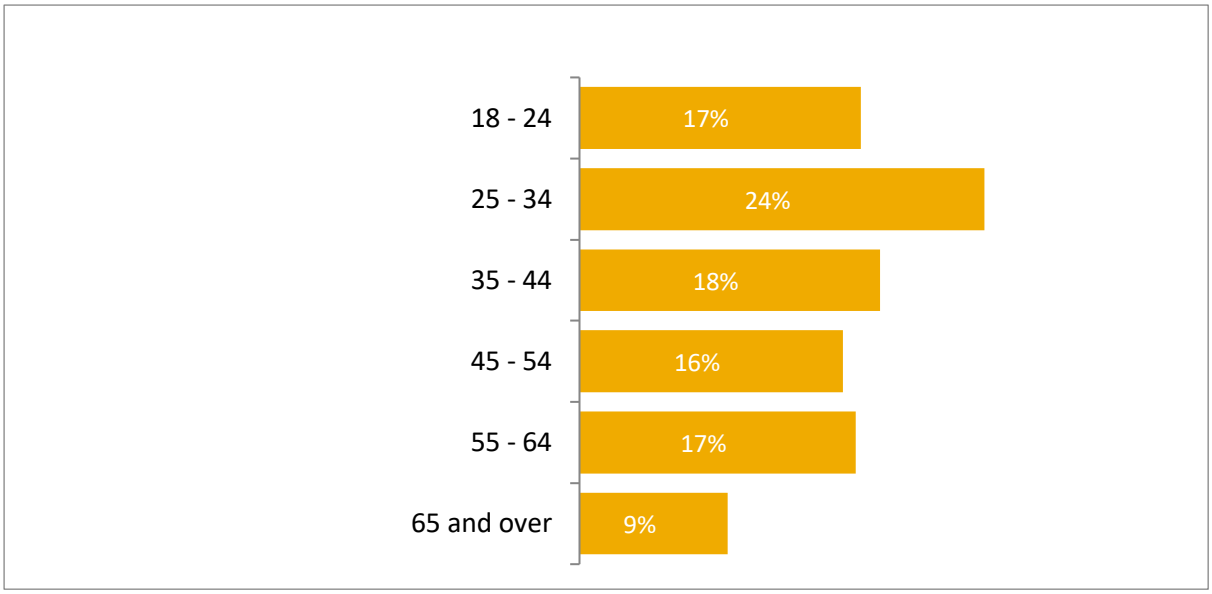
Base: All producers n = 1,268



16.4 Do you have any employees on your property/ies? An employee can be either family or external, full-time, part-time or casual, who is paid a wage and has tax paid on that wage directly by the farm business. It does not include contractors

