6 Deliverable 4(3): Elements of best practices – Slaughter without stunning prescribed by religious rites

This section provides text for Deliverable 4 – Elements of best practices.

Elements of best practices are not of legally binding nature and do not affect the requirements of the EU legislation on protection of animals at the time of killing or other relevant pieces of legislation. Nor do they commit the European Commission. Only the Court of Justice of the European Union is competent to authoritatively interpret Union law. The reader is therefore invited to consult this section in connection with the relevant provisions of the legislation and refer, when necessary, to the relevant competent authorities.

Furthermore, this section does not preclude any religious requirement that may or may not allow some of the practices presented below. The reader is invited to verify with the religious representatives concerned if a practice is allowed according to their rites.

Similarly, this section does not preclude any possible stricter national rules that may forbid or restrict some of the practices presented below. The reader is invited to verify with the competent authorities concerned if a practice is permitted under national rules which may be adopted regarding slaughter without stunning under Article 26 (2) (c) of Regulation (EC) No 1099/2009.

6.1 Introduction

The welfare of animals is recognised as an important issue by the European Union and the Member States. Animals should not experience avoidable pain, stress, or suffering. The welfare of animals should be ensured at all times, but especially at the time of killing. There, the protection of animals is not only important as such. It contributes also to the quality of the meat and to the safety of all who work in slaughterhouses. When animals experience minimum stress, the quality of the meat is enhanced. There is also a better and safer relationship between animals and men. In 2009, the European Union has adopted Regulation (EC) No 1099/2009 on the protection of animals at the time of killing. The Regulation aims to achieve good standards of animal protection at the time of killing and in all related operations. The Regulation lists a number of principles and rules that business operators need to understand and apply. In recent years, audits in the EU have found some slaughterhouse practices that are in breach of the Regulation. These findings in particular indicate that business operators could be better informed of good practices of slaughter without stunning prescribed by religious rites. This document means to address this objective. It provides elements for best practice. It has been produced as part of a project funded by the European Commission.

The European Union is required to respect the legislative or administrative provisions and customs of the Member States relating to religious rites, cultural traditions and regional heritage when formulating and implementing the Community’s policies on, inter alia, agriculture and the internal market. Regulation (EC) No 1099/2009 takes this into account and makes provisions for particular methods of slaughter without stunning prescribed by religious rites. In any case, all operations of slaughter without stunning prescribed by religious rites must take place in a slaughterhouse.

What information does this document provide?

The document covers specific topics of slaughter without stunning, using methods prescribed by religious rites, where the European Commission has identified the need for good practice guidance.
In the context of the EU legislation, slaughter without stunning prescribed by religious rites are defined in Article 4(4) of the Regulation and allows either direct bleeding or the use of non-authorised methods of stunning. Beyond certain common provisions, Member States are responsible for defining the modalities of how slaughter without stunning should be allowed and performed. These modalities may include particular conditions related to the religious or the technical aspects of slaughter.

Following Article 26 (2) (c) of the Regulation, Member States may also adopt stricter rules to ensure more extensive protection of the animals (for example they may require post-cut stunning).

For each of the topics identified above, the document discusses what the Regulation requires. It then presents good practices on how to comply with the requirements from the Regulation. It also presents good practices on how to assess compliance (verify that one is indeed compliant) with the requirements from the Regulation. The latter is presented in the form of a “control procedure”. The good practices listed in the documents correspond to actual practices performed under commercial conditions (including national or sectoral good practices and voluntary standards). When applicable the document presents the advantages and disadvantages of the good practice.

In this document,

- **UNACCEPTABLE** practices are forbidden by law.

- **ACCEPTABLE** practices are authorised or required by law and provide limited animal protection.

- **GOOD** practices are authorised or required by law and provide good animal protection.

- **BEST** practices are authorised or required by law and (a) provide enhanced animal protection, or (b) they provide other benefits (for instance: they are more practical, or more cost-effective).

How is this document structured?

This document is structured by species (cattle, sheep and poultry) with for each of them different sections into the chronological order of the different possible procedures (restraining, non-authorised methods of stunning, bleeding and post-cut stunning (for cattle only)).

6.2 Basic rules applicable to all species

Regulation (EC) Nº 1099/2009 contains a series of general requirements that apply to all methods of slaughter as well as specific provisions related to slaughter without stunning.

