

Slaughter of animals for human consumption

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Summary

This paper briefly describes the formation of the OIE (World Organisation for Animal Health) *Ad hoc* Group on Humane Slaughter of Animals, summarises its initial discussions and provides details of its recommendations. These recommendations were approved (with some amendments) at the 73rd General Session of the OIE International Committee and have been included in the 14th edition of the OIE *Terrestrial Animal Health Code* (2005). The recommendations include some changes to current definitions of certain terminology, and guidelines pertaining to the commercial slaughter of animals for human consumption, designed to minimise avoidable pain and suffering at every stage of the pre-slaughter and slaughter processes. The main issues addressed by the *Ad hoc* Group were: general principles for slaughter, as related to personnel, animal behaviour, and the removal of distractions which can cause animals to stop or turn back; moving and handling animals following their arrival at the slaughterhouse; lairage design and construction; care of animals in lairages; and animal welfare issues associated with acceptable handling, restraining, stunning and slaughter methods applicable to various relevant species. The group acknowledged the significance of religious requirements as well as the cultural and ethnic factors associated with slaughter, and appropriate proposals were included in their final report. Important but less frequently occurring issues such as the management of foetuses during the slaughter of pregnant animals were also included in this work. Finally, the report of the *Ad hoc* Group also specified methods, procedures and practices that are unacceptable on animal welfare grounds.

Keywords

Foetus – Humane slaughter – Pre-slaughter – Religious – Restraining – Slaughter – Slaughterhouse – Stunning – Treatment – Welfare.

Introduction

The *Ad hoc* Group on the Humane Slaughter of Animals was established to develop standards in line with the recommendations of the permanent OIE (World Organisation for Animal Health) Animal Welfare Working Group. In establishing the membership of the group, the Director General of the OIE sought to achieve a balance of regional and cultural views without explicitly seeking representation from interested or professional parties.

The *Ad hoc* Group convened its first meeting in November 2003, discussed the principles to be followed and drafted

general guidelines on the slaughter of animals for human consumption. The report of the meeting was presented in February 2004 to participants at the Global Conference on Animal Welfare organised by the OIE in Paris. During the conference, interested stakeholders participated in a discussion group on the slaughter of animals for human consumption. Members of the *Ad hoc* Group updated this discussion group on the issues it had considered and the progress made. The views exchanged during this meeting were included in the proceedings of the conference and later presented and discussed, together with written responses from Member Countries and from international animal welfare non-governmental organisations (NGOs),

in the *Ad hoc* Group's second (final) meeting. This July 2004 meeting was concluded by a final report including proposed detailed guidelines and several new definitions. The report was endorsed, with some modifications, by the Working Group on Animal Welfare in December 2004 and put to the Code Commission before being adopted by the International Committee at the 2005 OIE General Session.

Summarised discussions

The *Ad hoc* Group saw its role as that of evaluating procedures and preparing guidelines designed to minimise avoidable pain and suffering at every stage of the pre-slaughter and slaughter processes, until the death of the animal. To ensure that its work harmonised with the work of the *Ad hoc* Groups on land and sea transport, the *Ad hoc* Group decided that the scope of its work would be taken to commence at the end of the journey to the slaughterhouse.

During the group's working process, the members relied on data derived from the relevant scientific literature, assisted when necessary by consultations with external experts, and on the experience of individual members in respective subjects. Guidelines published by animal welfare NGOs were taken into consideration. The *Ad hoc* Group approached its work by assessing the ethical considerations related to the animal welfare aspects of slaughter (18), and concentrated on the various procedures which are generally applied during the pre-slaughter and slaughter processes, reviewing them on the basis of the available scientific data, independent of any religious or cultural context. These pre-slaughter procedures included the lairaging, moving, handling, restraining and stunning of the animals (1, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 22, 25). Once those animal welfare concerns were addressed, the *Ad hoc* Group considered the specific issues associated with slaughter without stunning, such as the necessary restraint, the pain likely to be associated with the cut (for which it noted that there were no definitive data) and distress prior to unconsciousness (using available data to estimate the length of this period) (2, 4, 6, 7, 19, 21, 23, 24).

The *Ad hoc* Group acknowledged the significance of religious requirements, and of the cultural and ethnic factors associated with some forms of slaughter. The *Ad hoc* Group felt it important that these should not be treated as exempt from the guidelines, which are intended to provide a framework within which variations to certain steps in the process may be practised without compromising animal welfare.

The *Ad hoc* Group believed that methods of lairaging and the moving and restraining of animals before and during

religious slaughter are separate issues from religious slaughter requirements; with regard to restraint, there is a wide variation in methods, ranging from those with acceptable animal welfare to some which are totally unacceptable under any slaughter method. The *Ad hoc* Group also contended that some distressful and painful methods applied to conscious animals such as shackling and hoisting by the hind leg(s) or dragging by the leg(s) are not part of any religious requirements, are unacceptable in most circumstances, and should be phased out.

The *Ad hoc* Group encouraged Member Countries to approach the guidelines with a commitment to continuous incremental improvement to the process of managing animals prior to and during slaughter. It recognised that the sensitivity of addressing possible changes that are designed to improve animal welfare during stunning and slaughter would necessitate those changes being discussed with and within the relevant communities, with a view to achieving their voluntary adoption. The *Ad hoc* Group was aware of advances in animal welfare which had already been achieved in relation to such practices and encouraged further improvements, particularly in the area of pre-slaughter restraining methods.

The *Ad hoc* Group also believed that Member Countries should address the issue of the management of foetuses during the slaughter of pregnant animals (16), and drafted a proposal accordingly.

The draft guidelines, which provide details of the various slaughter methods with special reference to their respective animal welfare aspects, were completed during the second meeting of the *Ad hoc* Group. At the conclusion of this meeting, these guidelines, and a set of definitions, were proposed by the *Ad hoc* Group as the outcome of its work and were presented to the Animal Welfare Working Group for review during its third annual meeting, from 9 to 11 December 2004. The Working Group's comments and suggestions for minor modifications were sent to the members of the *Ad hoc* Group who, after endorsing most of them, approved the following guidelines (a slightly abridged/amended version is presented here for brevity). The guidelines underwent some changes before being adopted by the International Committee at the General Session and they have been included in the 14th edition of the OIE *Terrestrial Animal Health Code* (the *Code*). Revised chapters that address comments received from Member Countries will be presented at the 2006 General Session.