Figure 112: Age of employees

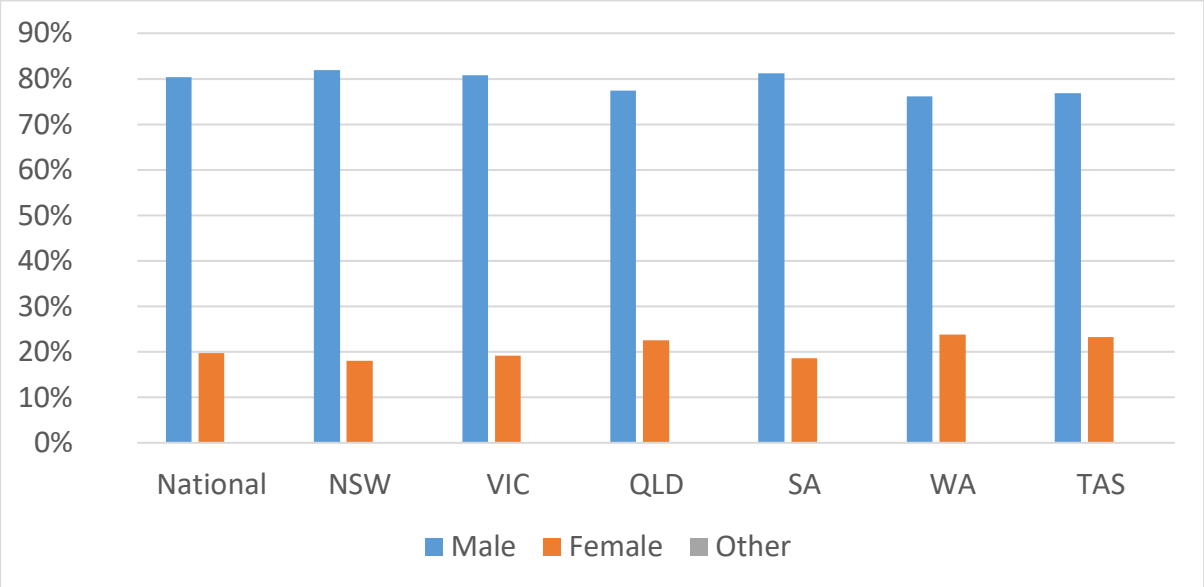
Base: Producers with employees n = 668



16.5 What percentage of your employees (full-time, part-time or casual) fall into the following age groups?

Figure 113: Gender of employees

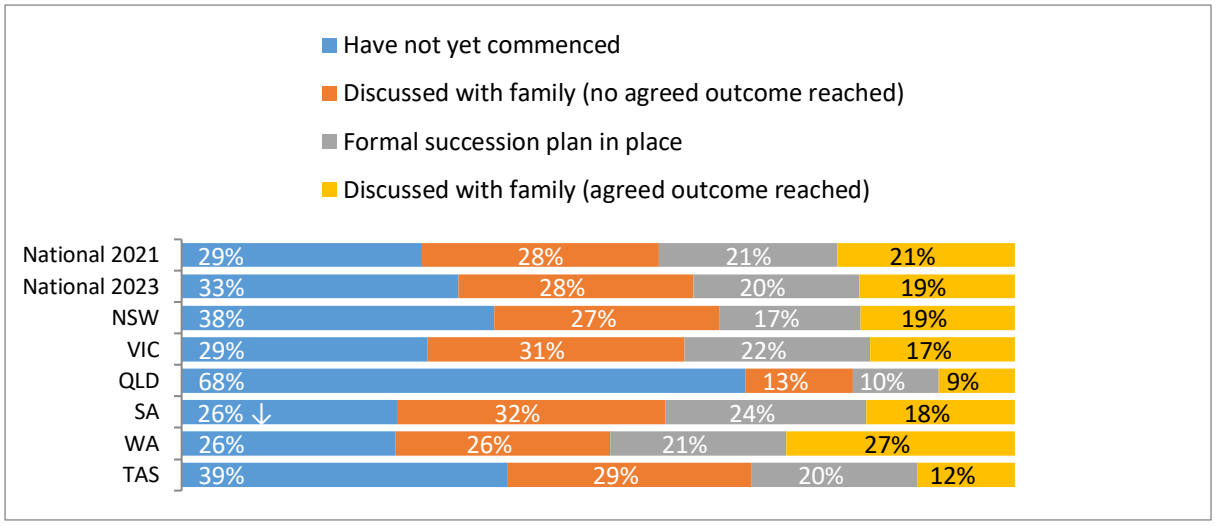
Base: Producers with employees n = 668



16.6 What percentage of your employees (full-time, part-time or casual) fall into the following categories?

Figure 114: Succession planning by state

Base: All producers n = 1,268



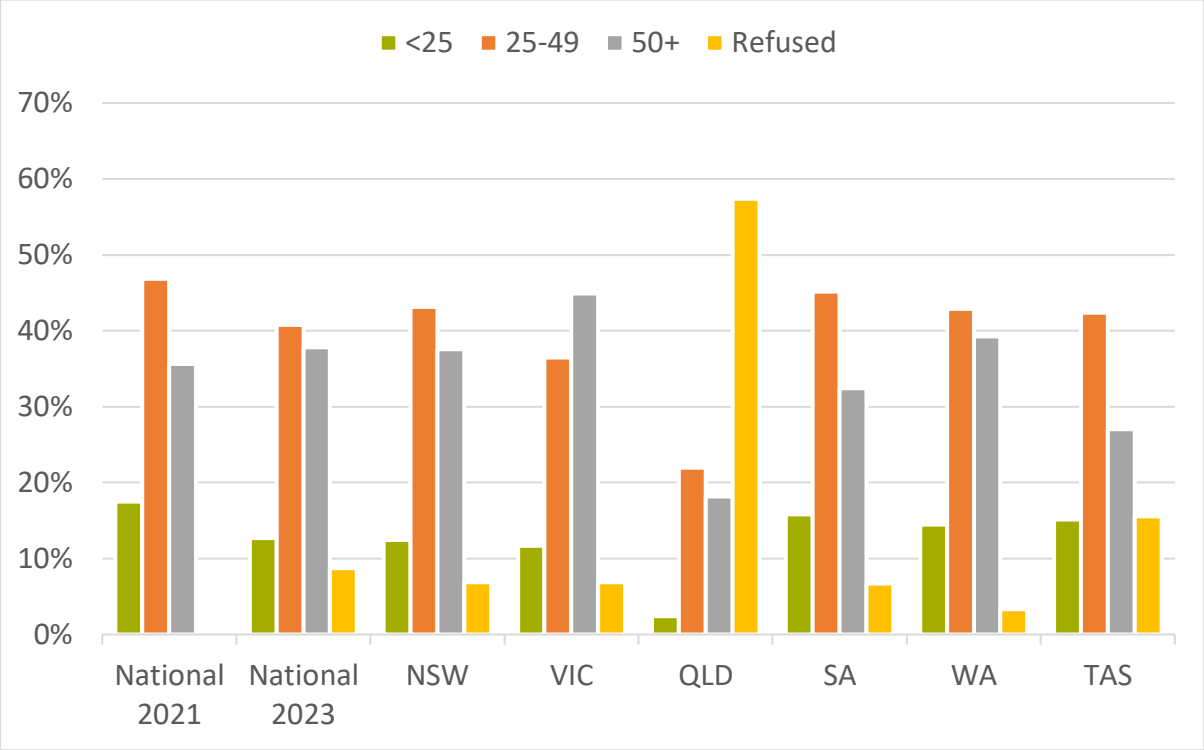
16.7 Which of the following best describes the stage you are at in relation to succession planning for your property?

4.18 Final demographics

On average, producers had been farming for 42.7 years. Nationally, the largest age segment of interviewed producers was those who had been involved in farming from 25-49 years (41%) (Figure 115). Victorian producers were more likely to have been farming 50+ years (45%). Queensland producers were significantly more likely to refuse to name how long they had been farming (57%).

Figure 115: Years in farming

Base: n = 1,268



17.1 How many years have you been involved with farming?

5. Comparison with 2010, 2016 and 2021 results

Where relevant, comparisons were made between the survey results in 2010, 2016, 2021 and 2023. These results are shown in Table 5 to Table 8.

5.1.1 Joining, Scanning and Weaning

The average joining period in 2023 was 11.3 weeks, almost half a week higher than the average age reported in 2021. The incidence of pregnancy scanning was 45%, in line with 42% in 2021. Likewise, the use of scanning for dry, single and multiples was 70%, in line with 69% in 2021

Table 5: Scanning and weaning

	2010	2016	2021	2023
Average joining period	-	9.1 weeks	10.9	11.3
Pregnancy scan	-	50%	42%	45%
Of those scanning:				
Dry, single and multiple	-	62%	69%	70%
Wet versus dry	-	38%	31%	30%

5.1.2 Castration

Following a shift away from using a cold knife / scalpel towards rings for castration between 2010 and 2016, rings have maintained widespread adoption in 2023 (99%).

Table 6: Castration method

Method	2010	2016	2021	2023
Rings	89%	97%	98%	99%
Cold knife / Scalpel	10%	3%	2%	2%

5.1.3 Tail docking

Use of rings for tail was similar in 2023 (49% in ewes, 51% in male lambs) to 2021 (52%, 52% respectively). Use of hot knife and cold knife for tail docking was in line with 2021 with hot knife now used by 48% - 49% of producers and cold knife only used by 2-3% of producers.

Table 7: Tail docking method

Method	2010	2016	2021	2023
Rings – ewe lambs	34%	36%	52%	49%
Rings – male lambs			52%	51%
Hot knife – ewe lambs	61%	58%	44%	49%
Hot knife – male lambs			43%	48%
Cold knife – ewe lambs	11%	6%	3%	3%
Cold knife – male lambs			3%	2%
Shears – ewe lambs	1%	-	1%	2%
Shears – male lambs			1%	1%

5.1.4 Predators

The incidence of sheep producers having a problem with predators remained stable between 2021 and 2023 (78% and 75% respectively). Foxes remained the primary predator in 2023 being cited by 9 out 10 of these producers, a level consistent with previous years. The incidence of predatory birds stood at 51%, consistent with 54% in 2021. Problems with pigs were 14% in 2021, similar to 11% in 2023.

