

# SHEEP STANDARDS AND GUIDELINES – TAIL DOCKING

## DISCUSSION PAPER

Prepared by the Sheep Standards and Guidelines Writing Group, January 2013

Tail docking is the removal of a portion of a sheep's tail.

### ISSUES

The main issues are:

- 1) Recommended methods
- 2) Age limits before pain relief is required
- 3) Tail length
- 4) Knowledge, experience and skills to perform the task
- 5) Availability of pain relief drugs.

### RATIONALE

Tail docking of lambs remains an important husbandry practice in Australia for sheep health, welfare and management reasons outlined below:

- Reduces urine and faecal soiling or dag formation and thus minimises susceptibility to fly-strike which is one of the most important welfare concerns for sheep in Australia
- Improves external parasite control
- Improves effectiveness and efficiency of dagging, crutching and shearing
- Reduces WHS issues and handling required at dagging, crutching and shearing
- Allows for management flexibility to finish lambs to meet market specifications under variable seasonal conditions
- Improves the cleanliness of the wool
- Reduces handling required pre-slaughter for crutching/dagging
- Reduces faecal contamination and risks to food safety at livestock processing plants
- There is no available replacement procedure.

Furthermore optimum tail length has additional health consequences for sheep:

- Influences rate of healing and risk of infection post-docking
- Influences rate of rectal prolapse in lambs
- May influence the rate of squamous cell carcinoma formation in the perineal region in older ewes.

Flystrike is one of the most important health and welfare concerns for sheep in Australia and tail docking is highly effective at reducing the incidence of flystrike. Webb Ware *et al* 2000 reported that leaving the tail on lambs can result in a 3fold increase in flystrike rates in Australia. Similarly a UK

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study by French et al 1994 showed that the incidence of blowfly strike was approximately five times greater in undocked lambs.

## RECOMMENDATIONS

The writing group reviewed the reasons for tail docking and the methods used and concluded that the procedure is necessary for breech fly strike control in most breeds of sheep in Australia. A minimum length of tail stumps must be specified. Circumstances will dictate the choice of method, with the gas heated hot knife or rubber rings preferred. All methods are associated with a degree of pain but for overall impact including haemostasis, the hot knife and rings are favoured to have a lesser impact on the animal's welfare at recommended ages for tail docking. There is anecdotal evidence that wound healing is slower in thicker tails when using the hot knife method. Research needs to be conducted to determine the best method (hot knife, ring or sharp knife) relevant to the size of the tails to be docked. Appropriate pain relief should be used for tail docking but the writing group acknowledged that this is difficult to deliver for sheep. The requirement for pain relief may practically prevent the practice beyond the age limit proposed (six months) for commercial sheep enterprises because of the restrictions involved in applying pain relief.

A maximum upper age limit of six months to perform the procedure before mandating pain relief is recommended for the following reasons;

- Desirable for sheep welfare – the age limit will reinforce the need to perform the procedure at an early age. Industry communications and extension campaigns aim to promote the recommended guidelines.
- Feasible for the majority of industry to implement – The proposed standard is practical for the diverse range of production systems and environments that exist in Australia and sends a clear message for sheep welfare. For most large scale sheep enterprises the requirement for pain relief effectively prohibits the procedure beyond the specified age.
- Feasible for government to implement – An age limit of 6 months causes no impediment for regulation compared with any other age limit. Compliance and enforcement policy will be an important aspect of regulation. Sheep dentition is an unhelpful guide to sheep age at less than one year old. Verification will have to rely upon other measures to establish age.
- Important for the sheep welfare regulatory framework – The current MCOP for Sheep states that sheep tail docked at > 6 months old require pain relief and it was considered important to incorporate this requirement into a standard.
- The valid outcome sought – is that tail docking is only performed where necessary and in a manner that minimises pain and distress. The age limit will not cause an increase in unnecessary pre-emptive tail docking or a decline in lamb welfare due to tail docking not being able to be performed if required.

