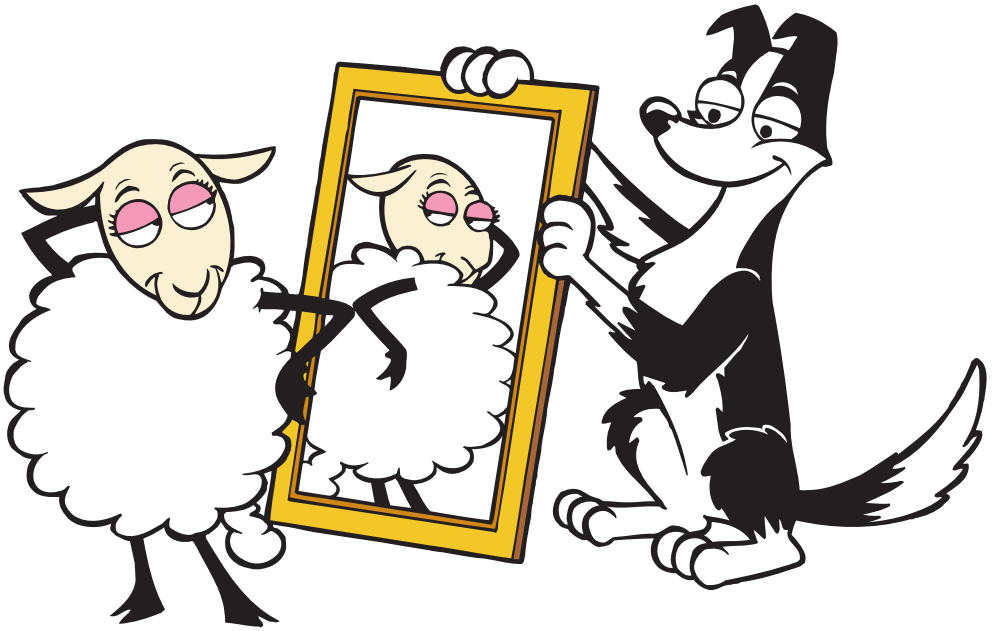
Clean Sheep for slaughter
A guide for producers



ADAS

FOOD STANDARDS AGENCY

Clean Sheep and Meat Safety – getting our act together

Contents

Who is this guidance booklet for?

This guidance booklet is intended for all of those involved in the sheep supply chain, such as farmers, hauliers, veterinary surgeons, and abattoir and market operators. It aims to provide advice on how to produce clean sheep for slaughter.

Introduction

Producing clean sheep for slaughter can be a difficult task, particularly in wet weather and when finishing sheep on roots and forage crops during the winter months. However, if fleeces are contaminated with dung and soil at the time of slaughter, there is a real risk of the meat becoming contaminated with harmful bacteria, such as *E. coli* O157, *Campylobacter* and *Salmonella*. Even the highest standards of abattoir hygiene cannot be guaranteed to prevent contamination of the carcase and cross-contamination of carcases during dressing. Research results have shown that the dirtier the fleeces, the greater the potential for carcase contamination and the higher the risk to human health. Wet fleeces can also increase the risk because bacteria may be transferred more readily.

Food safety hazards

E. coli O157, and other harmful bacteria such as *Salmonella* and *Campylobacter*, can live in the digestive tract of sheep without causing them ill health, and may appear in the dung of infected animals. Therefore, infection of flocks may go unnoticed by farmers or the veterinarian. It is estimated that sheep meat is responsible for over 46,000 cases of indigenous foodborne disease annually, which represents 3% of all cases[1]. *E. coli* O157 is one example of an organism which has come to prominence in recent years due to the fact that in very small numbers it can cause severe, even fatal, disease in humans.