Table 8: Predators

	2010	2016	2021	2023
Problem with predators	93%	80%	78%	75%
Foxes	88%	90%	89%	92%
Crows	19%	43%	54%	51%
Eagles / Hawks	21%			
Dingoes	3%	14%	14%	11%
Wild dogs	7%			
Pigs	7%	12%	14%	12%

6. Conclusion and recommendations

6.1 Conclusions

The conclusion from the research is that sheep producers are adopting a range of practices and behaviours that contribute towards the sustainability of the Australian sheep industry. These include:

1. Sheep husbandry practices such as scanning, joining, tail docking, castration, mulesing, weaning and vaccination,
2. Management strategies and standards related to predators, animal welfare, quality assurance, succession planning, chemical training and WHS, and
3. Environmental strategies including renewable energy, carbon accounting and emissions measurement and reduction, biodiversity, soil and water management.

While the researchers cannot conclude whether the adoption of relevant behaviours and strategies identified in this survey are at an acceptable level to meet the sheep industry's specific sustainability objectives, the research has provided the tracking data and compared this to the benchmark data to guide MLA's and AWI's investment and project planning initiatives targeted at sheep producers.

6.2 Recommendations

1. Explore the understanding and use of different types of pain management products

The research has identified that some sheep producers are still using inappropriate pain management products for the specific animal husbandry practice. This could reflect a lack of understanding of the specific pain management product needed for that practice or that multiple animal husbandry practices are being conducted at the same time with the product appropriate for one practice but not the other. Further quantitative or qualitative research should be considered to explore this issue in more detail and provide further guidance for the communication and extension strategies needed

2. Consider streamlining questions involving ewe lambs and male lambs

As in 2021, questions for some animal husbandry practices such as tail docking and mulesing were asked separately for ewe lambs and male lambs. While there is merit in this, it can lead to some challenges where a single metric for all lambs is needed for the Sustainability Framework as averaging across ewe lambs and male lambs is required to create a single metric. Separate measurement of ewe lambs and male lambs also means that comparisons with previous industry surveys where a single metric for all lambs was collected is not possible. In addition, many separate questions for ewe lambs and male lambs can cause frustration and survey fatigue for respondents. Further industry discussion is recommended to decide on the preferred method to measure these practices.

7. Appendices

7.1 Sampling

Table 9: State and flock size quotas and samples

	100 – 499 head		500 – 1,999 head		2,000 + head		Total	
State	Quota	Sample	Quota	Sample	Quota	Sample	Quota	Sample
NSW	184	65	133	123	128	680	444	408
VIC	171	38	109	99	75	220	355	290
QLD	34	5	8	11	11	153	53	45
SA	61	40	69	102	56	29	186	269
WA	50	21	39	57	72	127	161	200
TAS	31	8	9	19	9	122	50	56
Total	531	177	368	411	352	29	1250	1268

Table 10: Margin of error for survey results based on different sample sizes*

	Survey Result									
Sample	**5%/95%**	**10%/90%**	**15%/85%**	**20%/80%**	**25%/75%**	**30%/70%**	**35%/65%**	**40%/60%**	**45%/55%**	**50%**
25	9	12	14	16	17	18	19	19	20	20
50	6	8	10	11	12	13	14	13	14	14
75	5	7	8	9	10	10	11	11	11	11
100	4	6	7	8	9	9	10	10	10	10
200	3	4	5	6	6	6	7	7	7	7
300	3	4	4	5	5	5	6	6	6	6
400	2	3	4	4	4	5	5	5	5	5
500	2	3	3	3	4	4	4	4	4	4
600	2	2	3	3	3	4	4	4	4	4
700	2	2	3	3	3	3	4	4	4	4
800	2	2	2	3	3	3	3	3	3	3
900	1	2	2	3	3	3	3	3	3	3
1,200	1	2	2	2	2	3	3	3	3	3

*Based on 95% confidence level

As a guide to interpretation, a survey result of 30% from a sample of 1,268 respondents (eg producers who scan for pregnant or not pregnant) would have a margin of error of 2 percentage points, that is, you are 95% confident that the true answer would lie between 28% and 32%. A result of 30% from a sample of 201 respondents (eg Western Australia) would have a higher error of plus / minus 6%.

7.2 Survey questions

Section 1: Demographic Screeners

S1	Which state is your main sheep enterprise located?		
	NSW	1	***CHECK QUOTA***
	VIC	2	
	QLD	3	
	SA	4	
	WA	5	
	TAS	6	
	NT	7	

S2	What is the postcode of your main sheep enterprise? **Postcode** ☐☐☐☐

S3	To make sure we are interviewing a representative cross section of producers, over the last 3 full financial years, what percentage of your gross farm income, that is, only income from your property, came from the following activities? *STOP WHEN TOTAL REACHES 100%*	Record %	
	Beef cattle		
	Sheep for wool and / or mutton		
	Lambs for meat		
	Lambs for wool		
	Grains		
	Sugar cane		
	Other crops		
	Other livestock		

S4	Which of the following breeds comprise your sheep flock? Please select all that apply SHOW. MULTIPLE		
	Merino	1	
	Breeds other than Merino	2	

S4	Which of the following breeds comprise your sheep flock? Please select all that apply SHOW. MULTIPLE		
	Merino Horn	1	
	Merino Poll	2	
	Dohne Merino (*pronounced Doo-nee*)	3	
	South African Meat Merino (SAMM)	4	***ALLOCATE TO NON-MERINO SAMPLE (CODE 'NON-MERINO')***
	Breeds other than Merino and Dohne Merino	5	

S5	ASK IF CODE MERINO AT S4 In 2023, how many maiden and mixed age merino ewes did you join to <u>merino</u> rams?	
	Maiden merino ewes	
	Mixed age merino ewes	
	(AUTO SUM) Total Merino breeding ewes	
	None	0