A tail length of two free palpable joints is recommended for the following reasons;

- Desirable for sheep welfare – The minimum standard for tail length is required to prevent total loss of the tail which has adverse health and welfare implications and

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is not necessary for breech fly strike control. The practice of removing the entire tail is not acceptable. Industry communications and extension campaigns aim to promote the recommended guidelines.

- Feasible for the majority of industry to implement - The proposed standard is practical for the diverse range of production systems and environments that exist in Australia and sends a clear message for sheep welfare. The two joint specification will reinforce the need to perform the procedure with accuracy which is reasonably achievable by large scale sheep enterprises.
- Feasible for government to implement –A tail length of two joints causes no impediment for regulation compared with any other tail length. Compliance and enforcement policy will be an important aspect of regulation.
- Important for the sheep welfare regulatory framework – The current MCOP for Sheep recommends that sheep are tail docked at three palpable free joints or equivalent length and it was considered important to incorporate an acceptable tail length requirement as a standard.
- The valid outcome sought is – that tail docking is performed to an acceptable tail length. The length specified will not cause a decline in lamb welfare including due to tail docking not being able to be performed if required.

The practical difficulty in always achieving an exact tail length with the docking procedure has led to the recommendation of a minimum permissible tail length of two palpable free joints as the standard. The recommended tail length in the guideline is the accepted industry practice and delivers optimum sheep welfare.

The writing group recommends that the following standards be introduced into legislation and the following guidelines for good sheep welfare practice be published for industry consideration.

## PROPOSED STANDARDS AND GUIDELINES

### Objective

Tail docking is done only when necessary, and in a manner that minimises the risk to the welfare of sheep, particularly pain and distress.

### Standards

- S6.1 A person performing tail docking must have the relevant knowledge, experience and skills, or be under the direct supervision of a person who has the relevant knowledge, experience and skills.
- S6.2 A person must not tail dock sheep that are more than six months old without using pain relief and haemorrhage control.
- S6.3 A person must leave a docked tail stump of a sheep with at least two palpable free joints remaining.

### Guidelines

- G.1 Lambs should be tail docked by the hot knife or rubber ring methods, in preference to the sharp knife method or other cutting methods, except for larger tails. The hot knife method is generally preferable for tail docking done with mulesing. Recommendations may change with future research and development.
- G.2 A hot knife should be operated at the recommended temperature.
- G.3 The tail should be docked through the joint space.
- G.4 The docked tail should be long enough to cover the vulva in female lambs and be of similar length in males.
- G.5 Tail docking should not be done for cosmetic reasons or on fat-tail sheep breeds.

**Note:** This material that relates to the two husbandry procedures of castration and tail docking and has been written to reflect a single chapter in the document.

- G.6 Tail docking should only be done where there are no alternatives and the procedure results in:
- Benefits to life-time sheep welfare
  - Better flock management
  - A reduced work (occupational) health and safety risk.
- G.7 Tail docking should be done after a secure maternal bond has been established, and after the lambs are 24 hours old.