Clean animals for slaughter

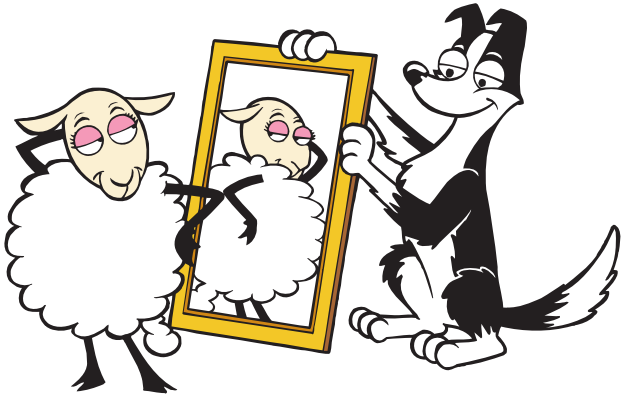
On arrival at the abattoir, a plant operator will assess the cleanliness of sheep to determine whether they are clean enough to be slaughtered. Decisions regarding cleanliness will include an assessment of the amount of dung and dirt present as well as the wetness of the fleece. A system of sorting animals similar to that outlined in the Clean Livestock Policy (CLP), into different categories, may be used to evaluate whether the animals are able to proceed to slaughter. The Meat Hygiene Service (MHS) official[2] must verify that acceptable standards of cleanliness used by the abattoir operator when sorting sheep will not compromise meat safety. Appendix 1 gives the legislation that is relevant to clean livestock at slaughter and is correct at the time of publication. The information can also be viewed in the Guide to Food Hygiene and Other Regulations for the UK Meat Industry, part 2, chapter 9, which can be found online at www.food.gov.uk/multimedia/pdfs/mguide6dec06.pdf

[1] Adak, G.K., Meakins, S.M., Yip, H., Lopman, B.A. and O'Brien, S.J. (2005). Disease risks from foods, England and Wales, 1996-2000. Emerging Infectious Diseases. 11 (3).

[2] MHS do not operate in Northern Ireland. Official supervision and enforcement in Approved Premises is carried out by Department of Agriculture and Rural Development (DARD) on behalf of Food Standards Agency.

The benefits of producing clean sheep

Dirtiness is usually due to a mixture of soil and dung, giving rise to a risk of bacterial contamination. Muddy, wet and dung contaminated fleeces are difficult for abattoir staff to handle and increase the likelihood of bacterial contamination of the carcase. Dung contamination can be significant around the tails of sheep as a result of scouring. Ensuring sheep are clean at slaughter minimises the potential risk to human health, contributes to the safe production of meat, and improves the shelf life of the meat.



Key message

Harmful bacteria on the fleece can be transferred to the carcase

Make sure sheep are presented clean for slaughter

In England and Wales the Disease Control Orders prohibit anyone sending animals to an abattoir unless they are to be slaughtered within 48 hours. This means animals must be clean enough for slaughter for food within 48 hours and cannot be returned if this is not achieved. In Scotland animals will not normally be returned to the holding from which they came because of biosecurity considerations. However, in exceptional circumstances, the Official Veterinarian (OV) can authorise the return of live animals to their farm of origin provided an appropriate standstill period, under the Disease Control (Interim Measure) (Scotland) Order 2002, applies. This is 13 days for sheep. In Northern Ireland facilities are provided at the slaughterhouse for dirty animals to be clipped so such animals are not returned to the farm.

In addition, dung contamination causes irreparable damage to the pelt which results in significant loss in value to the British tanning industry. Tanneries may therefore import foreign sheep skins at a premium price to guarantee quality while our own skins are exported at less than the maximum value. This loss in revenue could be passed back to the UK sheep sector if quality could be ensured.
The consequences of delivering dirty sheep include:

- Additional costs and inconvenience where dirty animals are retained in the lairage to be cleaned up at the abattoir.
- Cost of reduced slaughter line speed.
- Reduced carcase value due to excessive trimming.
- Reduced value of by-products – i.e. sheep skins.
- Loss of the entire carcase.

How clean are my sheep?

Appendix 2 shows examples of sheep that have been assessed as being clean enough to be sent for slaughter and sheep too dirty, particularly if wet, to be sent to slaughter. These examples provide guidance for the levels of sheep cleanliness expected during finishing and before they leave the farm.

Any animals that do not meet the abattoir's minimum requirements for cleanliness may need to be retained by the operator in lairage to dry and will possibly need clipping or other treatment before they are slaughtered. There is also the possibility of sheep being rejected. Extra time spent in lairage, clipping, reducing the line speed and rejection of animals all incur additional costs to producers and operators. Therefore it is in everyone's best interest to make sure sheep are clean when presented for slaughter.

Keeping sheep clean during finishing

Sheep cleanliness is particularly affected by diet, housing, sheep health, weather conditions and soil type during grazing. Using the advice in this booklet will assist in keeping sheep clean for slaughter, and the adoption of a Hazard Analysis Critical Control Point (HACCP) type of approach toward sheep management and production can reduce the risk of contamination further (see Appendix 3 for further information on HACCP procedures).