S5	ASK IF CODE MERINO AT S4 In 2023, how many maiden and mixed age merino ewes did you join to <u>merino</u> rams?		
	Maiden merino ewes		***ALLOCATE TO MERINO SAMPLE (CODE 'MERINO')***
	Mixed age merino ewes		
	(AUTO SUM) Total merino breeding ewes		
	None	00	***ALLOCATE TO NON-MERINO SAMPLE (CODE 'NON-MERINO')***

ASSIGN TOTAL NUMBER OF MERINO BREEDING EWES AT S5 TO THE FOLLOWING CATEGORIES

S6	250 or less	
	251 – 500	
	501 – 1,000	
	1,001 – 2,000	
	2,000 +	

S7	As of 31 January 2024, approximately how many sheep were in your flock, including breeding and dry ewes, lambs, wethers and rams? RECORD NUMBER	
	Breeding ewes	
	Dry ewes	
	Lambs	
	Wethers	

S8	100 - 499	1	***CHECK STATE FLOCK SIZE QUOTAS***
	500 – 999	2	
	1,000 – 1,999	3	
	2,000 – 2,999	4	
	3,000 +	5	

Section 2: Flock Demographics

Firstly, we would like to ask some questions on the characteristics of your flock.

2.1	What percent of your sires are horned and what percent are polled?	%
	Horned	
	Polled	

2.2	ASK IF CODE MERINO AT S4 What is your average adult merino ewe micron? SINGLE RESPONSE	
	Less than 15	1
	15	2
	16	3
	17	4
	18	5
	19	6
	20	7
	21	8
	22	9
	23	10
	24	11
	Greater than 24	12

2.3	Which of the following best describes your average mixed age ewe body wrinkle? Would it be … (READ OUT)? SINGLE	
	Low (Sc1)	1
	Medium (Sc2)	2
	High (Sc3 or above)	3

Section 3: Joining / Scanning

We'd like to ask some questions about joining and scanning your sheep

3.1	How many weeks do you join your ewes to your rams? IF ALL YEAR JOINING, ENTER "52" | | | | Number of weeks	

3.2	Do you pregnancy scan your ewes? SHOW. SINGLE	
	Yes	1
	No	2

ASK 3.3 – 3.4 IF CODE 1 AT 3.2

3.3	Which of the following do you scan for? SHOW. SINGLE	
	Pregnant or not pregnant	1
	Not pregnant, single and multiple foetuses	2

3.4	How many days after rams in do you scan? | | | | days	

3.5	Do you manage twin lambs separately? SINGLE	
	Yes	1
	No	2

Section 4: Tail Docking

Thinking now about tail docking in your sheep operation

EWE LAMBS

4.0	How many ewe lambs did you have on your property/ies in 2023?	Number

4.1	Do you tail dock your ewe lambs? SHOW. SINGLE		
	Yes	1	***CONTINUE***
	No	2	***GO TO 4.5.1***

4.1.1	How many ewe lambs did you tail dock in 2023?	Number

4.2	ASK IF CODE 1 AT 4.1 What method do you use to tail dock ewes? SHOW. MULTIPLE. RANDOMISE	
	Cold knife	1
	Hot knife	2
	Rings	3
	Shears	4
	Other (Please specify)	98

4.3	Why do you use (SHOW METHOD SELECTED AT 4.2) to tail dock your ewes? SHOW. MULTIPLE. RANDOMISE	
	Better / preferable method, suits my program / operation	1
	Bloodless / seals the wound	2
	Clean / Neat	3
	Contractor preferred method	4
	Cost effective	5
	Easy to use	6
	Effective	7
	Efficient	8
	Less fly strike	9
	Less infection	10
	Less stress / farm to animals / recovery	11
	Operator safety	12
	Quick	13
	Reliable	14
	Other (Please specify)	98

4.4	At what length do you dock ewe lambs' tails? SHOW. SINGLE	
	1 joint	1
	2 joints	2
	3 joints	3
	4 joints	4
	Other (Please specify)	98

4.5	Why did you choose this tail length for your ewes? SHOW. MULTIPLE. RANDOMISE	
	Allow tail movement / flick away flies / help prevent breech strike	1
	Farm tradition	2
	For specific health reasons such as prolapse, nerve damage, arthritis	3
	Industry standard / best practice	4
	Keeps the area clean	5
	Length decided by contractor	6
	Prefer a longer tail / aesthetic reasons	7
	Protect the genital area	8
	Provide sun protection / prevent skin cancers	9
	Satisfactory length / easy to manage	10
	Suits our operation	11
	Other (Please specify)	98

MALE LAMBS

4.5.1	How many male lambs did you have on your property/ies in 2023?	Number

4.6	Do you tail dock your male lambs? SHOW. SINGLE		
	Yes	1	***CONTINUE***
	No	2	***IF CODE 2 AT BOTH 4.1 AND 4.6, GO TO 5.1 IF CODE 2 AT 4.6 BUT CODE 1 AT 4.1, GO TO 4.11***

4.6.1	How many male lambs did you tail dock in 2023?	Number

4.7	ASK IF CODE 1 AT 4.6 What method do you use to tail dock male lambs? SHOW. MULTIPLE. RANDOMISE	
	Cold knife	1
	Hot knife	2
	Rings	3
	Shears	4
	Other (Please specify)	98

4.8	ASK FOR CODES 1 – 4 SELECTED AT 4.7 Why do you use (SHOW METHOD SELECTED AT 4.7) to tail dock your male lambs? SHOW. MULTIPLE. RANDOMISE	
	Better / preferable method, suits my program / operation	1
	Bloodless / seals the wound	2
	Clean / Neat	3
	Contractor preferred method	4
	Cost effective	5
	Easy to use	6
	Effective	7
	Efficient	8
	Less fly strike	9
	Less infection	10
	Less stress / farm to animals / recovery	11
	Operator safety	12
	Quick	13
	Reliable	14
	Other (Please specify)	98

4.9	At what length do you dock male lambs' tails? SHOW. SINGLE	
	1 joint	1
	2 joints	2
	3 joints	3
	4 joints	4
	Other (Please specify)	8

4.10	Why did you choose this tail length for your male lambs? SHOW. MULTIPLE. RANDOMISE	
	Allow tail movement / flick away flies / help prevent breech strike	1
	Farm tradition	2
	For specific health reasons such as prolapse, nerve damage, arthritis	3
	Industry standard / best practice	4
	Keeps the area clean	5
	Length decided by contractor	6
	Prefer a longer tail / aesthetic reasons	7
	Protect the genital area	8
	Provide sun protection / prevent skin cancers	9
	Satisfactory length / easy to manage	10
	Suits our operation	11
	Other (Please specify)	98