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37 Some methods of stunning are not authorised by the EU legislation due to insufficient scientific evidence demonstrating that they can provide a reliable and efficient stunning under commercial conditions. Their use may be however envisaged when prescribed or accepted by religious rites as an alternative to direct bleeding. These practices remain considered as slaughter without stunning and therefore subject to all specific requirements related to such methods of slaughter.
As regards the general requirements applicable to all slaughter methods, it is worth emphasizing here the importance of the need for certificate of competence as well as the Standard Operating Procedures. Business operators must ensure that slaughter operations are carried out by persons holding a certificate of competence. The Competent Authority of the Member State must be contacted in order to obtain a certificate for the relevant persons. This involves attending a training course. This certificate differs from the religious recognition which might be also required in some Member States to perform such method of slaughter.

The Regulation requires that business operators establish Standard Operating Procedures (SOPs) of the particular methods of slaughter without stunning prescribed by religious rites. While writing the SOPs, the business operator should consider ways of reducing the pain and stress of the animals. SOPs should be written up and displayed in a place where the business operator and others (workers, public authorities) can see them. The business operator should make SOPs available to the Competent Authority.

As regards specific requirements only applicable to slaughter without stunning prescribed by religious rites, it is important to underline the following obligations for business operators:

- slaughter without stunning is only carried out in a slaughterhouse (article 4.4 of the Regulation),
- systematic checks are carried out to ensure that animals do not present any sign of consciousness or sensitivity before being released from restraint and do not present any sign of life before undergoing dressing or scalding, (Article 5+16)
- ruminants must be individually mechanically restrained before bleeding (Article 14.2)
- systems restraining bovine animals by inversion or any unnatural position shall respect a number of technical conditions (Article 14.2 see below)

6.3 Cattle

6.3.1 Mechanical restraining methods

For the use of slaughter methods without stunning prescribed by religious rites, each animal must be individually restrained before cutting the throat (Article 15.2 of the Regulation). Restraining the animal enables to cut its throat rapidly and precisely. As a result, the animal will bleed and die more quickly. In case the animal is stunned before or after cutting its throat, restraining facilitates stunning as well. A poorly restrained animal could struggle. Cutting and bleeding will be difficult. It could also be more painful for the animal, and could be dangerous for the slaughtermen.

Some restraining methods are allowed by the Regulation while others are explicitly forbidden. A conscious animal should not be restrained under any circumstance by: suspending or hoisting it; clamping or tying its legs or feet; severing its spinal cord; immobilising it with an electric current. These practices are unacceptable and forbidden.

The Regulation requires that cattle, sheep and goats shall be mechanically restrained. Mechanical restraining systems include: Standing systems – The animal is restrained in a standing position; Rotating systems – The animal is restrained by rotating until it is tilted sideways or lies on its back.

All standing and rotating systems for bovines should restrict lateral and vertical movement of the head and be adjustable to the size of the animal. All mechanical restraint methods cause stress. The level of stress varies as a result of a number of
factors: the state of the animal, the breed, previous mixing with other animals and any fighting that might have ensued, and also handling immediately prior to entering. Therefore, efforts and measures are essential to reduce stress caused by mechanical restraint systems. Mechanical restraining systems should also cause no injury and minimum discomfort. Because restraining causes stress, the Regulation requires that restraint starts **only after verification** that the cut can be performed **without any delay**. The following methods are used under commercial conditions in the European Union.

### 6.3.1.1 Standing system – individual box

Refer to text and pictures at 5.3.1.6.5

**Advantages**

- The animal cannot move forward or backward.
- The head is stabilised for neck cut.
- Operators are protected from the animal’s movements.
- The animal cannot fall.
- The animal is in a natural, standing position for slaughter.
- Carotid ballooning/welling on cut arteries can occur. It can be more easily resolved if the animal is in a standing position.
- Standing systems are cheaper than rotating systems

**Disadvantages**

- The box requires some handling of the animal.
- Cutting in this position requires more skilled slaughterman.
- The box can only be used for low speed slaughter.

This restraining system constitutes **acceptable practice**.