Outcome

Definitions

The following definitions, which are relevant to the slaughter of animals for human consumption, have been

reviewed by the *Ad hoc* Group and are proposed for inclusion within Chapter 1.1.1. (General Definitions) of the *Code*:

Death – irreversible loss of brain activity as demonstrated by loss of brain stem reflexes

Halal slaughter – slaughter of a religiously acceptable species, by a trained Muslim slaughterman, with or without prior stunning, by cutting the neck in order to sever the jugular veins and carotid arteries, oesophagus and trachea, without severing the spinal cord, while the animal is alive

Jhatka slaughter – slaughter of an acceptable species by decapitation according to the Sikh religion

Killing – any procedure which causes the death of an animal

Kosher slaughter – slaughter, of a religiously acceptable species, by a trained and accredited Jewish slaughterman, by cutting the neck in order to sever the jugular veins and carotid arteries, oesophagus and trachea of a conscious animal, without severing the spinal cord

Lairage – pens, yards and other holding areas used for accommodating animals in order to give them necessary attention (including water, fodder, rest) before they are moved on, used for specific purposes, or slaughtered

Restraint – the application to an animal of any procedure designed to restrict its movements in order to facilitate effective management

Slaughter – any procedure which causes the death of an animal by bleeding

Slaughterhouse – premises, including facilities for moving or lairaging animals, used for the slaughter of animals for human consumption or animal feeding and approved by the national Veterinary Services or other competent authority

Stunning – any mechanical, electrical, chemical or other procedure which causes immediate loss of consciousness which lasts until either the animal is killed or it recovers.

Guidelines for the slaughter of animals for human consumption

Based upon the Guiding Principles for Animal Welfare, as detailed in article 3.7.1.1. of the *Code*, the *Ad hoc* Group formulated Guidelines for the Slaughter of Animals for Human Consumption. This was done in line with article 3.7.1.2. – Scientific Basis for Guidelines.

The text is presented in the following 10 articles, which is included as a separate appendix within Section 3.7. – Animal Welfare – of the *Code*.

Article 1: general principles of slaughter

These guidelines address the need to ensure the welfare of food animals during pre-slaughter and slaughter processes, until they are dead.

These guidelines apply to those domestic animals commonly slaughtered in slaughterhouses, that is: cattle, buffalo, sheep, goats, deer, horses, pigs, ratites, camelids and poultry. Other animals, wherever they have been reared, should be managed to ensure that their transport, lairaging, restraint and slaughter is carried out without causing undue stress to the animals; the principles underpinning these guidelines also apply to these animals.

Personnel

Personnel engaged in the unloading, moving, lairaging, care, restraining, stunning, slaughter and bleeding of animals play an important role in the welfare of those animals. For this reason, there should be a sufficient number of personnel, who should be patient, considerate, competent and familiar with the guidelines in this document and their application within the national context.

The management of the slaughterhouse and the Veterinary Services should ensure that slaughterhouse staff perform their tasks in accordance with the principles of animal welfare.

Animal behaviour

Animal handlers should be experienced and competent in handling and moving farm livestock, and understand the behaviour patterns of animals and the underlying principles of good animal handling.

The behaviour of individual animals or groups of animals will vary, depending on their breed, sex, temperament and age and the way in which they have been reared and handled. Despite these differences, the following behaviour patterns, which are always present to some degree in domestic animals, should be taken into consideration in handling and moving animals:

- a) Most domestic livestock are kept in herds and follow a leader by instinct.
- b) Animals that are likely to be hostile to each other in a group situation should not be mixed at slaughterhouses.
- c) The desire of some animals to control their personal space should be taken into account in designing facilities.
- d) Domestic animals will try to escape if an animal handler approaches closer than a certain distance. This critical distance, which defines the flight zone, varies among species and individuals of the same species, and depends upon previous contact with humans. Animals reared in close proximity to humans, i.e. tame, have no flight zone,

whereas those kept in free range or extensive systems may have flight zones that may vary from one metre to many metres. Animal handlers should avoid sudden penetration of the flight zone as this may cause a panic reaction which could lead to aggressive behaviour or attempted escape (Figs 1 and 2).

e) Animal handlers should use the point of balance at an animal's shoulder to move animals, adopting a position behind the point of balance to move an animal forward and in front of the point of balance to move it backward.

f) Domestic animals have wide-angle vision but only have limited forward binocular vision and poor perception of depth. This means that they can detect objects and movements beside and behind them, but can only judge distances directly ahead.

g) Although all domestic animals have a highly sensitive sense of smell, they react in different ways to the smells of slaughterhouses. Smells that cause fear or other negative responses should be taken into consideration when managing animals.

h) Domestic animals can hear over a greater range of frequencies than humans and are more sensitive to higher frequencies. They tend to be alarmed by constant loud noise and by sudden noises, which may cause them to panic.

Distractions and their removal

Distractions that may cause approaching animals to stop, balk or turn back should not be included in the design of new facilities and removed from existing ones. Table I shows examples of common distractions and methods of eliminating them.

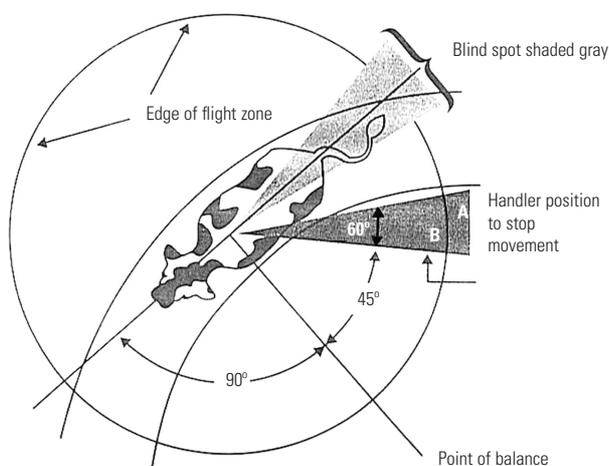


Fig. 1
An example of a flight zone (cattle)

Article 2: moving and handling animals

The following principles should apply to unloading animals, moving them into lairage pens, out of the lairage pens and up to the slaughter point:

- the condition of the animals should be assessed upon their arrival to check for any animal welfare problems
- injured or sick animals requiring immediate slaughter should be killed humanely at the site where they are found
- the use of force on animals that have little or no room to move should not occur
- instruments that administer electric shocks (e.g. goads and prods) to assist the movement of animals should only be used when absolutely necessary (the power output of each shock should also be restricted). If such use is necessary, it should be limited to the hindquarters of pigs and large ruminants, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on horses, sheep and goats of any age, or on calves or piglets, nor on animals that have little or no room to move.

Performance standards should be established in which numerical scoring is used to evaluate the use of such instruments and to measure the percentage of animals moved with an electric instrument. In properly designed and constructed facilities with competent animal handlers, it should be possible to move 75% or more of the animals without the use of electric instruments.

Acceptable aids for moving animals include panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and metallic rattles. These instruments should be used in a manner sufficient to encourage and direct movement of the animals but without physical contact with them.

Shouting or yelling at animals to encourage them to move should not occur as such actions may make the animals agitated, leading to crowding or falling.