4.11	Why do you tail dock either your ewe or male lambs? SHOW. MULTIPLE. RANDOMISE	
	Reduce risk of flystrike or disease	1
	Farm tradition	2
	Sheep industry standard	3
	Clean/neat appearance	4
	Other (Please specify)	98

4.12	ASK IF CODE 1 AT 4.1 Did you use any products for pain management for tail docking your ewe lambs in 2023?	
	Yes	1
	No	2

4.12.1	ASK IF CODE 1 AT 4.12 Of the (SHOW NUMBER AT 4.1.1) ewe lambs you tail docked in 2023, how many did you use pain management on for tail docking? NUMBER CANNOT BE GREATER THAN 4.1.1	Number

4.12.2	ASK IF CODE 1 AT 4.6 Did you use any products for pain management for tail docking your male lambs in 2023?	
	Yes	1
	No	2

4.12.3	ASK IF CODE 1 AT 4.12.2 Of the (SHOW NUMBER AT 4.6.1) male lambs you tail docked in 2023, how many did you use pain management on for tail docking? NUMBER CANNOT BE GREATER THAN 4.6.1	Number

4.13	ASK IF CODE 1 AT 4.12 or 4.12.2 What type of product/s did you use? Examples of product types are shown in brackets SHOW. MULTIPLE	
	Anaesthetic injection at the surgery site (e.g. Numnuts®)	1
	Anaesthetic and antiseptic spray at the surgery site (e.g. Tri-Solfen®)	2
	Analgesic / pain killing injection (e.g. Meloxicam)	3
	Analgesic / pain killing oral gel – veterinary prescribed (e.g. Buccalgesic(R))	4
	Analgesic / pain killing oral gel – non-veterinary prescribed (e.g. Butec)	5
	Other (Please specify)	98

4.14	ASK FOR CODES 1 – 5 AT 4.13 Why did you use this product? SHOW. MULTIPLE. RANDOMISE	
	Availability / unaware of other products	1
	Easy to apply	2
	Effective product	3
	Fast recovery / promotes healing / minimal bleeding	4
	Have always used it	5
	Improved animal health and welfare	6
	Industry standard	7
	It works / reduces pain	8
	Lambs quick to mother-up following treatment	9
	Lasts longer	10
	Recommended by retailer / contractor/ stock agent	11
	Recommended by vet	12
	Other (Please specify)	98

4.15	ASK IF CODE 2 AT 4.12 or 4.12.2 Why didn't you use pain management? SHOW. MULTIPLE. RANDOMISE	
	Not necessary	1
	Quick procedure / not practical	2
	Vet hasn't suggested it	3
	Added stress / time	4
	Too expensive	5
	Don't know what to use	6
	No reason / have not considered it	7
	Nothing readily available	8
	Other (Please specify)	98
	Don't know	99

Section 5: Castration

We now like to ask you some questions about castration in your sheep operation.

5.1.0	Do you castrate your male lambs? SHOW. SINGLE		
	Yes	1	***CONTINUE***
	No	2	***GO TO SECTION 6***

5.1.01	How many male lambs did you castrate in 2023?	Number

5.1.1	Why do you castrate your male lambs? SHOW. MULTIPLE. RANDOMISE	
	Prevent unwanted pregnancies in a mixed-sex flock	1
	Farm tradition	2
	Risk of producing meat that has a stronger flavour	3
	Sheep industry standard	4
	Market requirements	5
	Other (Please specify)	98

5.2	What method do you use to castrate male lambs? SHOW. MULTIPLE	
	Cold knife	1
	Rings	2
	Shears / Knife and mouth	3
	Other (Please specify)	98

5.3	Did you use any products for pain management for castrating your male lambs in 2023?	
	Yes	1
	No	2

5.3.1	ASK IF CODE 1 AT 5.3 Of the (SHOW NUMBER AT 5.1.01) male lambs you castrated in 2023, how many did you use pain management on for castrating? NUMBER CANNOT BE GREATER THAN 5.1.01	Number

5.4	ASK IF CODE 1 AT 5.3 What type of product/s did you use? Examples of product types are shown in brackets SHOW. MULTIPLE	
	Anaesthetic injection at the surgery site (e.g. Numnuts®)	1
	Anaesthetic and antiseptic spray at the surgery site (e.g. Tri-Solfen®)	2
	Analgesic / pain killing injection (e.g. Meloxicam)	3
	Analgesic / pain killing oral gel – veterinary prescribed (e.g. Buccalgesic)	4
	Analgesic / pain killing oral gel – non-veterinary prescribed (e.g. Butec)	5
	Other (Please specify)	98

5.5	ASK FOR CODES 1 – 5 AT 5.4 Why did you use this product? SHOW. MULTIPLE. RANDOMISE	
	Availability / unaware of other products	1
	Easy to apply	2
	Effective product	3
	Fast recovery / promotes healing / minimal bleeding	4
	Have always used it	5
	Improved animal health and welfare	6
	Industry standard	7
	It works / reduces pain	8
	Lambs quick to mother-up following treatment	9
	Lasts longer	10
	Recommended by retailer / contractor/ stock agent	11
	Recommended by vet	12
	Other (Please specify)	98

5.6	ASK IF CODE 2 AT 5.3 Why didn't you use pain management? SHOW. MULTIPLE. RANDOMISE	
	Not necessary	1
	Quick procedure / not practical	2
	Vet hasn't suggested it	3
	Added stress / time	4
	Too expensive	5
	Don't know what to use	6
	No reason / have not considered it	7
	Nothing readily available	8
	Other (Please specify)	98
	Don't know	99

Section 6: Mulesing

Could you now please think about mulesing in your sheep operation.