### 6.3.1.2 Rotating pens

A rotating pen may be used to restrain the animal. Rotating pens allow moving the animal on its side (up to 90° rotating pens), or on its back (180° rotating pens) before cutting. **Rotating pens that turn the animal upside down (180°) may be forbidden due to stricter national rules.**

The animal is loaded into the pen in the same way as for a standing individual box (above). Pens should have adjustable side panels and backrest to ensure full support to the animal during rotation; and to prevent the animal from slipping, twisting, or falling during inversion. The animal’s head must be restrained before rotating. The neck can be immobilised with a **neck-yoke** or **head-yoke**. The head can be lifted with a **chin-lift**. The chin lift can be raised manually, electrically, or using chains until **the side of the head is lateral to the floor**. The chin-lift supports the head. It stretches also the neck for the cutting. The head restraint should not obscure the front of the head and allow good access to the eyes. This enables verification of consciousness after the neck has been cut.

Rotation should be smooth and any sudden movements or unnecessary interruptions should be avoided. It should take **no longer than 30 seconds** to fully rotate the animal. The pen should be easily evacuated in case of stoppage of emergency.
Advantages

- Rotating pens can facilitate cutting through better exposure of the neck.
- Innovative versions of rotating pens enable restraining of two animals at a time, thus speeding up the slaughtering process.
- The animal cannot move forward or backward.
- The head is stabilised for neck cut.
- Operators are protected from the animal’s movements.
- The animal cannot fall.

Disadvantages

- Rotating systems affect the comfort of animals, as they are restrained in an unnatural position. The discomfort is greater if the animal is rotated upside down (180°) than laterally (90°).
- Rotating systems are more expensive to purchase than standing systems.
- Rotating pens with double restraining devices are best suited to large abattoirs with a high output of slaughtered animals per year.
- Carotid balloonising/welling on cut arteries can occur. It is difficult to prevent and to resolve if the animal is not standing.
- Some of these devices do not turn fast enough. As a result the time from restraint to cutting can be excessive.

This restraining method constitutes **acceptable practice** in most European Union Member States.

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6.3.1.3 Standing system – Conveyor belt

Refer to text and figures at 5.3.1.6.4

The conveyor should be stopped at the time of bleeding.

Advantages

- Animals are more comfortable in conveyor belt restrainers than in static restrainers.
- Conveyor belt systems require little handling of the animals. They are safer for workers than boxes or rotating pens.
- Conveyor belt systems require only short restraint until neck cutting.
- Small animals can be loaded as a group into a conveyor system. This is less stressful for the animal than individual loading.
- The animal cannot move forward or backward.
- The head is stabilised for neck cut.
- Operators are protected from the animal’s movements.
- Carotid ballooning/wellng on cut arteries can occur. It can be more easily resolved if the animal is in a standing position.

Disadvantages

- Small animals could risk injuries from falling through or crossing their legs in a V-shaped system.
- Cutting in this position requires more skilled slaughterman.
- There is a cost to the purchase and maintenance of conveyor belts that is higher than for static systems.

This restraining system constitutes good practice.

Control procedure: See Annex Table A2.2.1.1

6.3.2 Use of non-authorised methods of stunning – non-penetrative captive bolt

Provided that the method is allowed by the religious representatives concerned, stunning of cattle can be done with a non-penetrative captive bolt device, or non-penetrative "stunner". It strikes the forehead of the animal with great force without penetrating the skull. Maintenance, handling, and keeping of equipment is fundamental to successful use.

Since the method is not authorised under EU rules, it should always be used in the context of slaughter without stunning prescribed by religious rites. The obligation of systematic checks as well as possible additional national provisions apply.

6.3.2.1 Parameters

The charge or air pressure should be appropriate for the animals to be stunned. The stunner’s manufacturer instructions contain the necessary information and should be followed.
6.3.2.2 Positioning

When using this method, the head should be restrained. The target of the stunner is on the forehead of the animal. Imagining two lines going from the middle of each horn / horn bud to the top of the opposite eye, the target is the intersection point between the two lines, aiming the stunner at right angles. The stunner should be aimed with the line of the spinal column in the neck.

*Figure 41. Position of a non-penetrative captive bolt stunning on cattle*

Advantages

- The stunner’s impact causes concussion, and should make the animal immediately unconscious.
- It is faster than direct bleeding since animals can be released immediately after the procedure.
- This enables a higher slaughter speed.
- This makes the slaughtering process safer for the operators

Disadvantages

- It does not always induce unconsciousness immediately, especially if used on heavy cattle.
- It is likely to break the skull of the animal. If not rendered unconscious, the animal will suffer.
- There is a cost for the purchase of the stunner.
- The stunner requires regular maintenance
- A back-up system should be available, should the stunner fail.