Finishing at grass

Grass-finished sheep are relatively clean, but wet summers and heavy, poorly drained soils can produce wet, muddy animals. Infection with gastrointestinal worms and grazing of young, lush grass increase the risk of scouring and dung contamination. Excessive use of nitrogen fertiliser and over-feeding minerals also causes sheep to be loose and results in a dirty fleece.

The following points should be considered when producing and finishing sheep from grass:

- Plan an appropriate fertiliser programme before lambing and turnout.
- Plan an appropriate parasite-control programme with your veterinary adviser before lambing (take care to comply with withdrawal periods for anthelmintics).
- Provide free-access to hay when sheep are on lush grazing, or during prolonged wet weather.
- Move ring feeders, hay racks and creep feeders frequently to avoid poaching and muddiness.
- Clean water courses regularly, especially between flocks, to reduce the risk of contamination transfer.
- Treat specific mineral and vitamin deficiencies known to occur in your flock and avoid routine free-access supply of general-purpose supplements.
- Supply magnesium to susceptible stock only during risk periods.

Finishing on roots and forage crops

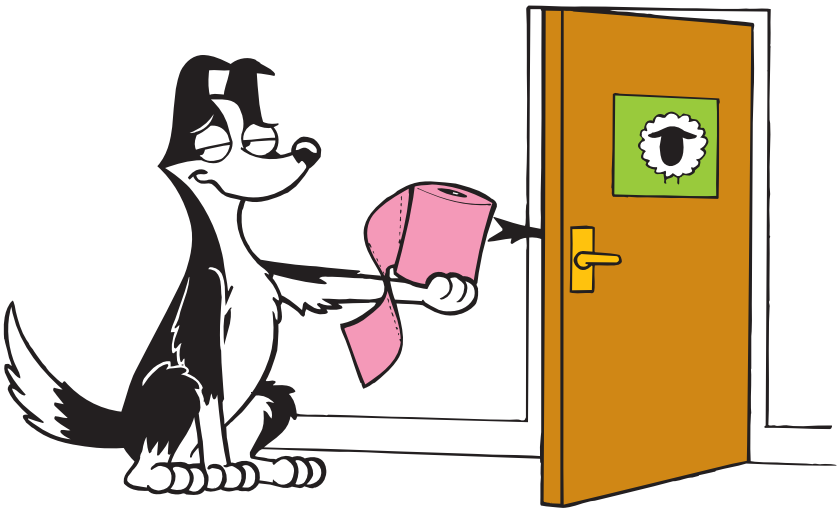
Sheep finished on root crops, kale, sugar beet tops, and other types of forage crops are those most likely to become wet and dirty. Cleanliness can be improved by following the management guidelines below:

- If possible, graze on light, free-draining land, particularly prior to marketing.
- Dagg (crutch) sheep before turning onto finishing crops.
- Worm with a broad-spectrum wormer before the sheep are changed to finishing crops (take care to comply with anthelmintic withdrawal periods).
- Allow sheep to adjust to a new crop gradually by restricting their initial access – a grass run-back is ideal.
- Increase crop access gradually and continue to ensure a consistent supply.
- If concentrates are fed, these must be introduced slowly and with care to avoid digestive upset.
- Provide hay at all times to reduce digestive upset and looseness of dung.
- Racks, troughs and feeders should be moved frequently to avoid creating boggy areas where sheep become dirty.
- Ensure that sheep always have access to a dry lying area. On free-draining land in good weather the crop area itself may be sufficient, but a run-back is preferable. On heavy land, or during wet weather, a grass run-back or strawed area should be maintained to allow sheep to lie clean.

- **Ensure that sufficient shelter is available for the whole flock during poor weather. If shelter is limited, the flock will huddle in these areas which soon become poached and dirty.**

Adverse weather and poor ground conditions lead to animals becoming dirty and it may be necessary to house animals for a period before slaughter to clean and dry them. Sheep that are simply wet or slightly dirty may then be fit to market within a day or so, but if sheep are allowed to become filthy, partial shearing may be necessary.

In summary, good housing design and management that will encourage cleanliness are obviously important. Care is needed to minimise the risk of digestive upset and scour as a result of diet change at housing, and free access to hay before and after housing is recommended.