6.1	Did you mules your ewe lambs in 2023?	
	Yes	1
	No	2

6.1.1	You indicated that you had (SHOW NUMBER FROM 4.0) ewe lambs on your property/ies in 2023. How many ewe lambs did you mules in 2023?	Number

6.2	Did you mules your male lambs in 2023? SHOW. SINGLE		
	Yes	1	***CONTINUE***
	No	2	***IF CODE 2 AT BOTH 6.1 AND 6.2, GO TO 6.9 IF CODE 2 AT 6.1 BUT CODE 1 AT 6.2, GO TO 6.2.2***

6.2.1	You indicated that you had (SHOW NUMBER FROM 4.5.1) male lambs on your property/ies in 2023. How many male lambs did you mules in 2023?	Number

6.2.2	Why do you mules your lambs? SHOW. MULTIPLE. RANDOMISE	
	Reduce risk of flystrike	1
	Farm tradition	2
	Increased value of mulesed sheep	3
	Easier access to shearers	4
	No premiums for non-mulesed wool/meat	5
	Other (Please specify)	98

6.3	Did you use any products for pain management for mulesing your ewe lambs in 2023?	
	Yes	1
	No	2

6.3.1	ASK IF CODE 1 AT 6.3 Of the (SHOW NUMBER AT 6.1.1) ewe lambs you mulesed in 2023, how many did you use pain management on for mulesing? NUMBER CANNOT BE GREATER THAN 6.1.1	Number

6.3.2	Did you use any products for pain management for mulesing your male lambs in 2023?	
	Yes	1
	No	2

6.3.4	ASK IF CODE 1 AT 6.3.2 Of the (SHOW NUMBER AT 6.2.1) male lambs you mulesed in 2023, how many did you use pain management on for mulesing? NUMBER CANNOT BE GREATER THAN 6.2.1	Number

6.4	ASK IF CODE 1 AT 6.3 or 6.3.2 What type of product/s did you use? Examples of product types are shown in brackets SHOW. MULTIPLE	
	Anaesthetic injection at the surgery site (e.g. Numnuts®)	1
	Anaesthetic and antiseptic spray at the surgery site (e.g. Tri-Solfen®)	2
	Analgesic / pain killing injection (e.g. Meloxicam)	3
	Analgesic / pain killing oral gel – veterinary prescribed (e.g. Buccalgesic)	4
	Analgesic / pain killing oral gel – non-veterinary prescribed (e.g. Butec)	5
	Other (Please specify)	98

6.5	ASK FOR CODES 1 – 5 AT 6.4 Why did you use this product? SHOW. MULTIPLE. RANDOMISE	
	Availability / unaware of other products	1
	Easy to apply	2
	Effective product	3
	Fast recovery / promotes healing / minimal bleeding	4
	Have always used it	5
	Improved animal health and welfare	6
	Industry standard	7
	It works / reduces pain	8
	Lambs quick to mother-up following treatment	9
	Lasts longer	10
	Recommended by retailer / contractor/ stock agent	11
	Recommended by vet	12
	Other (Please specify)	98

6.6	ASK IF CODE 2 AT 6.3 Why didn't you use pain management? SHOW. MULTIPLE. RANDOMISE	
	Not necessary	1
	Quick procedure / not practical	2
	Vet hasn't suggested it	3
	Added stress / time	4
	Too expensive	5
	Don't know what to use	6
	No reason / have not considered it	7
	Nothing readily available	8
	Other (Please specify)	98
	Don't know	99

ASK 6.7 – 6.8 IF CODE 1 AT 6.1 OR 6.2

6.7	How likely are you to cease mulesing in the next 5 years? SHOW. SINGLE	
	Very unlikely	1
	Unlikely	2
	Can say either way	3
	Likely	4
	Very likely	5

6.8	If mulesing was no longer an option, which of the following would you do? SHOW. MULTIPLE. RANDOMISE	
	Breed sheep resistant to flystrike	1
	Increase crutching frequency	2
	Increase shearing frequency	3
	Move to another enterprise / get out of farming	4
	Move to cattle enterprise	5
	Move to prime lamb enterprise	6
	Rely on more flystrike chemicals for prevention or treatment	7
	Other (Please specify)	98

6.9	ASK IF CODE 2 AT 6.1 AND 6.2 Have you ceased mulesing your ewe and male lambs or did you never mules them? SHOW. SINGLE	
	Ceased mulesing	1
	Never mulesed	2

ASK 6.10 – 6.11 IF CODE 1 AT 6.9

6.10	What year did you cease mulesing? Year	

6.11	IF CODE 1 AT 6.9 Why did you cease mulesing? SHOW. MULTIPLE. RANDOMISE		
	Animal ethics	1	
	Higher wool prices	2	
	Breed plain bodied sheep / less body wrinkle	3	
	Higher sheep prices	4	
	Industry and consumer pressure	5	
	It's an unnecessary procedure / prefer not to mules	6	
	No fly pressure	7	
	Only ceased temporarily / mules as required	8	
	Sell off younger wethers	9	
	Weather conditions	10	
	Other (Please specify)	98	

Section 7: Vaccination

We would like to capture your use of vaccines in your flock.

7.1	Do you vaccinate any sheep in your flock?		
	Yes	1	***CONTINUE***
	No	2	***GO TO SECTION 8***

ASK 7.2.0 – 7.5 IF CODE 1 AT 7.1

7.2.0	What percent of your entire flock receives at least one vaccination of any type of vaccine? (Or: Of every 100 sheep that you have on your property, how many have received a vaccine?) Number / percent

7.2.1	What type of vaccines do you use on your farm? SHOW. MULTIPLE. RANDOMISE	
	A 5 in 1 vaccine for clostridial disease	1
	A combined 5 in 1 clostridial plus Cheesy Gland vaccine	2
	Johne's Disease vaccine	3
	Scabby Mouth vaccine	4
	Campylobacter abortion vaccine	5
	Foot rot vaccine	6
	Erysipelas arthritis vaccine	7
	Other	99

7.3	Do you do a pre-lambing vaccination?	
	Yes	1
	No	2

7.4	Do you vaccinate your ewe lambs at lamb marking? SHOW. SINGLE	
	Yes	1
	No	2

7.5	Do you vaccinate your lambs at weaning?	
	Yes	1
	No	2

7.6	Do you follow label recommendations when administering antibiotics to your sheep?	
	Yes	1
	No	2

Section 8: Mortality and Euthanasia

Thinking now about livestock mortality and euthanasia in your (INSERT MERINO OR NON-MERINO FROM S4/S5) flock.