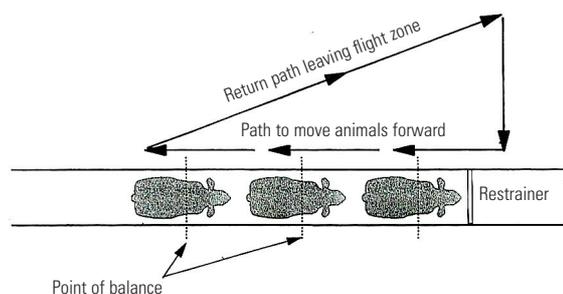


Fig. 2
Handler movement pattern to move cattle forward

Table I
Methods for eliminating distractions that commonly cause animals to stop or turn back

Distraction	Elimination method
Reflections on shiny metal or wet floors	Move a lamp or change lighting
Dark entrances to chutes, races, stun boxes or conveyor restrainers	Illuminate with indirect lighting that does not shine directly into the eyes of approaching animals
Animals seeing moving people or equipment up ahead	Install solid sides on chutes and races or install shields
Chains or other loose objects hanging in chutes or on fences	Remove them
Uneven floors or a sudden drop in floor level at the entrance to conveyor restrainers	Avoid uneven floor surfaces or install a solid false floor under the restrainer to provide an illusion of a solid and continuous walking surface
Sounds of air hissing from pneumatic equipment	Install silencers or use hydraulic equipment
Clanging and banging of metal objects	Install rubber stops on gates and other devices to reduce metal to metal contact
Air currents from fans or air curtains blowing into the face of animals	Redirect or reposition equipment

Implements that cause pain and suffering such as large sticks, sticks with sharp ends, metal piping, fencing wire or heavy leather belts should not be used to move animals.

Animals should be grasped or lifted in a manner which avoids pain or suffering and physical damage (e.g. bruising, fractures, dislocations). In the case of quadrupeds, manual lifting by a person should only be used with young animals or small species, and in a manner appropriate to the species; grasping or lifting such animals only by their wool, hair, feet, neck, ears or tails causes pain and suffering and should not be permitted, except in an emergency where animal welfare or human safety may otherwise be compromised.

Conscious animals should not be thrown or dragged.

Animals should not be forced to move at a speed greater than their normal walking pace, in order to minimise injury through falling or slipping. Performance standards should be established where numerical scoring of the prevalence of animals slipping or falling is used to evaluate whether animal moving practices and/or facilities should be improved. In properly designed and constructed facilities with competent animal handlers, it should be possible to move 99% of animals without their falling.

Animal handlers should not force an animal to walk over the top of other animals.

Under no circumstances should animal handlers resort to violent acts to move animals, such as crushing or breaking animals' tails, grasping animals' eyes or pulling them by their ears. Animal handlers should never apply an injurious object or irritant substance to sensitive areas such as eyes, mouth, ears, the anogenital region or the belly.

Requirements for animals delivered in containers

Containers in which animals are transported should be handled with care, and should not be thrown, dropped or

knocked over. Where possible, they should be loaded and unloaded horizontally and mechanically.

Animals delivered in containers with perforated or flexible bottoms should be unloaded with particular care in order to avoid injury. Where appropriate, animals should be unloaded from the containers individually.

Animals that have been transported in containers should be slaughtered as soon as possible; mammals and ratites which are not taken directly upon arrival to the place of slaughter should have drinking water available to them from appropriate facilities at all times. Delivery of poultry for slaughter should be scheduled such that they are not deprived of water at the premises for longer than 12 h. Animals that have not been slaughtered within 12 h of their arrival should be fed, and should subsequently be given moderate amounts of food at appropriate intervals.

Provisions relevant to restraining and containing animals

Provisions relevant to restraining animals for stunning or slaughter without stunning, to help maintain animal welfare include:

- provision of a non-slip floor
- ensuring that the restraining equipment does not exert excessive pressure, thus causing the animal to struggle or vocalise
- engineering equipment to reduce the noise of hissing air and clanging metal
- ensuring that restraining equipment has no sharp edges that would harm animals
- using restraining devices appropriately and not jerking them or making other sudden movements.

Methods of restraint causing avoidable suffering, such as the following, should not be used with conscious animals because they cause severe pain and stress:

- suspending or hoisting large animals (other than poultry) by the feet or legs
- indiscriminate and inappropriate use of stunning equipment
- mechanical clamping of an animal's legs or feet (other than shackles used for poultry and ostriches) as the sole method of restraint
- breaking legs, cutting leg tendons or blinding animals in order to immobilise them
- immobilising animals by severing the spinal cord, e.g. by using a dagger such as a 'puntilla'
- using electric currents to immobilise animals, except for proper stunning.

Article 3: lairage design and construction

The lairage should be designed and constructed to hold an appropriate number of animals in relation to the throughput rate of the slaughterhouse without compromising the welfare of the animals.

In order to permit operations to be conducted as smoothly and efficiently as possible without injury or undue stress to the animals, the lairage areas should be designed and constructed so as to allow the animals to move freely in the required direction, using their behavioural characteristics and without undue penetration of their flight zone.

The following guidelines may help to achieve this.

Design

The lairage should be designed to allow a one-way flow of animals from unloading to the point of slaughter, with a minimum of abrupt corners to negotiate.

In red meat slaughterhouses, pens, passageways and races should be arranged in such a way as to permit inspection of animals at any time, and to permit the removal of sick or injured animals when considered appropriate; separate appropriate accommodation should be provided for these animals.

Each animal should have room to stand up and lie down and, when confined in a pen, to turn around. The lairage should have sufficient accommodation for the number of animals intended to be held. Drinking water should always be available to the animals, and the method of delivery should be appropriate to the type of animal held. Troughs should be designed and installed in such a way as to minimise the risk of them becoming fouled by faeces, but without introducing the risk of bruising and injury to animals and without hindering their movement.

Holding pens should be rectangular rather than square, to allow as many animals as possible to stand or lie down

against a wall. Where feed troughs are provided, they should be sufficient in number and feeding space to allow all animals adequate access to feed. The feed trough should not hinder the movement of animals.

Where tethers, ties or individual stalls are used, these should be designed so as not to cause injury or distress, especially when the animals are lying down, standing up, drinking and feeding.

Passageways and races should be either straight or slightly curved, as appropriate to the animal species. Passageways and races should have solid sides, but when there is a double race the shared partition should allow adjacent animals to see each other. For pigs and sheep, passageways should be wide enough to enable two or more animals to walk side by side for as long as possible. At the point where passageways are reduced in width, this should be done by a means that prevents excessive bunching of the animals.

Animal handlers should be positioned alongside races and passageways on the inside radius of any curve, to take advantage of the natural tendency of animals to circle an intruder. Where one-way gates are used, they should be of a design that avoids bruising. Races should be horizontal, but where there is a slope, they should be constructed to allow the free movement of animals without injury.

There should be a waiting pen, with a level floor and solid sides, between the holding pens and the race leading to the point of stunning or slaughter, to ensure a steady supply of animals for stunning or slaughter and to avoid having animal handlers trying to rush animals from the holding pens. The waiting pen should be designed so that animals cannot be trapped or trampled (ideally waiting pens should be circular).