Finishing diets for housed sheep

Silage-based diets and roots

Silage-based diets and roots produce the greatest likelihood of visible dirtiness because they result in large quantities of wet dung.

Good digestibility and protein content of silage are required for good production performance, but to minimise the likelihood of dirty sheep you should:

- Use appropriate amounts of fertiliser on silage fields and not apply fertiliser within six weeks of the expected cutting date.
- Wilt the silage well when weather conditions permit.
- Have silages analysed in advance of feeding. This may allow you to identify the most suitable silages for finishing lambs.
- Use feed analysis to balance protein and energy levels correctly in the ration.
- Do not feed acidic silage to sheep.

Hay-based diets

Hay-based diets produce relatively clean sheep, but are rarely an option for high performance finishing animals, because of their low nutrient value.

Intensive cereal diets

These rations produce small quantities of high dry matter dung and therefore sheep appear generally clean. However, health problems, including scouring, can occur if an intensive cereal diet is introduced or changed too rapidly, if it is nutritionally unbalanced, if there is a lack of long fibre in the diet, or if cereals are too finely ground. You should therefore:

- Ensure the ration is correctly balanced for protein, energy, minerals and vitamins.
- Always provide free-access to straw or limited access to hay, fed from a trough or ring feeder (not just from the bedding).
- Feed cereals whole – rolling or grinding is unnecessary for sheep and increases the risk of acidosis and scouring.

Other dietary factors

Overfeeding minerals, particularly magnesium and salt, increases the risk of dung contamination of the fleece by causing mild scouring and increased urine production. Access to minerals and salt should be restricted as sheep have a tendency to eat more than they need.

Caustic soda treatment of grain and straw increases sodium intake and urine production and can cause a mild scour, therefore increasing the risk of dirtiness.

Abrupt feed changes can lead to digestive upset, scouring, poor performance and dirtiness.

Aim to:

- Feed minerals formulated according to the type of diet and at levels appropriate to the type of stock.
- Avoid feeding free-access minerals or salt licks.
- Avoid caustic soda-treated feeds in finishing rations.
- Always make diet changes gradually.

Key message

Harmful bacteria in food and water will be shed in faeces

Rest pasture, keep water clean and avoid transport straight from pasture

Housing for sheep

General building design

Good ventilation, drainage and aspect are important considerations for a good sheep building. Humidity and condensation in poorly ventilated buildings result in damp, dirty sheep. Uneven floor surfaces, poor drainage and leaking roofs, gutters and water troughs also cause wet, dirty fleeces. Aim to achieve the following:

- Well ventilated sheep housing.
- Concrete flooring sloped sufficiently to allow adequate drainage, and removal of dirty water to prevent pollution.
- Floors free of pot-holes, and roofs, guttering and water troughs that are well maintained.

- Feeding arrangements designed to avoid dung contamination of feeds.
- Use of solid barriers between groups of finishing sheep to help prevent contamination transfer.
- Fully enclosed housing sited with the longitudinal axis running north–south.
- Open-fronted pens facing south or south-east.

Key message

Harmful bacteria can spread between pens and sheep groups

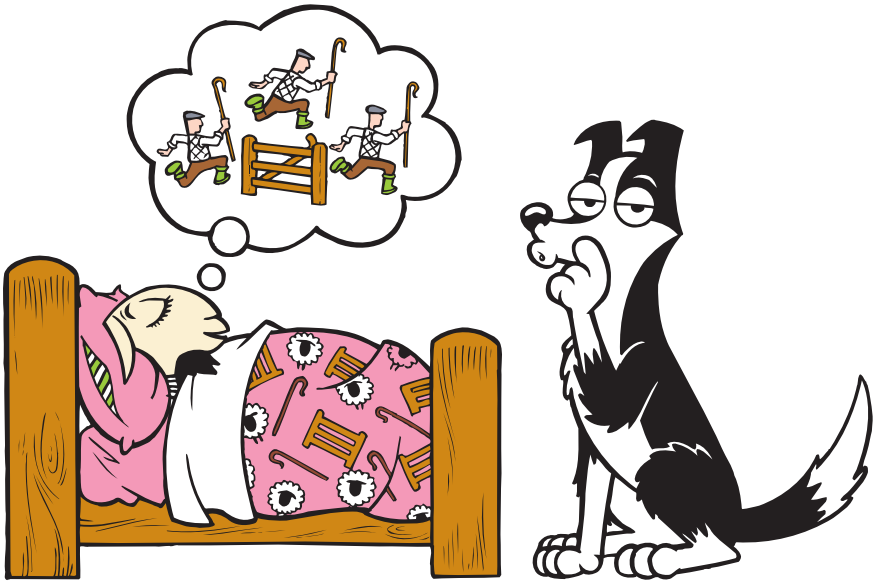
Where possible use solid partitions between groups of finishing sheep