8.1	Of the ewe lambs that you wean, what percentage would you lose before the first joining? (Or: Of every 100 ewes that you wean, how many do you lose before the joining?) | | | | Number / percent

8.2	What is your annual adult ewe mortality percentage rate? (Or: Of every 100 adult ewes on your property, how many do you lose on average each year?) | | | | Number / percent		

8.3	The industry has developed the Australian Animal Welfare Standards and Guidelines for Sheep. Which of the following best describes your knowledge of these standards and guidelines? SHOW. SINGLE		
	I am aware of these but have not read them	1	***CONTINUE***
	I am aware of these and have read them, but have not changed my practices	2	***CONTINUE***
	I am aware and I have changed my practices as a result of reading them	3	***CONTINUE***
	I am not aware of these	4	***GO TO SECTION 9***

8.4	The Australian Animal Welfare Standards and Guidelines for Sheep include specific standards and guidelines for the Humane Killing of Sheep. Which of the following best describes your knowledge of the specific standards and guidelines for the Humane Killing of Sheep? SHOW. SINGLE	
	I am aware of these but have not read them	1
	I am aware of these and have read them, but have not changed my practices	2
	I am aware and I have changed my practices as a result of reading them	3
	I am not aware of these	4

ONLY ASK SECTION 9 IF 'MERINO' AT S4

Section 9: Wool QA

Thinking now about wool quality assurance in your (INSERT MERINO) sheep operation.

9.1	Are you involved in any quality assurance schemes involving wool?	
	Yes	1
	No	2

9.2	ASK IF CODE 2 AT 11.1 What has stopped you from being involved in a wool QA scheme? SHOW. MULTIPLE. RANDOMISE	
	Too expensive	1
	Not aware of any QA schemes	2
	Don’t think I meet QA scheme criteria, so cannot join	3
	Don't see any premiums	4
	Audit fatigue	5
	Other (Please Specify)	98

Section 10: Predators

We would like to ask you some questions about predators and pests in your sheep operation.

10.1	Do you have a problem with predators on your property? SHOW. SINGLE		
	Yes	1	***CONTINUE***
	No	2	***GO TO SECTION 11***

10.2	How many sheep did you lose to predators in 2023?	
		number

10.3	What are the two most relevant predators on your property? SHOW. ALLOW A MAXIMUM OF 2 RESPONSES. RANDOMISE	
	Wild dogs including dingoes	1
	Pigs	2
	Foxes	3
	Birds i.e. crows and eagles	4

10.4	How do you control (SHOW PREDATOR SELECTED AT 10.3)? REPEAT FOR EACH PREDATOR SELECTED AT 10.3 SHOW. MULTIPLE. RANDOMISE	
	Poison / Bait	1
	Shoot	2
	Trap	3
	Fences	4
	Guardian / Companion Animal	5
	Don’t control	0

10.5	Do you have a documented predator management strategy or plan for your property? SHOW. SINGLE	
	Yes	1
	No	2

Section 11: Carbon Activities

Turning now to the topic of renewable energy and your carbon accounting and storage activities on-farm.

11.1	Which of the following best describes your use of renewable energy on your farm? SHOW. MULTIPLE	
	I use renewable energy that I generate myself	1
	I use renewable energy from my energy retailer	2
	I don't generate or buy any renewable energy	3

11.2	ASK IF CODE 1 AT 11.1 Which of the following types of renewable energy do you generate and use on your farm? SHOW. MULTIPLE.	
	Solar without battery	1
	Solar with battery	2
	Wind	3
	Geothermal	4
	Biomass	5
	Hydroelectric	6
	Something else (Please specify)	98

11.3	Have you undertaken any carbon neutral or carbon accounting training? SHOW. SINGLE	
	Yes	1
	No	2

11.4	Have you estimated the net greenhouse gas emissions produced in your operation using a carbon calculator tool or another process? SHOW. SINGLE	
	Yes	1
	No	2

11.5	Have you implemented any activities to reduce your net greenhouse gas emissions or emissions intensity (emissions per kilogram liveweight) while producing livestock? SHOW. SINGLE	
	Yes	1
	No	2

11.6	ASK IF CODE 1 AT 11.5 Which of the following activities have you implemented? SHOW. MULTIPLE. RANDOMISE	
	Carbon storage (manure, plant debris and composts applied to the soil, permanent planting of pastures, tree planting)	1
	Flock management (increasing fertility, decreasing average age, reducing proportion of unproductive animals)	2
	Management systems (stocking rates, improved nutrition/rates of liveweight gain)	3
	Manure management (manure stockpile aeration, adding urease inhibitors, enhancing dung beetle activity)	4
	Pasture management (grazing management, earthworms, grass species, legumes, perennial pastures)	5
	Savanna burning management	7
	Developed an action plan to reduce emissions	8
	Something else (Please specify)	98

Section 12: Biodiversity and Land and Water Management

We would now like to ask you some questions about biodiversity and land and water management.

12.1	Do you have a completed property management plan that incorporates biodiversity and/or conservation?	
	Yes	1
	No	2

12.2	Do you undertake deliberate activities to maintain, measure or enhance biodiversity on your property?	
	Yes	1
	No	2

12.3	ASK IF CODE 1 AT 12.2 Which practices do you use to maintain and improve biodiversity on your property? SHOW. MULTIPLE. RANDOMISE	
	Rotational/cell/multi-paddock grazing	1
	Maintenance of adequate ground cover	2
	Minimum tillage	3
	Multiple species planting	4
	Cover crops	5
	Incorporating manures and/or compost	6
	Dung beetles	7
	Manage soil health and organic matter	8
	Incorporate perennial pastures into grazing systems	9
	Use remote sensing technologies or external assessment to track biodiversity indicators	10
	Other (Please specify)	99

12.4	Which of the following land management activities did you undertake on your property/ies in 2023? SHOW. MULTIPLE. RANDOMISE	
	Weed control	1
	Carried out prescribed burning to reduce weeds, control regrowth, or improve pasture condition	4
	Revegetated areas with native or indigenous plant species by either direct seeding of plating seedlings (including windbreaks, shelterbelts, around dams, or within pastures)	5
	Erosion control such as construction of contour banks, deep ripping etc	6
	Applied soil treatments or amendments other than fertilisers (e.g., lime, dolomite, gypsum, compost, green manure crops, biochar)	7
	Regular pasture and land condition monitoring (through photos or documenting change)	8
	Maintained areas that are reliable sources of water for livestock	9
	Destocked or spelled pastured areas	10
	Destocked or spelled bushland areas	11
	Destocked or spelled riparian areas and other natural water features	12
	Other (Please Specify)	98