- G.8 Lambs should be tail docked as young as possible and before they are 12 weeks old.
- G.9 Tail docking should be planned with consideration to the age of lambs, weather, staff availability and facilities, including the use of temporary or permanent yards.
- G.10 Good hygiene practices should be practiced in relation to facilities, hands, handling and instruments. Disinfectant should be used and changed frequently.
- G.11 Infection should be minimised by avoiding muddy or dusty yards, and wet or humid weather.
- G.12 Operators should adopt appropriate strategies to minimise the risk and impact of common infections, such as by *Erysipelothrix rhusiopathiae* and *Clostridium tetani*, through vaccination of lambs and/or their mothers.
- G.13 Lambs should be appropriately restrained in a lamb cradle and, when released, should land on their feet to avoid contact of the wound(s) with the ground.
- G.14 Lambs should be separated from their mothers for the shortest possible time.
- G.15 Haemorrhage should be minimised by preventing overheating of lambs and allowing them to settle after mustering.
- G.16 Tail docking should not be undertaken during extreme weather.
- G.17 Tail docking should be done when fly activity is minimal, or in conjunction with appropriate preventive flystrike treatment.
- G.18 Sheep should be inspected regularly and with minimal disturbance for signs of post-operative complications during the healing process, and appropriate action taken.
- G.19 Tail docking should be accompanied by pain relief when practical and cost-effective methods become available. Operators should seek advice on current pain minimisation strategies.
- G.20 Ewes should be managed to optimise milk production to maximize protein availability for the lamb to aid wound healing.
- G.21 After placement in paddocks, lambs should not be forcibly mustered and yarded until wounds are healed.

## **METHODS OF TAIL DOCKING**

The most common methods of tail docking lambs in Australia include:

- Gas-heated hot knife
- Applying rubber rings
- Cutting with a sharp knife.

The Australian MCOP for sheep states that all of these methods performed according to manufacturer's directions are acceptable without anaesthetic for sheep under six months of age.

A review by Mellor and Stafford (2000) concluded that surgical tail docking without analgesia caused the highest cortisol response and that tail docking by ring or hot knife produced responses not dissimilar to control sheep. This suggests that lambs should be tail docked by the hot knife method or the rubber ring method in preference to the sharp knife method (Hayward 2002).

In their review, Mellor and Stafford essentially undertook a meta-analysis of a range of studies where lambs had been tail docked by a sharp knife, sharp knife combined with burdizzo clamp, sharp knife and burdizzo clamp combined with cautery, hot knife, rubber ring application, and rubber ring combined with burdizzo clamp. Of the methods used in Australia, the review found that tail docking by sharp knife induced an integrated cortisol response of 165-170% (standardised against 100% for combined castration and tail docking by rubber rings). By comparison, tail docking by ring or hot knife at a similar lamb age produced an integrated cortisol response of 30-55%.

Grant 2004 has shown that all treatments involving rubber rings resulted in significant abnormal posture and active pain behaviour displays. Lomax *et al* 2010 also reported lambs castrated and tail docked by rings exhibited behaviours indicative of intense pain and severe distress which were greater than that caused by other treatments including surgery.

The use of a clamp (Burdizzo) method and high tension band methods has been mentioned in international papers; however it appears that these methods are rarely used, if at all in Australia.

## **AGE OF TAIL DOCKING**

The Australian MCOP for sheep states that tail docking should be performed on lambs "as early as management practices will allow, preferably between two and twelve weeks. Sheep over six months require an anaesthetic."

The UK Farm Animal Welfare Council (FAWC) report (2008) states that 'there is no evidence to indicate that the pain responses in lambs docked below one week is less than that for sheep docked at older ages'.

Determining an upper age limit of six months for tail docking lambs involves consideration of the following factors:

- Practical aspects of undertaking the procedure, including suitable weather conditions, labor availability
- Practical limitations of the technique to be used (e.g. the ability to handle and restrain the sheep)
- The length of the joining period will result in varying birth dates. Mustering lambs with a wide range of ages can increase the risk of mis-mothering in very young sheep
- The necessity to undertake other sheep husbandry procedures at the same time.

New Zealand has documented a similar discussion in paragraph 38 of the Animal Welfare (Painful Husbandry Procedures) Code of Welfare Report 2005.

## TAIL LENGTH

Docked tail length is an important consideration to achieve the full benefits of tail docking for sheep health and welfare. The practice of docking some sheep to leave no tail or a very short tail leads to adverse health and welfare outcomes. Conversely, under Australian conditions, leaving a tail longer than three free palpable joints can have adverse health and welfare outcomes for the sheep as these sheep are reported to be difficult to shear and crutch, can heal abnormally, and are more susceptible to staining, dagg and flystrike (Munro and Evans 2009). Careful operator judgement at marking is required as tails usually heal 10 mm shorter than cut length.