Straw-bedded yards

Overstocking and insufficient or infrequent changes of bedding are the main reasons for dirtiness in straw-bedded pens. Extra straw provision will not compensate for overstocking. Straw shredders allow quick, even bedding-up, but research has shown that adequate amounts of straw must be used if animals are to be kept clean. The area near feed troughs often becomes particularly wet and dirty.

- Ensure stocking rates are appropriate for the size and number of sheep (optimum allowances are given in Appendix 4).
- Bed-up frequently with adequate straw to ensure cleanliness, paying particular attention to the feeding area.

- Using a straw shredder does not mean using less straw.
- Store bedding straw under cover, wrapped or well covered with plastic sheeting, and stacked on a free-draining site.



Key message

Harmful bacteria can spread from dirty bedding

Check the bedding on the farm, at market, during transport and in lairage

Slatted floor housing

Slatted pens are sometimes used for sheep although, for welfare reasons, they should not be used for newly-born and young lambs unless suitable bedding is also provided. The risk of dirtiness on slats is higher and some degree of fleece trimming is likely to be necessary before sale.

Correct stocking rate on slats is essential throughout the housing period (see Appendix 4). Both over-stocking and under-stocking limit the treading of dung through the slats and result in dirtiness.

Light lambs must be given more space as they grow. When animals are removed for market, the space for the remaining sheep needs to be reduced by combining groups or using movable gates. Feed space should be sufficient without having to understock the pen.

- **Ensure that stocking rates are appropriate (optimum pen space and feed trough space allowances are given in Appendix 4).**
- **Ensure that dung storage and frequency of removal is adequate to prevent blocked slats.**
- **Drinking bowls are preferable to water troughs because they minimise obstructed areas where dung can collect.**

Sheep health

Any disease or disorder that causes scouring increases the risk of a dirty fleece. Sweaty animals fleeces may become damp. In addition, illness reduces the animal's overall resistance to disease; so sick sheep are more susceptible to other infections, such as *E. coli* and *Salmonella*. Therefore, good general flock health management is important in reducing the risk of sheep carrying pathogenic organisms at slaughter which could lead to food poisoning in humans.

A good, all-round preventative health programme should be planned with your veterinary adviser and should include:

- The purchase of only strong, healthy sheep – preferably from a known source.
- A well-balanced diet.
- Prevention of coccidiosis and salmonellosis by good hygiene, good grazing management and appropriate veterinary medicine usage.
- An appropriate vaccination programme to protect against clostridial diseases.
- An appropriate worm control programme – a clean-grazing system should be operated, wherever possible, to minimise worm burdens and the need for anthelmintics.
- Prevention of copper deficiency or toxicity – copper can be harmful to sheep and compound feeds or mineral supplements which have been prepared for other species should be avoided.
- An appropriate supply of mineral/vitamin supplements that are correctly balanced.
- Prevention of pneumonia.
- Good general hygiene and stockmanship.
- Regular cleaning out and disinfecting of surfaces, pens and races, so reducing the risk of contamination spread.
- Ensuring good control of ectoparasites, such as sheep scab and lice, which can cause extreme distress to sheep and also damage the fleece and skin.

Key message

Harmful bacteria can survive and spread in a dirty environment

Keep floors, surfaces and clippers on the farm, at market, during transport and in lairage clean and disinfected

Clipping sheep prior to marketing

All lambs should be dagged (crutched) before finishing on roots and forage crops or indoors on silage.

Sometimes lambs are belly clipped before grazing to minimise dirt adherence. However, clipping at this stage may simply lead to dirt collecting closer to the skin, where it is less easily removed. This may result in the need for further close clipping prior to sale, a reduction in the value of the pelt and a reduced return on the sheep. You should:

- Dagg (crutch) lambs before introducing to finishing crops/diets.
- Delay clipping of belly wool until sheep are fit for sale – animals are best clipped as close to sale as possible, and should be kept on clean, dry bedding after clipping.
- Take care during clipping to avoid injury to the animal – ensure the sheep is securely held and use well-maintained clippers with an appropriate comb to prevent the skin being nicked.