Ramps or lifts should be used for loading and unloading animals where there is a difference in height or a gap between the floor of the vehicle and the unloading area. The ramp should be well drained, not slippery and adjustable to facilitate easy movement of animals without causing distress or injury.

Construction

Lairages should be constructed and maintained so as to provide protection from unfavourable climatic conditions, using strong and resistant materials, such as concrete and metal, that have been treated to prevent corrosion. Surfaces should be easy to clean. There should be no sharp edges or protuberances that may injure the animals.

Floors should be well drained and not slippery; they should not cause injury to the feet of the animals. Where necessary floors should be insulated or covered with appropriate bedding. Drainage grids should be placed at the sides of pens and passageways and not where animals

would have to cross them. Discontinuities or changes in floor patterns or texture that could cause baulking in the movement of animals should be avoided.

Lairages should be provided with adequate lighting, but care should be taken to avoid harsh lights and shadows, which frighten the animals or affect their movement. The fact that animals will move more readily from a darker area into a well-lit area might be exploited by providing lighting that can be regulated accordingly.

Lairages should be well ventilated, and the air flow should be arranged so that odours and draughts do not adversely affect the health and welfare of the animals.

Care should be taken to protect the animals from potentially disturbing noises, for example by avoiding the use of noisy hydraulic or pneumatic equipment, and muffling noisy metal equipment by the use of suitable padding, or by minimising the transmission of such noise to the areas where animals are held and slaughtered.

Where animals are kept in outdoor lairages without natural shelter or shade, they should be protected from the effects of adverse weather conditions.

Article 4: care in lairages

Animals in lairages should be cared for in accordance with the following guidelines:

- as far as possible, established groups of animals should be kept together. Each animal should have enough space to stand up, lie down and turn around. Animals hostile to each other should be separated
- where tethers, ties or individual stalls are used they should allow animals to stand up and lie down without causing injury or distress
- where bedding is provided, it should be maintained in a condition that minimises risks to the health and safety of the animals, and sufficient quantity should be used so that animals do not become soiled with manure
- animals should be kept securely in the lairage and care should be taken to prevent them from escaping and from predators
- suitable drinking water should be available to the animals on their arrival and throughout the time they remain in lairages, unless they are to be slaughtered without delay
- if animals are not to be slaughtered as soon as possible, suitable feed should be available to the animals on arrival and at intervals appropriate to the species. Unweaned animals should be slaughtered as soon as possible
- in order to prevent heat stress, animals subjected to high temperatures, particularly pigs and poultry, should be

cooled by the use of water sprays, fans or other suitable means

- the lairage area should be well lit in order to enable the animals to see clearly without being dazzled. During the night, the lights should be dimmed
- the condition and health status of the animals in a lairage should be inspected at least every morning and evening by a veterinarian or, under the latter's responsibility, by another competent person. Animals that are sick, weak, injured or showing visible signs of distress should be treated or killed immediately
- lactating dairy animals should be slaughtered as soon as possible. Dairy animals with obvious udder distension should be milked to minimise udder discomfort
- pregnant animals giving birth during the journey or in the lairage should be slaughtered as soon as possible or provided with conditions that are appropriate for suckling and the welfare of the newborn
- animals with horns or tusks capable of injuring other animals, if aggressive, should be penned separately.

Recommendations for specific species are described in detail in Articles 6, 7, 8 and 9.

Article 5: management of foetuses during the slaughter of pregnant animals

The welfare of foetuses during the slaughter of pregnant animals needs to be safeguarded, as follows:

- the foetus must be unconscious before being removed from the uterus; to ensure that this is the case they should be removed no sooner than 5 min after the maternal neck or chest cut. A foetal heartbeat will usually still be present and foetal movements may occur at this stage, but these are only a cause for concern if the exposed foetus successfully breathes air
- if a live mature foetus is removed from the uterus, it should be prevented from inflating its lungs and breathing air (e.g. by clamping the trachea)
- when uterine, placental or foetal tissues, including foetal blood, are not to be collected as part of the post-slaughter processing of pregnant animals, all foetuses should be left inside the unopened uterus until they are dead. When uterine, placental or foetal tissues are to be collected, where practical, foetuses should not be removed from the uterus until at least 15 min to 20 min after the maternal neck or chest cut
- if there is any doubt about consciousness, the foetus should be killed with a captive bolt or a blow to the head with a suitable blunt instrument.

The above guidelines do not refer to foetal rescue. Foetal rescue, the practice of attempting to revive foetuses found

alive at evisceration of the dam, should not be attempted during normal commercial slaughter as it may lead to serious welfare complications in the newborn animal. These include impaired brain function resulting from oxygen shortage before rescue is completed, compromised breathing and body heat production because of foetal immaturity, and an increased incidence of infections due to a lack of colostrum.

Article 6: handling and restraining methods

Table II provides a summary of acceptable handling and restraining methods, and the associated animal welfare issues.

Article 7: stunning methods

General

The competence of the operators, and the appropriateness and effectiveness of the method used for stunning are the responsibility of the management of the slaughterhouse, and should be checked regularly by a competent authority. Persons carrying out stunning should be properly trained and competent, and should ensure that:

- the animal is adequately restrained
- animals in restraints are stunned as soon as possible
- the equipment used for stunning is maintained and operated properly in accordance with the manufacturer's recommendations, in particular with regard to the species and size of the animal
- the instrument is applied correctly
- stunned animals are bled out (slaughtered) as soon as possible
- animals are not stunned when slaughter is likely to be delayed.

In addition, when an animal is not properly stunned, a back-up procedure must be used immediately.

Mechanical stunning

A mechanical device should be applied, usually to the front of the head and perpendicular to the bone surface. Figures 3 to 8 illustrate the proper application of the device for certain species.

Signs of correct stunning using a mechanical instrument are as follows:

- the animal collapses immediately and does not attempt to stand up
- the body and muscles of the animal become tonic (rigid) immediately after the shot
- normal rhythmic breathing temporarily stops

- the eyelid is open with the eyeball facing straight ahead and is not rotated.

Electrical stunning

Direct contact

An electrical device should be applied to the animal in accordance with the following guidelines.

To ensure that the flow of current is optimal, electrodes should be well designed and constructed, cleaned regularly, and maintained in accordance with the manufacturer's specifications. They should be placed so that they span the brain. The application of electrical current that bypasses the brain is unacceptable unless the animal has already been stunned. The use of a single current leg-to-leg device is unacceptable as a stunning method.

If the electrical stunning is intended to cause cardiac arrest, the electrodes should either span the brain and immediately thereafter the heart, on the condition that it has been ascertained that the animal is adequately stunned, or alternately span the brain and heart simultaneously.

Electrical stunning equipment should not be applied on animals as a means of guidance, movement, restraint or immobilisation, and should not deliver any shock to the animal before the actual stunning or killing.

Before being used on animals, electrical stunning apparatus should be tested using appropriate resistors or dummy loads to ensure the power output is adequate to stun animals.