The Australian MCOP for sheep states that “the docked tail should be just long enough to cover the vulva in female sheep and be of similar length in the male.” This is underpinned by an AWI study by Lloyd 2012 of research trials in the 1930s and 1940s in unmulesed merino sheep. The best result was obtained by docking the tails of unmulesed sheep medium-long or long for both female and male sheep.

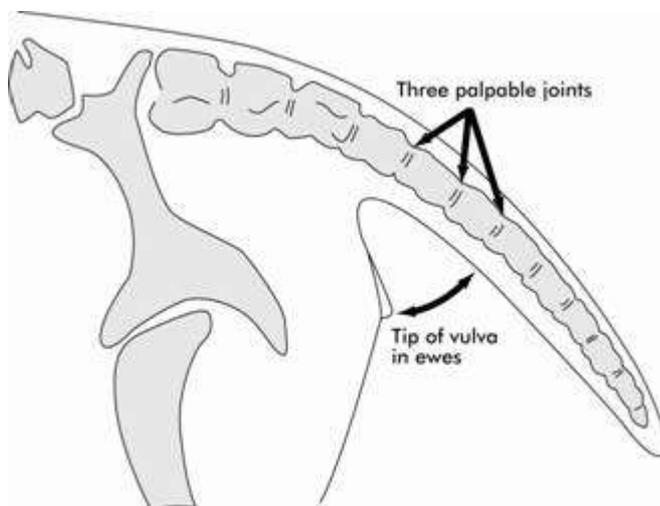
Webb Ware et al 2000 reported that leaving the tail on lambs can result in a 3 fold increase in flystrike rates in Australia.

Recent research in Australia (Larsen and deFegeley 2004), and in New Zealand (Fisher *et al* 2004) has shown that in a high proportion of merino lambs the tail has been docked too short to prevent soiling of the breech wool and flystrike.

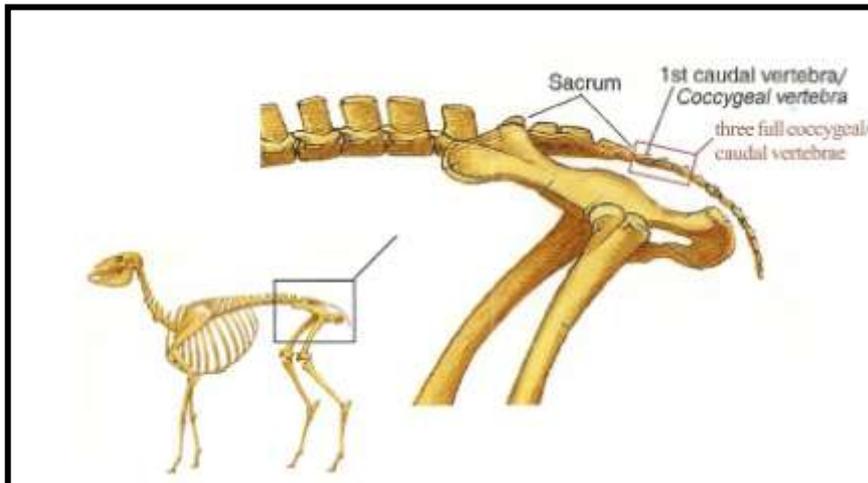
There is little evidence of difference between a docked tail length of two or three palpable free joints. The longer length to achieve coverage of the vulva is desirable in ewes but it has been suggested by Munro and Evans in 2009 that cross bred sheep, wethers and ram lambs can be docked one joint shorter than ewe lambs.

The docking of lambs tails short for competitions of live animals in shows, and for carcase competitions cannot be justified in Australia. It is well documented that short docking leads to health and welfare issues for sheep such as rectal prolapse (Thomas et al 2003) and squamous-cell carcinoma of the vulva.