Preparing sheep for slaughter

Clearly, the aim should be to prevent animals becoming dirty in the first place, but some degree of cleaning prior to sale or delivery to the market or abattoir may be necessary (refer to Appendix 1 for regulations). Long-fleeced breeds are more likely to become heavily soiled than short-fleeced breeds, so may require extra attention before marketing.

- Inspect every animal regularly during finishing and before it leaves the farm, for guidance on acceptable levels of cleanliness use the examples shown in Appendix 2.

- For sheep finished on silage, roots and brewers' grains, consider changing to a drier ration (e.g. a higher cereal ration) as sheep approach finished condition.
- Housing sheep overnight prior to slaughter will reduce gut fill and help to prevent the risk of the carcase becoming contaminated during slaughter.
- Avoid washing finished sheep before slaughter. Wet fleeces have been linked to an increased spread of bacteria on to carcases.

Key message

Wet fleeces can increase the spread of harmful bacteria

Keep sheep clean (and dry) – where possible for at least 24 hours prior to slaughter

Transporting finished sheep

When animals are transported to market or slaughter the following guidelines should be followed:

- Only use a reputable licensed haulier/transporter.
- Vehicles should be cleansed and disinfected between loads to prevent survival of bacteria and disease and according to any current legislation, such as the Transport of Animals (Cleansing and Disinfection) (England) (No. 3) Order 2003[3], and the relevant Disease Control Order. Equivalent regulations in Scotland and Wales apply. Farmers and hauliers should check with their local Agriculture Department office for advice on current biosecurity regulations.
- Vehicles should be well ventilated.
- Bedding should be provided – adequate clean and fresh straw is recommended. Sawdust should be avoided as it adheres to fleeces and may cause problems when the carcase of the animal is dressed.
- Animals should be dry at loading and kept dry throughout.
- Mixing of animals should be avoided.
- Stocking rates should follow the recommendations of the Welfare of Animals (Transport) Order 1997[4] and allow some animals to lie down safely. Partitions should be used, where appropriate, to prevent injuries as a result of understocking.
- Journey time and distance should be in accordance with the requirements of the Welfare of Animals (Transport) Order 1997[4]. Evidence suggests visible and bacterial cleanliness declines with increased transport time and distance.

[3] Transport of Animals and Poultry (Cleaning and Disinfection) Order (Northern Ireland) 2000. The Transport of Animals (Cleansing and Disinfection) (Wales) Order 2003.The transport of Animals (Cleansing and Disinfection) (Scotland) Regulations 2000. No.167.

[4] Welfare of Animals (Transport) Order (NI) 1997.

It is advisable to modify the diet, or to withdraw food for a short time before transport, to reduce faecal soiling of the bedding and other animals during transport.

Sheep welfare

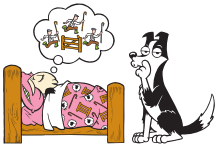
Owners and those looking after sheep have a legal responsibility to protect the welfare of animals at all times. Appendix 5 describes the legislation that is relevant to the welfare of sheep.

Conclusion

Following the advice in this booklet will help ensure that clean sheep are sent for slaughter. Delivering clean sheep for slaughter will have significant benefits for the producer, abattoir operator, retailer, consumer, and all those involved in the production chain. Furthermore, it will assist in strengthening confidence in UK lamb.

There is also a range of posters that emphasise the 6 key messages for producing clean sheep for slaughter. These posters are available free of charge. For further details on how to order these posters and any other Clean Livestock-related material please see page 34.

Harmful bacteria can spread in dirty bedding



Keep sheep clean – check the bedding on the farm, at market, during transport and in lairage

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Clean Sheep and Meat Safety – **getting our act together**

Bacteria on the fleece can transfer to the carcass

Keep sheep clean – make sure sheep are presented clean for slaughter

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Clean Sheep and Meat Safety – **getting our act together**

Wet fleeces can increase the spread of bacteria

Keep sheep clean (and dry) – for at least 24 hours prior to slaughter where possible

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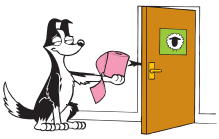
Clean Sheep and Meat Safety – **getting our act together**

Harmful bacteria in food and water will be shed in the faeces



Keep sheep clean – rest pasture, keep water clean and avoid transport straight from pasture

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Clean Sheep and Meat Safety – **getting our act together**

Harmful bacteria can spread between pens

Keep sheep clean – where possible use solid partitions between groups of finishing sheep

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Keep sheep clean – keep floors, surfaces and clippers on the farm, at market during transport and in lairage clean and disinfected.