The apparatus should incorporate a device that monitors and displays the stunning current delivered to the animals. Appropriate measures, such as removing excess wool or wetting the skin only at the point of contact, can be taken to minimise impedance of the skin and facilitate effective stunning.

The apparatus required for electrical stunning should be provided with adequate power to continuously achieve the minimum current level recommended for stunning, as indicated in Table III.

In all cases, the correct current level shall be attained within 1 s of the initiation of stun and maintained for between 1 s and 3 s, in accordance with the manufacturer's instructions.

Electrical stunning of birds using a waterbath

In the case of birds suspended on a moving line, measures should be taken to ensure that the birds are not wing flapping at the entrance of the stunner. The birds should be secure in their shackles, but there should not be undue pressure on their shanks.

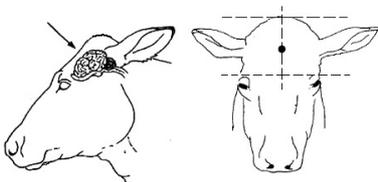
Table II
Summary of acceptable handling and restraining methods, and the associated animal welfare issues

Restraint method	Specific purpose	Animal welfare concerns /implications	Key animal welfare requirements	Applicable species
No restraint				
Animals are grouped together in a container	Gas stunning	Improper handling and the high density of animals create stress	Competent animal handlers in lairage; facilities; stocking density	Pigs, poultry
Animals remain in the field	Free bullet	Inappropriate shooting distance, calibre and ballistics; missing the vital organ or body part that is targeted will cause great suffering	Operator competence	Deer
Animals are held in a group stunning pen	Electrical stunning (head-only); captive bolt	Uncontrolled movement of animals impedes use of hand operated electrical and mechanical stunning methods	Competent animal handlers in lairage and at stunning point	Pigs, sheep, goats, calves
Individual animals are confined in a stunning pen/box	Electrical and mechanical stunning methods	Accuracy of stunning method, if the floor is slippery animals may fall down as they are being loaded	Competent animal handlers; proper design and maintenance of floors	Cattle, buffalo, sheep, goats, horses, pigs, deer, camelids, ratites
Head restraint				
Animal is held upright in a halter /head collar/bridle	Captive bolt; free bullet	This method is suitable for halter-trained animals but will cause stress in untrained animals	Competent animal handlers	Cattle, buffalo, horses, camelids
Animal is held upright in a neck yoke	Captive bolt; electrical head-only stunning; free bullet; slaughter without stunning	Stress of loading and neck capture; stress of prolonged restraint, horn configuration; less suitable for fast line speeds, animals struggling and falling due to slippery floor, excessive pressure	Equipment; competent animal handlers; prompt stunning and/or slaughter	Cattle
The animal's head is restrained in an electrical stunning box	Electrical head-only stunning	Stress of capture and positioning	Competent animal handler	Ostriches
Leg restraint				
Animal stands on three legs and the other leg is tied in flexion	Captive bolt; free bullet	Ineffective control of animal movement, misdirected shots	Competent animal handlers	Breeding pigs (boars and sows)
Three of the four legs are tied	Mechanical stunning methods; slaughter without stunning	Stress of resisting restraint; prolonged restraint, animal temperament; bruising	Competent animal handlers. Keep restraint as short as possible	Sheep, goats, small camelids, pigs
Animal is restrained using a mechanical leg clamp	Electrical head-only stunning	Stress of resisting restraint	Competent animal handlers; proper equipment design and operation	Ostriches
Upright restraint				
Animal is held at the beak	Captive bolt; electrical head-only stunning	Stress of capture	Sufficient competent animal handlers	Ostriches
The whole body is manually held upright	Captive bolt; electrical head-only stunning; slaughter without stunning	Stress of capture and restraint; accuracy of stunning/slaughter	Competent animal handlers	Sheep, goats, calves, ratites, small camelids, poultry
The whole body is held upright using a mechanical clamp/crush /squeeze/V-restrainer (static)	Captive bolt; electrical methods; slaughter without stunning	Stress of loading of animal; excessive pressure, size mismatch between restrainer and animal	Proper design and operation of equipment	Cattle, calves, buffalo, sheep, goats, deer, pigs, ostriches
Animal is restrained using a mechanical straddle (static)	Slaughter without stunning; electrical methods; captive bolt	Stress of loading of animal	Competent animal handlers	Cattle, sheep, goats, pigs
Wing shackling with beak holding (mechanical or manual)	Electrical stunning	Excessive tension applied prior to stunning	Competent animal handlers	Ostriches
Animal is restrained using a mechanical straddle/ band restrainer (moving)	Electrical methods; captive bolt; slaughter without stunning	Stress of loading of animal; size mismatch between restrainer and animal	Competent animal handlers; proper design and layout of restraint	Cattle, calves, sheep, goats, pigs
Animal is mechanically restrained on a flat bed/deck before being tipped out of containers on to conveyors	Presentation of birds for shackling prior to electrical stunning; gas stunning	Stress and injury due to tipping in dump-module systems; height of tipping; conscious poultry; broken bones and dislocations	Proper design and operation of equipment	Chickens

Table II (cont.)

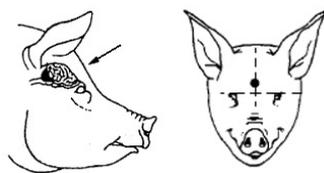
Summary of acceptable handling and restraining methods, and the associated animal welfare issues

Restraint method	Specific purpose	Animal welfare concerns /implications	Key animal welfare requirements	Applicable species
Lateral restraint Manual or mechanical, using a restrainer/cradle	Slaughter without stunning	Stress of restraint	Competent animal handlers	Sheep, goats, calves, camelids, cattle
Suspension/inversion Using shackles	Electrical stunning; slaughter without stunning	Inversion stress; pain from compression on leg bones	Competent animal handlers; proper design and operation of equipment	Poultry
Using a cone	Electrical head-only stunning; captive bolt; slaughter without stunning	Inversion stress	Competent animal handlers; proper design and operation of equipment	Poultry
Animal is inverted in a rotating box with a fixed side (s) e.g. Weinberg	Slaughter without stunning	Inversion stress; stress of resisting restraint; prolonged restraint	Proper design and operation of equipment. Keep restraint as brief as possible	Cattle
Animal is inverted in a rotating box with a compressible side (s)	Slaughter without stunning	Inversion stress; stress of resisting restraint; prolonged restraint. Preferable to rotating box with fixed sides	Proper design and operation of equipment. Keep restraint as brief as possible	Cattle
Casting Animal is cast/hobbled manually	Mechanical stunning methods; slaughter without stunning	Stress of resisting restraint; animal temperament; bruising	Competent animal handlers. Keep restraint as short as possible	Sheep, goats, calves, small camelids, pigs
Animal is cast with a rope and held in leg restraints	Mechanical stunning methods; slaughter without stunning	Stress of resisting restraint; prolonged restraint; animal temperament; bruising	Competent animal handlers. Keep restraint as short as possible	Cattle, camelids