It is difficult to find good diagrams, the following may help:



Source: National Mulesing Accreditation Manual and draft MLA: AWI publication A guide to best practice husbandry in sheep.





The number of vertebrae remaining in a docked tail of a lamb can be understood by following this sequence:

- Sacrum
- Sacro-coccygeal joint
- First coccygeal vertebra
- First inter-coccygeal vertebral joint (first free palpable joint)
- Second coccygeal vertebra
- Second inter-coccygeal vertebral joint (second free palpable joint)
- Third coccygeal vertebra.

Two palpable coccygeal vertebral joints would mean there were three coccygeal vertebrae remaining in a docked tail if docking occurs through the joint space as recommended. The first coccygeal vertebra may not be entirely mobile or distinguishable as part of the external tail (and the sacro-coccygeal joint is not recognised as a free joint).

Ewes with tails docked to recommended length. (Source Google)



Australian Wool Innovation held a Wool R&D Technical Update on Breech Flystrike Prevention in Sydney on 1 August 2012<sup>1</sup>. Attendees were given the opportunity to hear about the latest developments and significant issues facing the sheep industry in regards to breech flystrike including studies on tail length. Current tail length recommendations are a balance of risk of flystrike: cuts from crutching: wool contamination. Trial evidence over large numbers of sheep and sites support the current recommendation below. Current recommendation “for ewes and male lambs dock immediately below the third palpable joint or through the third joint space”. This is longer than many breeders currently use.

### **ABILITY TO PERFORM THE REQUIRED TASK**

A person must have knowledge, experience and skills to perform a general husbandry task in a satisfactory manner. This matter is regarded as highly important by the sheep industry. A level of assurance is sought commensurate with the degree of immediate welfare risk to the animal. Formal assessment of ability is not required.

Sheep in Australia are managed in environments that vary from extensive rangelands to intensively managed systems. In all cases the persons in charge of sheep are responsible for the welfare of the animals under their control. In achieving improved welfare outcomes envisaged by the standards, it is important that people responsible for animals have the necessary knowledge, experience and

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<sup>1</sup> [http://www.wool.com/Grow\\_Animal-Health\\_Flystrike-prevention\\_Technical-RnD-update.htm](http://www.wool.com/Grow_Animal-Health_Flystrike-prevention_Technical-RnD-update.htm)

skills to undertake the various procedures and meet the requirements of the standards, in a manner that minimises the risk to sheep welfare. The relevant principles are:

- The undertaking of any husbandry procedures required for planned flock management in a manner that reduces the impact of these procedures and minimises risks to sheep welfare
- Handling facilities, equipment and procedures that minimise stress to the sheep
- Minimising the risk of pain, injury or disease
- Assessing the need to undertake any husbandry procedures that may result in significant short-term pain against alternative strategies for the long-term welfare of the sheep.

Considerations include:

- Reducing the impact of mustering, handling and restraint
- Carrying out the procedures at the earliest practical age
- Knowledge of the appropriate age/size considerations for selection of method
- Ensuring that facilities and equipment are suitable
- Applying the method skilfully
- Applying other basic principles such as vaccinating ewes and lambs to protect against tetanus and other clostridial diseases
- Avoiding wet weather
- Maintaining clean hygienic practices
- Allowing the unweaned lambs to mother up as soon as possible
- Releasing the sheep from the yards and onto feed and water as soon as possible.

The most important elements to be considered are:

- Knowledge of the appropriate age/size considerations for selection of method
- Demonstrated manual skill
- Appropriate hygiene
- Appropriate instruments.

## PROVISION OF PAIN RELIEF FOR TAIL DOCKING

There are no effective analgesic drugs generally available to non-veterinarians for tail docking. Currently, analgesic products that could be used in conjunction with tail docking are only available through a veterinarian. There are no non-steroidal anti-inflammatory drugs that are currently registered for sheep in Australia.