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Clean Sheep and Meat Safety – **getting our act together**

Appendix 1: Legislative requirements for clean livestock at slaughter

The current EU Food Hygiene Regulations (EC No. 852/2004, EC No. 853/2004 and EC No. 854/2004) emphasise every food business operator's (including abattoir's operator's) responsibility to produce food safely by applying good hygienic practices and food safety management procedures based on hazard analysis and critical control point (HACCP) principles. EC Regulation 853/2004 (H2) provides the hygiene control requirements for slaughter and states that all animals should be 'clean' before being accepted onto the slaughterhouse premises.

EC Regulation 854/2004 (H3) states that animals with hides, skins or fleeces posing an unacceptable risk of contamination to meat during slaughter cannot be slaughtered for human consumption unless they are cleaned beforehand.

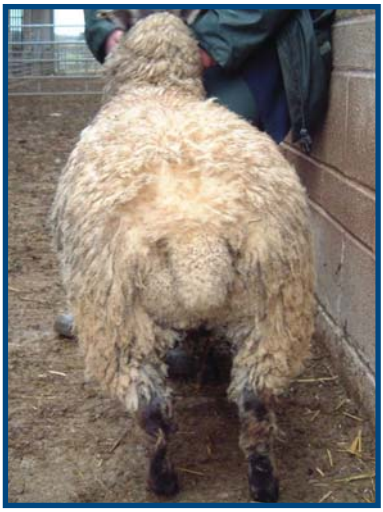
The information can be viewed in the Guide to Food Hygiene and Other Regulations for the UK Meat Industry, part 2, chapter 9, which can be found online at www.food.gov.uk/multimedia/pdfs/mguide6dec06.pdf

Appendix 2: Cleanliness classification of sheep

The photographs in this appendix can be used to assess the sheep's cleanliness before leaving the farm.

Dry animals appearing similar to, or cleaner than, the examples given below are considered to be clean enough to be sent to slaughter.

Light contamination of dirt/dung and small amounts of loosely adherent straw/ bedding from the fleece.



This page:

Top left: Light contamination of dirt/dung on the fleece.

Top right: Light contamination of dirt/dung on the fleece. Sheep has also been dagged (crutched).

Left: Dry but with more contamination of dirt/dung than previous examples, with some adherence of straw/bedding on fleece.

Facing page

Top left: The underside of a sheep with significant contamination of dirt/dung on the fleece.

Top right: Damp with significant contamination of dirt/dung on the fleece and significant amounts of adherent straw/bedding.

Bottom: Significant contamination of dirt/dung on the fleece and significant amounts of adherent straw/bedding.

Animals that are dirtier than the examples below, particularly if they are wet, are likely to require extra attention at the abattoir. If the abattoir operator has to hold animals prior to slaughter or slow the line or take other additional measures, additional costs will be incurred.

Appendix 3: Food Safety and HACCP

In a Hazard Analysis Critical Control Point (HACCP) system, all potential hazards to food safety at each stage of the production chain are identified. A Critical Control Point (CCP) is a step, procedure or point in a process where measures must be taken to prevent, eliminate or reduce a potential food hazard to an acceptable level. To ensure food safety, each CCP is monitored to check that it is within critical limits.

If limits are in danger of being broken, corrective action must be taken. This systematic approach, if properly implemented should ensure the safe production of food.

The seven requirements of a HACCP system are to:

- Conduct a hazard analysis and develop production flow charts
- Identify the CCP's
- Establish critical limits i.e. set target levels which must be met to ensure the CCP is under control
- Establish a system to monitor control of the CCP
- Establish corrective actions to be taken when monitoring indicates that a CCP is not under control
- Establish procedures for verification to confirm that the HACCP system is working correctly
- Establish documentation/records for all procedures

A HACCP style approach:

- Encourages proactivity in identifying food safety hazards before they occur
- Maximises product safety i.e. clean sheep

- Is non-destructive
- Provides evidence of due diligence
- Is cost effective
- Provides safety assurance involving all staff

Appendix 4: Suggested space allowances for housed sheep

Table 1: Space allowances for housed sheep.