This stunning method constitutes acceptable practice.

Control procedure: See Annex Table A2.2.1.2

6.3.3 Bleeding operations

The animal should be cut to start bleeding as soon as possible. Existing guides to good practice recommend that the cut is performed: within 30 seconds of starting restraining the animal; within 10 seconds of having restrained the head; within 10 seconds after tipping the rotating box. The animal is likely to struggle and vocalize in case of delays. If the animal was stunned (by a non-authorised method, for example non-penetrative captive bolt or electrical stunning), it should be cut immediately after
signs of unconsciousness have been verified. It is important to achieve: a good cut severing both carotid arteries completely; rapid and maximum blood loss; rapid onset of loss of consciousness (if the animal was not stunned beforehand).

6.3.3.1 Knife

The knife should be long enough, and at least twice the width of the neck (alternatively, at least 30cm). The knife should be straight and sharp. Otherwise, cutting risks closing the arteries rather than opening them. The animal would not lose blood as rapidly as it should. Death would be delayed. A second knife and sharpening equipment should be available at all times. The slaughterer should be trained to using the sharpening equipment.

6.3.3.2 Head restraining and support

The neck of the animals should be extended for cutting. The restraint on the neck and the chin should be released partly immediately after the cut. This will facilitate bleeding. It is recommended to continue supporting the head when bleeding. This will facilitate the bleeding by keeping the wound open. The animal could lose consciousness more quickly.

6.3.3.3 Performing the cut

The cut should be performed by appropriately trained, skillful operators. The neck should be cut deeply under the jaw bone. Both carotid arteries and both jugular arteries should be cut. However, the neck bones should not be touched, and the neck should not be broken. The cut should be swift and in one continuous back and forth movement, without interruptions. If the cut is not accurate, the animal will take longer to lose consciousness.

*Figure 42. Recommended cut location and inclination in cattle*  

![Diagram of recommended cut location and inclination in cattle](image-url)

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Existing good practice guides provide recommendations on the location and inclination of the cut. In Figure 42, cut 1 corresponds to a correct location and inclination of the cut. Positions 2 and 3 correspond respectively to a correct location but wrong inclination, and an incorrect location and incorrect inclination.

6.3.3.4 Monitoring the blood flow

The wound should not be interfered with until the animal has lost consciousness. It should not be touched or scraped. It should not be contaminated with stomach content either. There should be no further cuts after the initial single incision. The blood flow should be monitored for restrictions. Sometimes, blood clots form and reduce the flow of bleeding, generally within 5 to 15 seconds after cutting the throat. If that is the case, the animal should be stunned with a back-up stunning method (penetrative captive bolt, electrical stunning).

6.3.3.5 Monitoring signs of unconsciousness

The absence of signs of consciousness must be monitored systematically after cutting the animal’s neck, during bleeding and while the animal is restrained, before releasing the animal from restraint and before dressing or scalding. A good cut should lead to loss of consciousness within 10-15 seconds.

Signs of unconsciousness are: 1. collapse of the animal (of the behind if restrained in a standing position); 2. no attempt to right itself or its head (if the animal has been restrained in a standing position); 3. no regular breathing; 4. eyes have a fixed, glazed expression, eyes do not follow movements around, they do not blink, there is no response to finger touching the eye – this occurs within 1 to 2 minutes after cutting in cattle; 5. no response to threatening movements (e.g. rushing the hand towards the eyes leading to eyes closing or head moving backwards) – this indicator is not reliable when the animal is in a reversed position in a rotating pen; 6. no response to noise – ears do not move if clapping hands 5 cm from the ear; 7. tongue hanging out of the mouth; 8. uncoordinated leg movements (pedalling).

There should be no signs of consciousness before the animal can be removed from the holding system. It is recommended to wait at least 45 seconds, and up to 90 seconds, before releasing the animal from restraining. A timer can be used to remove the animal from the restraining system after cutting (this can be incorporated to the restraining system).