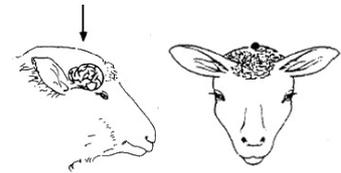
Aim at the point halfway between the top of the head and the imaginary line between the eyes and place the muzzle at right angles to the frontal surface

Fig. 3
Mechanical stunning of cattle



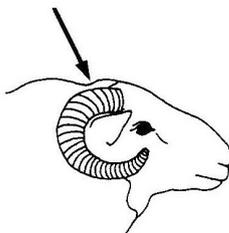
Place the muzzle about 2.5 cm to 5 cm above the level of the eyes, and at right angles to the frontal surface

Fig. 4
Mechanical stunning of pigs



In hornless sheep use the highest point of the head and aim towards the angle of the jaw

Fig. 5
Mechanical stunning of hornless sheep



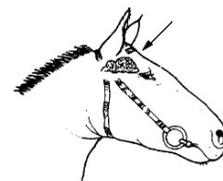
For horned sheep place the muzzle just behind the ridge which runs between the horns and aim towards the mouth

Fig. 6
Mechanical stunning of horned sheep



In hornless goats use the highest point of the head and aim towards the angle of the jaw. For horned goats, place the muzzle just behind the ridge which runs between the horns and aim towards the mouth

Fig. 7
Mechanical stunning of goats



Place the muzzle at right angles to the frontal surface well above the point where two imaginary lines from the eyes to the ears cross

Fig. 8
Mechanical stunning of horses

Table III
Minimum current level recommended for stunning

Species	Minimum current levels (amperes per animal)
Cattle	1.5
Calves	1.0
Pigs	1.25
Sheep and goats	0.5
Ostriches	0.4

Waterbaths for poultry should be adequate in size and depth for the type of bird being slaughtered, and their height should be adjustable to allow for the head of each bird to be immersed. The electrode immersed in the bath should extend the full length of the waterbath.

The waterbath should be designed and maintained in such a way that when the shackles pass over the water they are in continuous contact with the earthed rubbing bar.

The control box for the waterbath stunner should incorporate an ammeter, which displays the total current flowing through the birds.

The shackle-to-leg contact should be wetted, preferably before the birds are inserted in the shackles. In order to improve the electrical conductivity of the water it is recommended that salt be added to the waterbath as necessary.

Birds should receive the current for at least 4 s.

Using waterbaths, birds are stunned in groups and different birds will have different impedances. The voltage should be adjusted so that the total current is the required current per bird as shown in Table IV, multiplied by the number of birds in the waterbath at the same time. The table shows values found to be satisfactory when employing a 50 Hz sinusoidal alternating current.

While a lower current may also be satisfactory, the current shall in any case be such as to ensure that unconsciousness occurs immediately and lasts until the bird has been killed by cardiac arrest or by bleeding. When higher electrical frequencies are used, higher currents may be required.

Every effort should be made to ensure that no conscious or live birds enter the scalding tank.

In the case of automatic systems, until fail-safe systems of stunning and bleeding have been introduced, a manual back-up system should be in place to ensure that any birds which have missed the waterbath stunner and/or the

Table IV
Recommended current for irreversible electrical stunning of birds

Species	Recommended current (milliamperes per bird)
Broilers	120
Layers (spent hens)	120
Turkeys	150
Ducks and geese	130

automatic neck-cutter are immediately stunned and/or humanely killed, and they are dead before entering the scalding tank.

To lessen the number of unstunned birds reaching neck cutters, steps should be taken to ensure that small birds do not go on the line amongst bigger birds and that these small birds are stunned separately.

Gas stunning

Stunning of pigs by exposure to carbon dioxide

The concentration of carbon dioxide (CO₂) for stunning should ideally be 90% by volume and certainly no less than 80% by volume. After entering the stunning chamber the animals should be conveyed to the point of maximum concentration of the gas and be kept there until they are dead or brought into a state of insensibility which lasts until death occurs due to bleeding. Ideally, pigs should be exposed to this concentration of CO₂ for 3 min. The concentration of the gas should be such that it minimises as far as possible all stress of the animal prior to loss of consciousness.

The chamber in which animals are exposed to CO₂ and the equipment used for conveying them through it shall be designed, constructed and maintained in such a way as to avoid injury or unnecessary stress to the animals. The animal density within the chamber should be such that it is unnecessary to stack animals on top of each other.

The conveyor and the chamber should be adequately lit to allow the animals to see their surroundings and, if possible, each other.

It should be possible to inspect the CO₂ chamber while it is in use, and to have access to the animals in emergency cases.

The chamber should be equipped to continuously measure and display the CO₂ concentration at the point of stunning and the time of exposure, and to give a clearly visible and audible warning if the concentration of CO₂ falls below the required level.

Inert gas mixtures for stunning pigs

Inhalation of a high concentration of CO₂ is aversive and can be distressing to animals. Therefore, the use of non-aversive gas mixtures is being developed as follows:

- a) a maximum of 2% by volume of oxygen in argon, nitrogen or other inert gases, or
- b) a maximum of 30% by volume of CO₂ and a maximum of 2% by volume of oxygen in mixtures with CO₂ and argon, nitrogen or other inert gases.

Exposure time to the gas mixtures should be sufficient to ensure that no pigs regain consciousness before death occurs through loss of blood or a cardiac arrest.

Gas stunning of poultry

The main objective of gas stunning is to avoid the pain and suffering of waterbath stunning and killing systems, which involve shackling conscious poultry. Therefore, gas stunning should be limited to birds contained in crates or on conveyors only. The gas mixture should be non-aversive to poultry.

Gas stunning of poultry in their transport containers will eliminate the need for live bird handling at the processing plant and all the problems associated with electrical stunning. Similarly, gas stunning of poultry on a conveyor eliminates the problems associated with electrical water bath stunning.

a) Gas mixtures used for stunning poultry:

- a minimum of 2 min exposure to 40% CO₂, 30% oxygen and 30% nitrogen, followed by a minimum of 1 min. exposure to 80% CO₂ in air
- a minimum of 2 min exposure to any mixture of argon, nitrogen or other inert gases with atmospheric air and CO₂, provided that the CO₂ concentration does not exceed 30% by volume and the residual oxygen concentration does not exceed 2% by volume
- a minimum of 2 min exposure to argon, nitrogen, other inert gases or any mixture of these gases in atmospheric air with a maximum of 2% residual oxygen by volume
- a minimum of 2 min exposure to a minimum of 55% CO₂ in air.

b) Requirements for effective use:

- compressed gases should be vaporised before being administered into the chamber
- under no circumstances, should solid gases with freezing temperatures enter the chamber
- gas mixtures should be humidified according to the supplier's specifications

– the concentration of gas in the chamber should be continuously monitored and displayed to ensure that it is appropriate.

Under no circumstances should birds exposed to gas mixtures be allowed to regain consciousness. If necessary, the exposure time to the gas should be extended.