Live weight of sheep (kg)	Area on straw (m^2/head)	Area on slats (m^2/head)
23-32	0.6-0.9	0.4-0.5
32-45	0.7-0.9	0.5-0.7
45-60	1.0-1.2	0.7-0.9
60-90	1.2-1.4	0.9-1.1

Table 2: Trough space for housed sheep

Live weight of sheep (kg)	Concentrates (mm/head)
23-32	300-350
32-45	350-400
45-60	400-450
60-90	450-500

When feeding hay and silage *ad libitum*, trough space should be 10–12 cm per ewe.

Appendix 5: Legislative requirements for welfare of sheep

The Protection of Animals Act 1911[5], the Agriculture (Miscellaneous Provisions) Act 1968 and the Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870)[6], make it an offence to cause or allow unnecessary pain or distress.

Dung contamination may compromise the animal's welfare by causing skin damage, pain and the increasing risk of infection. In addition, animals that are presented in a dirty condition may be lairaged to clean up. This additional handling may cause unnecessary stress to the animal.

The Welfare of Farmed Animals (England) Regulations 2000 require livestock to be provided with an adequate supply of fresh drinking water each day and to have access to food each day. The diet must be wholesome, appropriate to the species, and fed in sufficient quantity to maintain good health and to satisfy nutritional needs. Where any livestock, other than poultry, are kept in a building, they shall be kept on, or have access at all times to, a lying area, which is well drained or well maintained with dry bedding.

The Code of Recommendations for the Welfare of Livestock: Sheep (2003) (Welfare of Farmed Animals (England) Regulations 2000 (S.I. 2000 No. 1870)[5]) states that:

- **Animals shall be fed a wholesome diet, which is appropriate to their age and species, and which is fed to them in sufficient quantity to maintain them in good health, and to satisfy their nutritional needs and promote a positive state of well-being.**
- **All animals shall either have access to a suitable water supply and be provided with an adequate supply of fresh drinking water each day, or be able to satisfy their fluid intake needs by other means.**

[5] In Northern Ireland, Welfare of Animals Act 1972 (NI).

[6] Welfare of Farmed Animals Regulations (NI) 2000 & Welfare of Farmed Animals (Wales) Regulations 2001. The Welfare of Farmed Animals (Scotland) Regulations 2000 No.442.

Grazing animals should have access to an appropriate number of water troughs (large enough and of the right design), or some other source of drinkable water that the animals can readily use wherever they are grazing.

- Feeding and watering equipment shall be designed, constructed, placed and maintained so that contamination of food and water and the harmful effects of competition between animals are minimised.
- Winter housing of sheep can improve welfare, but problems of both disease and welfare can arise when large numbers are kept together. Advice should be sought on the design, construction or modifications of buildings. Adequate ventilation without draughts is of particular importance, as also is the provision of sufficient trough space and lying area.
- Air circulation, dust levels, temperature, relative humidity and gas concentrations shall be kept within limits that are not harmful to the animals.
- Planning the grazing rotation, and using effective medicinal products or vaccines, controls internal parasites. Advice on appropriate timing, and steps to avoid the development of anthelmintic-resistant worms, should be sought from a veterinary surgeon or specialist adviser. Protection from external parasites should be achieved by dipping or by the use of an effective preventive chemical agent.
- Sheep farmers should consider the state of the flock's dentition when culling. If sheep with poor teeth are to be retained, they should be provided with food which they can eat and their body condition should be carefully monitored.

Further Information

Guidance Booklets

Red Meat Safety and Clean Livestock Booklet FSA/0595/0602

Red Meat Safety and Clean Livestock Booklet (Welsh Version) FSA/0953/1104

Clean Beef Cattle for Slaughter – A guide for producers FSA/0951/1104

Clean Beef Cattle for Slaughter – A guide for producers (Welsh version) FSA/0958/0105

Posters

1. Harmful bacteria can spread between pens FSA/0905/0504
2. Harmful bacteria can spread in a dirty environment FSA/0906/0504
3. Bacteria on the fleece can transfer to the carcass FSA/0907/0504
4. Wet fleeces can increase the spread of bacteria FSA/0908/0504
5. Harmful bacteria in food and water will be shed in the faeces FSA/0909/0504
6. Harmful bacteria can spread in dirty bedding FSA/0910/0504

FSA CLP Website address

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