Sometimes, animals take too long to lose consciousness. In case of prolonged consciousness, the animal should be stunned with a suitable method. A workable back-up solution for stunning is required (penetrative captive bolt, electrical stunning). Existing good practices on this issue vary widely from one Member State to another. Stunning is practiced if the animal is showing signs of consciousness or sensibility after 45 seconds in some, and up to after 150 seconds in others. Cutting an animal’s neck causes pain and distress. Therefore, to stun after a delay of loss of consciousness after 45 seconds may be acceptable practice (150 seconds in one Member State) but any longer would be unacceptable practice.

Causes of prolonged consciousness (e.g. problems with restraining, slaughterer skill) should be investigated and resolved.

Signs of death are: no signs of heartbeat after bleeding has stopped; no breathing; enlarged pupil with no response to light; all muscles relaxed, no movements of the legs. The absence of signs of life must be verified before the slaughter process (dressing) can continue.

Control procedure: See Annex Table A.2.1.3

6.3.4 Post-cut stunning

The duration of the pain provoked by the neck cut can be reduced if stunning is performed immediately after the cut (post-cut stunning). Some stricter national rules
may require post-cut stunning. Post-cut stunning should be applied within 5 seconds of cutting the neck. Post-cut stunning can be carried out with a non-penetrative captive bolt.

Refer to text and figures at 6.3.2.

6.4 Sheep and Goats

6.4.1 Restraining – Mechanical restraining systems

Refer to text at 6.3.1.

6.4.1.1 Conveyor systems

Refer to text at 5.3.1.6.4 and to figures at 5.5.1.6.2.

The conveyor should be stopped at the time of bleeding.

Advantages

• Animals are more comfortable in conveyor belt restrainers than in static restrainers.
• Sheep appear to be comfortable in V-restraining conveyors if placed together.
• Conveyor belt systems require little handling of the animals. They are safer for workers than boxes or rotating pens.
• Conveyor belt systems require only short restraint until neck cutting.
• Animals can be loaded as a group into a conveyor system. This is less stressful for the animal than individual loading.
• The animal cannot move forward or backward.
• Operators are protected from the animal’s movements.

Disadvantages

• Small animals could risk injuries from falling through or crossing their legs in a V-shaped system.
• If sheep are separated from their flock-mates, isolation can cause stress.
• Slaughter operation can be slowed down affecting throughput.
• Conveyor systems are costly to purchase and maintain.

This restraining system constitutes good practice.

6.4.1.2 Restraining chute

A chute can be used to restrain the animal before it is killed. The animal shall be directed to enter the chute on its own. Alternatively, it can be lead to enter the chute, using a halter. Once in the chute, the animal is lifted by operating a lever. Its belly is supported as in a central track conveyor. Solid walls on each side limit the animal’s view.

Advantages

• The animal cannot move forward or backward.
• The operator is protected from the animal’s movements.
• The animal cannot fall.
• The cost is low.
Disadvantages

- This requires some handling and manual restraining of the animal.
- This can only be used for low speed slaughter.

This restraining system constitutes good practice.

64.1.3 Cradle or V restraint

A cradle is a simple device designed to support the body of the animal underneath and from the sides while providing access to the head and neck. Each animal is lifted and placed on their side in a cradle. The neck of the animal can then be stretched manually so that the slaughterman can perform the cut.

A V-restraint applies the same principle as a cradle, however the animal is in an upright position. Contrary to a V-shape conveyor, a V restraint is static, not moving.

Advantages

- Individual placement can insure correct positioning and extension of neck for slaughter
- The cost is low

Disadvantages

- Restrain with cradles can be stressful for sheep, who prefer to be in a group with other sheep. The sheep may struggle
- It is slower than conveyor system.
- There is a risk of carcass damage especially if grabbing fleece causing wool pull.

This restraining system constitutes good practice.

64.1.4 Individual box

Refer to text and picture at 5.3.1.6.5.

Advantages

- The animal cannot move forward or backward.
- The head is stabilised for neck cut.
- Operators are protected from the animal’s movements.
- The animal cannot fall.
- The animal is in a natural, standing position for slaughter.
- Standing systems are cheaper than rotating systems

Disadvantages

- The box requires some handling of the animal.
- The box can only be used for low speed slaughter.