The extensive review by Mellor and Stafford 2000 indicated that tail docking by ring or hot knife produced stress responses that were relatively low in the scale of responses produced by other husbandry procedures such as castration. Essentially, the use of a ring or hot knife produced responses not dissimilar to control sheep up to the age of 3 weeks. Nonetheless, there were still definable benefits from the provision of pain relief for tail docking. These methods include the systemic injection of a non-steroidal anti-inflammatory drug (diclofenac) 20 minutes before ring application, or injecting local anaesthetic subcutaneously around the tail 1-2 minutes beforehand. Other local anaesthetic applications deemed beneficial include topical application before ring application, or through needleless injectors. The epidural injection of local anaesthetic was also effective, although the least practical of all these methods. More details are provided by Graham *et al* 1997 and Kent *et al* 1998.

Lomax *et al* 2010 reported lambs castrated and tail docked by surgery or hot iron benefited from the use of Tri-Solfen with significant pain behavior reduction from the first minute and for up to four hours post-operation.

The lack of drug registration for sheep precludes the widespread use of NSAID's and other analgesic drugs.

## REVIEW OF NATIONAL POLICIES AND POSITIONS

The **Australian MCOP for Sheep** states that tail docking is a recommended practice for blowfly control; should be performed on lambs as early as management practices will allow, preferably between two and twelve weeks; animals over six months require an anaesthetic; docked tail should be just long enough to cover the vulva in female sheep and be of similar length in the males; acceptable methods of tail docking, without anaesthesia, are:

- Gas-heated hot knife used according to the manufacturer's recommendations
- Rubber rings applied according to the manufacturer's recommendations
- Cutting with a sharp knife.

The 2006 MCOP recommendation is: *for ewes and male lambs dock immediately below the third palpable joint or through the third joint space.*

The **Australian Veterinary Association (AVA) Policy 2006** accepts the practice of tail docking of lambs under 3 months of age provided that:

- The operations are performed by a skilled operator
- Using accepted industry practices
- The tail is docked at the third palpable joint.

The AVA considers that the tail docking of sheep older than 3 months should be treated as a major surgical procedure, using appropriate analgesia or anaesthesia; the AVA does not support short tail docking because of the health and welfare problems that can result.

**RSPCA Australia** 2008 relevant policy is as follows:

#### 4.6 Invasive animal husbandry procedures

*“4.6.1 RSPCA Australia is opposed to any invasive animal husbandry procedure for which there is no established need, which only benefit the human handler of the animals concerned, or that is performed to overcome the adverse effects upon animals of the production system they are in.*

*4.6.2 If an invasive procedure is to be performed, it must be undertaken at the earliest age possible, be performed by an accredited operator and be accompanied by appropriate pain-relieving and / or pain-preventing products.”*

The RSPCA Australia position paper B4 on 'Invasive farm animal husbandry procedures' (2009) states:

### **13 Tail docking**

*“13.1 The docking of the tail of any farm animal species must only be carried out under veterinary advice on the grounds of an individual animal’s health.*

#### **13.3 Lambs**

*a. Tail docking of lambs must only be carried out when consistent with the principle of planned flock health management to reduce the incidence of fly-strike in the breech area of wool-producing sheep.*

*b. Lambs which are to be killed at an early age, before flystrike is a potential problem, must not be tail-docked.*

*c. Tail docking must be performed by an experienced and competent person (see 2.4) on an appropriately restrained lamb of less than 10 weeks of age (see 2.6).*

*d. Acceptable methods of tail docking young lambs are the hot docking iron (preference) or rubber ring (more painful). Pain relief is required.*

*e. The length of the docked tail must at least cover the vulva in female lambs and the anus in male lambs.*

*f. The tail docking of lambs older than 10 weeks of age, or other species where the tail has been irreparably injured or diseased must only be performed by a veterinary surgeon. The procedure requires appropriate restraint (see 2.6), the use of sedatives plus local anaesthesia, and proper post-operative procedures to aid healing without infection”.*

## REVIEW OF INTERNATIONAL POLICIES AND POSITIONS

These policies and position statements are included to provide a brief international context, while acknowledging that Australia's sheep production systems may vary significantly from production systems, sheep breeds and climatic conditions in other countries.