Bleeding

From the point of view of animal welfare, animals that are stunned with a reversible method should be bled without delay and certainly within the time limits shown in Table V.

All animals should be bled by incising both carotid arteries, or the vessels from which they arise. However, when the stunning method used causes cardiac arrest, the incision of all of these vessels is not necessary.

It should be possible for staff to observe, inspect and access the animals throughout the bleeding period. Any animal showing signs of recovering consciousness should be re-stunned.

After incision of the blood vessels, no scalding carcass treatment or dressing procedures should be performed on the animals for at least 30 s, and definitely not before all brain-stem reflexes have ceased.

Article 8: acceptable stunning methods

Table VI provides a summary of acceptable stunning methods and the associated animal welfare issues.

Article 9: acceptable slaughter methods

Table VII provides a summary of acceptable slaughter methods, and the associated animal welfare issues.

Article 10: methods, procedures or practices unacceptable on animal welfare grounds

Restraining methods that immobilise animals by injuring them, e.g. by breaking their legs, cutting their leg tendons or severing their spinal chord with a 'puntilla', cause severe pain and stress in animals. These methods are not acceptable in any species.

Table V
Maximum delay for bleeding of stunned animals

Stunning method	Maximum delay for bleeding to be started
Electrical methods and non-penetrating bolt	20 s
Carbon dioxide	60 s (after leaving the chamber)

Table VI
Summary of acceptable stunning methods and the associated animal welfare issues

Stunning method	Specific method	Animal welfare concerns/implications	Key animal welfare requirements	Species	Comment
Mechanical	Free bullet	Inaccurate targeting and inappropriate ballistics	Accuracy; head shots only; correct ballistics	Cattle, calves, buffalo, deer, horses, pigs (boars and sows)	Care must be taken not to endanger the safety of personnel
	Captive bolt – penetrating	Inaccurate targeting; velocity and diameter of bolt	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, buffalo, sheep, goats, deer, horses, pigs, camelids, ratites	Unsuitable for specimen collection from TSE suspects. A back-up gun should be available in the event of an ineffective shot
	Captive bolt – non-penetrating	Inaccurate targeting; velocity of bolt; potentially higher failure rate than penetrating captive bolt	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, sheep, goats, deer, pigs, camelids, ratites	Presently available devices are not recommended for young bulls and animals with thick skull
	Manual percussive blow	Inaccurate targeting; insufficient power; size of instrument	Competent animal handlers; restraint; accuracy. Not recommended for general use	Young and small mammals, ostriches and poultry	Mechanical devices potentially more reliable. Where manual percussive blow is used, unconsciousness should be achieved with a single sharp blow delivered to the central skull bones
Electrical	Split application: 1. across head then head to chest 2. across head then across chest	Accidental pre-stun electric shocks; wrong electrode positioning; application of a current to the body while animal is conscious; inadequate current and voltage	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, sheep, goats, pigs, ratites and poultry	Systems involving repeated application of head-only or head-to-leg with short current durations (< 1 s) in the first application should not be used. Where cardiac arrest occurs, the carcass may not be suitable for Halal
	Single application: 1. head only 2. head to body 3. head to leg	Accidental pre-stun electric shocks; inadequate current and voltage; wrong electrode positioning; recovery of consciousness	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, sheep, goats, pigs, ratites, poultry	Where cardiac arrest occurs, the carcass may not be suitable for Halal
	Waterbath	Restraint, accidental pre-stun electric shocks; inadequate current and voltage; recovery of consciousness	Competent operation and maintenance of equipment	Poultry only	Where cardiac arrest occurs, the carcass may not be suitable for Halal
Gaseous	CO ₂ air/O ₂ mixture; CO ₂ inert gas mixture	Aversiveness of high CO ₂ ; respiratory distress; inadequate exposure	Concentration; duration of exposure; design, maintenance and operation of equipment; stocking density management	Pigs, poultry	Gaseous methods may not be suitable for Halal
	Inert gases	Recovery of consciousness	Concentration; duration of exposure; design, maintenance and operation of equipment; stocking density management	Pigs, poultry	Gaseous methods may not be suitable for Halal

CO₂ : carbon dioxide

TSE : transmissible spongiform encephalopathy

Table VII
Summary of acceptable slaughter methods, and the associated animal welfare issues

Slaughter method	Specific method	Animal welfare concerns/implications	Key animal welfare requirements	Species	Comment
Bleeding out by severance of blood vessels in the neck without stunning	Full frontal cutting across the throat	Failure to cut both common carotid arteries; occlusion of cut arteries	A very sharp blade or knife, of sufficient length so that the point of the knife remains outside the incision during the cut; the point of the knife should not be used to make the incision; an incision that does not close over the knife during the throat cut	Cattle, buffalo, horses, camelids, sheep, goats, poultry, ratites	This method is applicable to Halal and Kosher for relevant species
Bleeding with prior stunning	Neck stab followed by forward cut	Ineffective stunning; failure to cut both common carotid arteries; impaired blood flow; delay in cutting after reversible stunning	Prompt and accurate cutting	Camelids, sheep, goats, poultry, ratites	
	Neck stab alone	Ineffective stunning; failure to cut both common carotid arteries; impaired blood flow; delay in cutting after reversible stunning	Prompt and accurate cutting	Camelids, sheep, goats, poultry, ratites	
	Chest stick into major arteries or hollow-tube knife into heart	Ineffective stunning; inadequate size of stick wound; inadequate length of sticking knife; delay in sticking after reversible stunning	Prompt and accurate sticking	Cattle, sheep, goats, pig	
	Neck skin cut followed by severance of vessels in the neck	Ineffective stunning; inadequate size of stick wound; inadequate length of sticking knife; delay in sticking after reversible stunning	Prompt and accurate cutting of vessels	Cattle	
	Automated mechanical cutting	Ineffective stunning; failure to cut; misplaced cuts; recovery of consciousness following reversible stunning systems	Design, maintenance and operation of equipment; accuracy of cut; manual back-up	Poultry only	
	Manual neck cut on one side	Ineffective stunning; recovery of consciousness following reversible stunning systems	Prior non-reversible stunning	Poultry only	Slow induction of unconsciousness under slaughter without stunning
	Oral cut	Ineffective stunning; recovery of consciousness following reversible stunning systems	Prior non-reversible stunning	Poultry only	
Other methods without stunning	Decapitation with a sharp knife	Pain due to loss of consciousness not being immediate		Sheep, goats, poultry	This method is only applicable to Jhatka (slaughter by decapitation according to the Sikh religion)
	Manual neck dislocation and decapitation	Pain due to loss of consciousness not being immediate; difficult to achieve in large birds	Neck dislocation should be performed in one stretch to sever the spinal cord	Poultry only	
Cardiac arrest in a waterbath electric stunner	Bleeding by evisceration	Failure to induce cardiac arrest	Induction of cardiac arrest by adequate current	Quail	
	Bleeding by neck cutting	Failure to induce cardiac arrest	Induction of cardiac arrest by adequate current	Poultry	

The use of the electrical stunning method with a single current applied leg to leg is ineffective and unacceptable in any species. The electrocution in this way is likely to be painful. The animal welfare concerns are:

- accidental pre-stun electric shocks
- inadequate current and voltage
- incorrect electrode positioning
- recovery of consciousness.