This restraining system constitutes good practice.
Control procedure: See Annex Table A2.2.2.1

6.4.2 Bleeding operations

The animal should be cut to start bleeding as soon as possible. Existing guides to good practice recommend maximum time limits until the cut is performed: within 30 seconds of starting restraining the animal, and within 10 seconds of having restrained the head. The animal is likely to struggle and vocalize in case of delays. If the animal was stunned, it should be cut immediately after signs of unconsciousness have been verified. It is important to achieve: a good cut severing both carotid arteries completely; rapid and maximum blood loss; rapid onset of loss of consciousness (if the animal was not stunned beforehand).

6.4.2.1 Knife

The knife should be long enough, and at least twice the width of the neck. The knife should be straight and sharp. Otherwise, cutting risks closing the arteries rather than opening them. The animal would not lose blood as rapidly as it should. Death would be delayed. A second knife and sharpening equipment should be available at all times. The slaughterer needs to be trained to using the sharpening equipment.

6.4.2.2 Head restraining and support

Hold the head with both hands: one hand rests on the top of the head, while the other is placed under the mouth, stretching the neck. One person should restrain the head while the other carries out the cutting. Alternatively one operator carries out both operations.

The neck of the animals can be stretched manually at the moment of cutting. One can continue to support the head after the cut to facilitate the bleeding. The animal could lose consciousness more quickly. The head restraint should be maintained until the animal shows the first signs of loss of consciousness (loss of posture of the head).

6.4.2.3 Performing the cut

The neck should be cut deeply under the jaw bone. Both carotid arteries and both jugular arteries should be cut. However, the neck bones should not be touched, and the neck should not be broken. The cut should be swift and in one continuous movement, without interruptions. If the cut is not accurate, the animal will take longer to lose consciousness.
Existing good practice guides provide recommendations on the location and inclination of the cut. In Figure 42, cut 1 corresponds to a correct location and inclination of the cut. Positions 2 and 3 correspond respectively to a correct location but wrong inclination, and an incorrect location and incorrect inclination.

6.4.2.4 Monitoring the blood flow

The wound should not be interfered with until the animal has lost consciousness. It should not be touched or scraped. If any contamination by stomach content occurs, it must be cut or carefully cleaned after the death of the animal. There should be no further cuts after the initial single incision. If bleeding is not effective the animal should be stunned with a back-up stunning method (penetrative captive bolt, electrical stunning).

6.4.2.5 Monitoring signs of unconsciousness

The absence of signs of consciousness should be monitored systematically after cutting the animal’s neck, during bleeding and while the animal is restrained, and after releasing the animal from restraint. A good cut should lead to loss of consciousness within 10-15 seconds.

Signs of unconsciousness are: 1. no attempt to right itself or its head (if the animal has been restrained in a standing position); 2. no regular breathing; eyes have a fixed, glazed expression eyes do not follow movements around, they do not blink, and there is no response to finger touching the eye – this occurs within 20-30 seconds; 3. no vocalisation; 4. no response to threatening movements (e.g. rushing the hand towards the eyes leading to eyes closing or head moving backwards); 5. tongue hanging out of the mouth; 6. uncoordinated leg movements (pedalling); 7. relaxed tail.

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There should be no signs of consciousness before the animal can be removed from the holding system. Sometimes, animals take too long to lose consciousness. **In case of prolonged consciousness, the animal should be stunned with a suitable method.** A workable back-up solution for stunning is required (penetrative captive bolt, electrical stunning).

Existing good practices on this issue vary widely from one Member State to another. Stunning is practiced if the animal is showing signs of consciousness or sensibility **after 30 seconds** in some, and up to **after 45 seconds** in others. **Signs of death** are: no signs of heartbeat after bleeding has stopped; no breathing; enlarged pupils with no response to light; all muscles relaxed, no movements of the legs. The absence of signs of life should be verified before the slaughtering (dressing) can continue.

**Control procedure:** See Annex Table A2.2.2.2

### 6.5 Poultry

#### 6.5.1 Electrical waterbath

Electrical waterbath stunning is an authorised method of stunning if all EU requirements are applied. In this case, the reader should refer to section 5.6.4.2.

Provided that the method is allowed by the religious representatives concerned, the use of electrical waterbath may be used with lower electrical parameters than the requirements of the EU legislation.

**In this case the method must be considered as slaughter without stunning** and therefore submitted to the corresponding EU and, if any, national obligations.

Birds are first hung by their legs to a moving shackle. Then, their heads are passed through electrified water. The flow of current should make the birds unconscious. The birds should remain unconscious until bleeding is finished.