12.5	Have you previously (in 2023 or earlier) undertaken any of the following grazing management activities on your property/ies? SHOW. MULTIPLE. RANDOMISE	
	Fenced areas to land type to better manage grazing pressure	1
	Fenced areas to allow for spelling or to prevent livestock access (including protection of paddock trees)	2
	Fenced waterways to prevent livestock access	3
	Provided off-stream water for livestock away from riparian areas and other natural water features	4
	Other (Please Specify)	99

12.6	Are you able to accurately identify various types of weeds that commonly grow in pasture systems, and distinguish them from desirable plants?	
	Yes	1
	No	2

12.7	What is the source of water for your animals? SHOW. MULTIPLE. RANDOMISE	
	Scheme Water	1
	Surface Water (direct from dams, locked dams, creeks, rivers)	2
	Surface Water (pumped to watering points such as troughs)	3
	Groundwater (bores, siphons, springs)	4
	Rainwater tanks	5
	Other (Please specify)	98

12.8	Do you have a documented plan for managing your farm and animals during extreme weather e.g., droughts, extreme heat events and floods. SHOW. SINGLE	
	Yes	1
	No	2

12.9	Can your stock water supply withstand prolonged dry periods? SHOW. SINGLE	
	Yes	1
	No	2

12.10	Can you increase stock water supply if needed? SHOW. SINGLE	
	Yes	1
	No	2

Section 13: Soil Management

Thinking now about soil management on your property.

13.1	Did you undertake practices to improve your soil water retention? (e.g. leaving tall pasture grass stubble, greater grazing rotation, cover cropping, claying, aeration, pasture slashing/mulching, composting) SHOW. SINGLE	
	Yes	1
	No	2

Section 14: Chemicals

Please now consider the topic of chemical safety

14.1	Have you done any chemical safety training courses? SHOW. SINGLE	
	Yes	1
	No	2

14.2	ASK IF CODE 1 AT 14.1 Do you have ChemCERT accreditation or hold a current ChemCERT card? SHOW. SINGLE	
	Yes	1
	No	2
	Don’t know	9

Section 15: Training and WHS

Can you now consider the topic of learning and training

15.1	How did you learn to perform the various animal husbandry practices undertaken on farm? SHOW. MULTIPLE	
	Informal (someone showed me)	1
	Informal (I taught myself)	2
	Formal (course / workshop)	3
	I don't perform these (use contractors)	5

15.2	In 2023, did you participate in any other training or continued education courses? SHOW. SINGLE	
	Yes	1
	No	2

15.3	What type of subject matter did the training or continued education courses cover? SHOW. SINGLE. MULTIPLE	
	Animal health / husbandry	1
	Environmental/climate management	2
	Genetics	3
	Business skills	4
	Pasture management/improvement	5
	Pest management	6
	Other (Please specify)	98

15.4	Do you have, or are you doing, any of the following in regard to Workplace Health and Safety (WHS) on your farm? SHOW. SINGLE		
		Yes	No
	Undertake WHS risk assessment	1	2
	Have a WHS plan	1	2
	Induct workers in WHS obligations	1	2
	Induct visitors in WHS obligations	1	2
	Encourage workers to identify safety concerns	1	2
	Exclude children under 16 from farming activities	1	2
	Appropriate farm vehicles have roll over bars	1	2

Section 16: On-farm Issues

We would like to capture your thoughts on some other issues related to your farm.

16.1	How much of an issue is the availability of general labour for your sheep operation? Please rate using a scale of 1 to 10 where 1 is No issue at all and 10 is a Major issue SHOW. SINGLE									
	No issue at all									Major issue
	1	2	3	4	5	6	7	8	9	10

16.2	How much of an issue is the availability of shearers for your sheep operation? Please rate using a scale of 1 to 10 where 1 is No issue at all and 10 is a Major issue SHOW. SINGLE									
	No issue at all									Major issue
	1	2	3	4	5	6	7	8	9	10

16.3	Did you use any of the following additional sources of labour for your sheep operation in 2023, 2022 or 2021? SHOW. MULTIPLE			
		2023	2022	2021
	Contractors	1	1	1
	Labour hire companies	2	2	2
	Workers on temporary visas	3	3	3
	Other (Please specify)	98	98	98
	Don't know	99	99	99
	None of the above	0	0	0

16.4	Do you have any employees on your property/ies? An employee can be either family or external, full-time, part-time or casual, who is paid a wage and has tax paid on that wage directly by the farm business**. It does not include contractors / contracted services or labour hire** SINGLE	
	Yes	1
	No	2

ASK 16.5 AND 16.6 IF CODE 1 AT 16.4

16.5	What percentage of your employees (full-time, part-time or casual) fall into the following age groups?	
	18 – 24	
	25 – 34	
	35 – 44	
	45 – 54	
	55 – 64	
	65 and over	
	Total must add to	100%

16.6	What percentage of your employees (full-time, part-time or casual) fall into the following categories? SHOW	
	Male	
	Female	
	Other	
	Total must add to	100%

16.7	Which of the following best describes the stage you are at in relation to succession planning for your property? SHOW. SINGLE	
	Have not yet commenced	1
	Discussed with family (no agreed outcome reached)	2
	Discussed with family (agreed outcome reached)	3
	Formal succession plan in place	4

Section 17: Final Demographics

Finally, just a few demographic and attitudinal questions to make sure we have collected the views of a broad cross section of producers.

17.1	How many years have you been involved with farming?	
		years

17.2	What is the highest level of education you have achieved? SHOW. SINGLE	
	Year 9 or less	1
	Year 10 - 11	2
	School Leaving Certificate (e.g. HSC)	3
	TAFE	4
	Tertiary Graduate	5
	Post Graduate	6
	Prefer not to say	99

17.3	For classification purposes, into which of the following age groups you fall? SHOW. SINGLE ANSWER ONLY.	
	18 – 24	1
	25 – 34	2
	35 – 44	3
	45 – 54	4
	55 – 65	5
	65 and over	6
	Refused	88

17.4	For classification purposes, which group do you fall into? SHOW. SINGLE ANSWER ONLY.	
	Male	1
	Female	2
	Other	3
	Prefer not to specify	4

THANK AND CLOSE