Slaughtering animals by piercing the eye socket or skull bone in order to sever the brain stem is not acceptable in any species covered in this document.

Conclusions

The slaughter of animals for human consumption has been practised since the beginning of food-animal domestication during prehistoric times. Killing animals, the most brutal act in the relationship between human beings and domestic animals, is an inevitable stage in the food production cycle. In view of the increasingly prevailing ethical attitude of society, and its recognition that animals are capable of suffering, it has become necessary to minimise animal suffering during all stages of life. The *Ad hoc* Group approached its work by assessing the animal welfare concerns associated with every procedure during the commercial pre-slaughter and slaughter processes, reviewing them on the basis of the available scientific data, independent of any religious or cultural context, and recognising the necessity to avoid stress during each of the stages preceding the death of an animal. These stages include the unloading, lairaging, moving, restraining, stunning and bleeding. The *Ad hoc* Group considered the specific issues associated with commercial slaughter without stunning, acknowledging the significance of religious requirements and the ritual, cultural and ethnic factors associated with some forms of commercial slaughter. It was felt that these should not be treated as exempt from the proposed guidelines, which are intended to provide a framework within which variations to certain steps in the process may be practised to improve

animal welfare or at least not to compromise it. This objective could be achieved by training employees, modifying the way in which restrainers and stunners are used, eliminating distractions which make the animals stressed, and ensuring that appropriate knives and precise cutting methods are used.

The meat industry and other related animal industries need to continuously strive to improve their methods and systems by using the available know-how and technology. These OIE guidelines should be helpful in achieving desirable animal welfare goals within the commercial slaughter processes. These guidelines are regarded as voluntary, and not meant to be mandatory standards. However, it is expected that OIE Member Countries will incorporate these guidelines into their standards, enact relevant regulations, and implement the guidelines. Relevant authorities in Member Countries are also expected to communicate and consult effectively with stakeholders in their countries, paying particular attention, where applicable, to religious, cultural and ethnic requirements. The guidelines will enable Member Countries to review and consider updating their respective national animal slaughter regulations. The final animal welfare outcome depends upon the commitment of all stakeholders involved, including producers, marketers, technicians and animal handlers, guided, advised and supervised by regulators, veterinarians and other related expert professionals.

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The authors' co-members in the *Ad hoc* Group, Temple Grandin, Neville Gregory, David Mellor and Mohan Raj, have actively participated in the preparation of this paper and their contribution is warmly acknowledged.

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Abattage des animaux destinés à la consommation humaine

A. Shimshony & M.M. Chaudry

Résumé

Le présent article retrace brièvement la création du Groupe ad hoc de l'OIE (Organisation mondiale de la santé animale) sur l'abattage des animaux dans des conditions décentes, donne un aperçu de ses premières discussions et fournit des précisions sur ses recommandations. Ces dernières ont été approuvées lors de la 73^e Session générale du Comité international de l'OIE et ont été intégrées dans la dernière (2005) édition du *Code sanitaire pour les animaux terrestres*. Les recommandations incorporent certains changements apportés aux définitions actuelles de différents termes et les lignes directrices relatives à l'abattage à l'échelle industrielle des animaux destinés à la consommation humaine, en vue de réduire le plus possible la douleur et la souffrance susceptibles d'être évitées à chaque étape du processus avant et pendant l'abattage. Les principales questions traitées par le Groupe ad hoc étaient les suivantes : principes généraux applicables à l'abattage, en rapport avec le personnel, le comportement des animaux et l'élimination des sources de distractions pouvant amener les animaux à s'arrêter ou à revenir sur leurs pas ; déplacement et manipulation des animaux après leur arrivée à l'abattoir ; conception et construction des locaux de stabulation ; traitement des animaux dans les locaux de stabulation ; enfin, questions de bien-être animal associées au caractère acceptable des méthodes de manipulation, d'étourdissement et d'abattage appliquées pour les différentes espèces. Le Groupe a reconnu l'importance des exigences rituelles ainsi que les facteurs culturels et ethniques associés à l'abattage et des propositions appropriées ont été incluses dans leur rapport final. Des questions importantes mais moins fréquentes, telles que le sort réservé aux fœtus pendant l'abattage d'animaux en gestation ont également été intégrées dans ces travaux. Enfin, le rapport final du Groupe ad hoc a également fait état des méthodes, procédures et pratiques qui sont inacceptable pour des raisons liées au bien-être animal.

Mots-clés

Abattage – Abattage dans des conditions décentes – Abattoir – Bien-être – Contention – Étourdissement – Fœtus – Pré-abattage – Rituel – Traitement.



Sacrificio de animales para el consumo humano

A. Shimshony & M.M. Chaudry

Resumen

Tras describir sucintamente la formación del Grupo *ad hoc* de la OIE (Organización Mundial de Sanidad Animal) sobre el "Sacrificio de los animales en condiciones decentes", los autores resumen las primeras discusiones que mantuvo ese grupo y exponen con cierto detalle sus recomendaciones, que el Comité Internacional de la OIE aprobó en su 73ª Sesión General y han sido incluidas en la última (2005) edición del *Código Sanitario para los Animales Terrestres*. Entre las recomendaciones figuran la de modificar la definición vigente de una serie de términos, así como directrices relativas al sacrificio comercial de animales para el consumo humano, pensadas para reducir al mínimo todo dolor y sufrimiento evitables durante el proceso de sacrificio o en sus etapas previas. Los principales temas tratados por el Grupo *ad hoc* fueron: principios generales del sacrificio, relativos al personal, el comportamiento de los animales y la eliminación de elementos que puedan distraer al animal y hacer que se detenga o revuelva; desplazamiento y manipulación de los animales tras su llegada al matadero; diseño y construcción de locales de estabulación; cuidado de los animales en esos locales; y cuestiones de bienestar animal relacionadas con métodos aceptables de manipulación, sujeción, aturdimiento y sacrificio que puedan aplicarse a varias especies útiles. El Grupo reconoció la importancia de los imperativos religiosos y de los factores culturales y étnicos ligados al sacrificio, por lo que en su informe final incluyó las oportunas propuestas al respecto. En ese informe se examinan también otras cuestiones de relevancia, aunque se planteen más rara vez, como la manipulación de los fetos al sacrificar hembras grávidas. Por último, en el informe final también se indican los métodos, procedimientos y usos que resultan inaceptables por sus consecuencias para el bienestar de los animales.

Palabras clave

Aturdimiento – Bienestar – Feto – Matadero – Proceso previo al sacrificio – Religioso – Sacrificio – Sacrificio en condiciones decentes – Sujeción – Tratamiento.



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