##### 6.5.1.1 Design principles

Refer to section 5.6.4.2.1

##### 6.5.1.2 Shackling

Refer to Section 5.6.4.2.2

##### 6.5.1.3 Electrical parameters

When electrical parameters are not compliant with the EU requirements, they should at least aim at ensuring that the highest proportion of birds are rendered unconscious, keeping in mind that they present a higher risk of not providing a reliable and complete stun to all animals.

The main electrical parameters to obtain an effective stunning are current (measured in amperes: A) and frequency (measured in hertz: Hz). In addition a number of other factors influence the stunning effect, such as time from the birds leave the stunner and until bleeding, conductivity of the water, uniform size of the birds.

Business operators should aim at using electrical parameters as much as possible close to the figures required by the EU legislation (see section 5.6.4.2.3) while respecting religious requirements. In adjusting electrical parameters they should focus on the outcomes on the animals with a strict monitoring so that no or as few as possible animals show sign of consciousness until the end of bleeding.

##### 6.5.14 Operating the waterbath

Refer to text at 5.6.4.2.4

##### 6.5.15 Monitoring the waterbath

Refer to text at 5.6.4.2.5.

This stunning method constitutes acceptable practice.
Automated systems for head-only stunning have recently been developed which could constitute an alternative to waterbath, provided that the method is allowed by the religious representatives concerned. Refer to text at section 5.6.4.1.2.

**Control procedure:** See Annex Table A2.2.3.1

### 6.5.2 Manual bleeding operations

Once restrained, the bird should be cut as soon as possible. If stunned, bleeding should start immediately after having verified unconsciousness. Only few sources set a maximum stun-to-stick interval, at 7 seconds and 20 seconds of stunning the bird. The speed of the slaughter line should enable slaughterers to perform a good cut; it should take account of the number of slaughterers working on the line. It is important to achieve: a good cut severing both carotid arteries and jugular arteries completely; rapid and maximum blood loss; and rapid onset of loss of consciousness (if the bird was not stunned beforehand).

#### 6.5.2.1 Knife

The knife should be long enough, and at least twice the width of the neck. The knife should be straight and sharp. A second knife and sharpening equipment should be available at all times.

#### 6.5.2.2 Performing the cut

The cut must be accurate, or else the bird would take longer to lose consciousness and die. Both carotid arteries and both jugular arteries should be cut. In chickens, carotid arteries are on the surface of the neck muscle, near the head. In turkeys, the arteries are hidden below the muscle: the muscle should be cut as well to ensure reaching the arteries. The neck should be cut with uninterrupted movements. Cut deep into the muscle, across the front and both sides of the throat.

*Figure 44. Diagram of recommended cut location for poultry*

#### 6.5.2.3 Monitoring the blood flow

There should be no interference with the wound until the animal has lost consciousness. You may only do so to check the quality of the cut, if in doubt. Look out for restrictions in the blood flow. When held upside down, the blood flow from the arteries should form an upside-down V-shape for 5-10 seconds. If the blood flow is not appropriate, another cut might be needed to contribute to blood flow and speed up the

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loss of consciousness. Alternatively, the animal can be decapitated. Before further processing, birds should be allowed to bleed for at least 2 minutes for turkeys and 1½ minute for chickens.

6.5.2.4 Monitoring the absence of signs of consciousness and signs of life

The absence of signs of consciousness should be monitored systematically, and at least twice within 15 to 25 seconds after the cut.

**Signs of unconsciousness** are: 1. no regular breathing; 2. no wing flapping; 3. no spontaneous blinking; 4. no righting attempt; 5. neck is arched with head pointing down (for electrical waterbath only); 6. no blink reflex; and 7. no response to pinch or prick of its comb. There should be no signs of consciousness before the bird can be removed from the holding system (art 5.2 of the Regulation). Sometimes, birds take too long to lose consciousness. If the bird is still conscious after 30 seconds, it should be stunned immediately with an appropriate back-up method.

**Signs of death** are: 1. no spontaneous movements; 2. completely limp carcass; 3. wings detached from the body; 4. no discernible breathing; 5. bleeding has stopped. The absence of signs of life should be verified before the slaughtering can continue (Art. 5.2 of the Regulation).

**Control procedure**: See Annex Table A2.2.3.2.