The **New Zealand Painful Husbandry Procedures Code (2005)** has minimum standards for tail docking which include: tail docking must only be undertaken when there is a significant risk of faecal and urine contamination and/or flystrike, that leads to poor hygiene, health and welfare and/or failing to do so adds a significant cost to the farm system; where it is necessary, tail docking without pain relief must be performed when sheep are as young as possible and not greater than 6 months old; and when tail docking a sheep over 6 months of age pain relief must be used.

The NZ *Painful Husbandry Procedures Code (2005)* also notes that surgical methods of tail removal are associated with greater risks of bleeding and infection; rubber rings and hot knife both cause a similar degree of acute pain and distress, and considerably less than surgical methods; high tension bands are likely to cause a high degree of unnecessary pain because of the high pressure they generate, and other methods are preferred; hot knives need to be kept at the right temperature to avoid repeated applications (too cold) or unnecessary tissue damage (too hot).

In the **United Kingdom**, the Mutilations Regulations permit in Schedule 5 - tail docking subject to the following: enough tail must be retained to cover the vulva of the female or the anus of the male; when docking is done by rubber ring or other device to stop blood flow it may only be done on animals aged not more than 7 days; and when any other method is used, an anaesthetic must be administered. The procedure must be done in hygienic conditions and in accordance with good practice.

The **UK Farm Animal Welfare Council (FAWC) Report (2008)** identifies the following recommendations: when tail docking is necessary, it should be done as part of the farm's health and welfare plan and lambs should be tail docked as early as practically possible after a secure maternal bond has been established, but not usually before they are 24 hours old; tail docking of lambs above the age of 3 months should only be undertaken by a veterinary surgeon using pain relief; pain relief reduces the impact of tail docking on welfare and should be used when and wherever possible; tail docking for cosmetic reasons cannot be justified; and surgical tail docking should be prohibited except when performed by a veterinary surgeon using pain relief.

The **Canadian Recommended Code of Practice** recommends that long-tailed woolly sheep usually benefit from tail docking; tail should be left long enough to cover anus in males and vulva in females; acceptable methods are electric- or gas-heated docking iron (hot knife), rubber rings, crush-and-cut device and rubber ring plus crushing device, all to be used after lamb has consumed colostrum and before 7 days of age; after 7 days of age veterinary advice should be sought.

## DEFINITIONS

direct supervision	<p>A person (the supervised person) is acting under the direct <i>supervision</i> of another person (the supervisor) if the supervisor:</p> <p>(a) provides instructions and guidance to the supervised person in relation to the subject activity; and</p> <p>(b) oversees and evaluates the performance of the activity by the supervised person; and</p> <p>(c) is contactable by the supervised person; and</p> <p>(d) is supervising the person in accordance with paragraphs (a), (b) and (c) above; and</p> <p>(e) is on the same premises as the supervised person while the subject activity is being undertaken; and</p> <p>(f) is able to immediately render assistance to the supervised person, if required, at any time during which the subject activity is being undertaken.</p>
hot knife	<p>Any heated device for tail docking, generally heated by gas. Also known as gas-knife, searing iron or docking iron.</p>
pain relief	<p>The administration of drugs that reduce the intensity and duration of a pain response.</p>
palpable free joint	<p>Where there is one tail bone segment that is protruding from the profile of the rump and the connecting joint can be felt and the remaining tail bone segment manipulated.</p>
tail docking	<p>The removal of a portion of a sheep's tail.</p>

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