Annex 24

CHAPTER 7.6.

ANIMAL WELFARE AT THE TIME OF KILLING

Article 7.6.1.

Introduction

Animals are killed for a variety of reasons, including for contagious disease control, in case of natural or man-made disasters, when they are otherwise suffering from disease or injuries or for economic reasons. It is important to consider their welfare during this process.

Article 7.6.2.

Scope

This chapter identifies hazards to animal welfare during *killing* and provides recommendations for the appropriate procedures for killing. It provides animal-based and other measures to assess the level of welfare during the process and recommends appropriate remedial actions to be applied.

This chapter applies to the killing of domestic and *captive wild* ruminants, equids, birds, pigs, rabbits, camelids and mustelids for all purposes, except for slaughter which is covered by Chapter 7.5. Animal welfare during slaughter.

This chapter should be read in conjunction with the guiding principles for *animal welfare* provided in Chapter 7.1.

Article 7.6.3.

General principles for the operations regarding the killing of animals

The decision as to whether to kill animals should not be delayed if there is any risk to the welfare of those animals. The recommendations in this Chapter are based on the premise that a decision to kill the animals has been made and they address the need to ensure the welfare of the animals until they are dead.

All personnel involved in the killing of animals should have the relevant skills and competencies.

As necessary, operational procedures should be adapted to the specific circumstances on the premises and should address, apart from animal welfare, the cost of the method, operators’ safety and mental health, biosecurity and environmental aspects.

During decision making and prior to killing the animals, normal husbandry, especially supply of feed and water, should be maintained until the animals are killed.

The handling and movement of animals should be minimised and carried out in accordance with the recommendations described below.

Animal restraint should be sufficient to facilitate effective killing, and in accordance with animal welfare and operator safety requirements. When restraint is required, killing should follow with minimal delay.

Killing methods used should result in immediate death or loss of consciousness lasting until death. When loss of consciousness is not immediate, induction of unconsciousness should involve as little aversion as possible and should not cause avoidable distress, fear and pain.

Young animals should be killed before older animals on which they are dependent to reduce potential distress.

For disease control purposes and for biosecurity considerations, infected animals should be killed first, followed by in-contact animals, and then remaining animals.

There should be continuous monitoring of the operational procedures to ensure they are consistently effective regarding animal welfare, operator safety and *biosecurity*.

When the operational procedures are concluded, there should be a written report describing the practices adopted and their effect on animal welfare, operator safety, *biosecurity and responsible personnel*.

Article 7.6.4.

Organisational structure for the operations regarding the mass killing of animals

Operational activities should be led by the *Competent authority* who has the authority to ensure the required *animal welfare* and *biosecurity* standards.

The Competent authority should nominate a responsible agent for all activities across one or more affected locations or premises who should be supported by coordinators for planning operations and logistics to facilitate efficient operations.

The responsible agent of the *Competent authority* should provide overall guidance to personnel and logistic support for operations at all affected locations or premises to ensure consistency in adherence to the *Terrestrial Code’s* *animal welfare* and animal health recommendations.

A specialist team, led by a team leader answerable to the responsible agent nominated by the *Competent Authority*, should be deployed to work on each affected location or premises. In some situations, personnel may be required to fulfil more than one function. Each team should contain a *veterinarian* or have access to veterinary advice at all times.

Emergency plans should be in place and contain details of responsibilities, management structure, disease control strategies, operational procedures and necessary equipment and resources. *Animal welfare* considerations should always be addressed in these emergency plans. The plans should include a strategy to ensure that an adequate number of personnel competent in the *killing* of animals is available.

Depopulation under disease control emergency plans should be performed under the supervision of *Competent Authority* and address any *animal welfare* issues that may result from standstill or any other animal movement restriction.

In considering the *animal welfare* issues associated with *killing* animals, the key personnel, their responsibilities, and competencies required are described in Article 7.6.5.

In other situations that do not necessarily involve the *Competent Authority*, the personnel responsible should follow the recommendations of this chapter.

Article 7.6.5.

Responsibilities and competencies of the specialist team for the operations regarding the mass killing of animals

1. Team leader
2. Responsibilities

(i) plan overall operations on affected location or premises;

(ii) determine and address requirements for *animal welfare*, operator safety and *biosecurity*;

(iii) organise and manage team of people to facilitate *killing* of the relevant animals on the location or premises in accordance with national regulations and these recommendations;

(iv) determine logistics required;

(v) monitor operations to ensure *animal welfare*, operator safety and *biosecurity* requirements are met;

(vi) report upwards on progress and problems;

(vii) provide a written report at the conclusion of the *killing* operation, describing the practices adopted and their effect on *animal welfare*, operator safety, efficacy of *biosecurity* and environmental impact.

1. Competencies
2. knowledge of relevant animal husbandry practices;
3. knowledge of *animal welfare* and the underpinning behavioural, anatomical and physiological processes involved in the *killing* operation;
4. skills to manage all activities on the location or premises and deliver outcomes on time;
5. awareness of psychological effects on farmer, team members and general public;
6. communication skills;
7. capacity to evaluate the environmental impacts caused by their operation.
8. Veterinarian
9. Responsibilities
10. determine and supervise the implementation of the most appropriate *killing* method to ensure that animals are killed without avoidable pain and distress;
11. determine and implement the additional requirements for *animal welfare*, including the order of *killing*;
12. ensure that confirmation of the *death* of the animals is carried out by competent persons at appropriate times after the *killing* procedure;
13. minimise the risk of disease spread within and from the location or premises through the supervision of *biosecurity*;
14. continuously monitor *animal welfare* and *biosecurity* during killing process;
15. collaborate with the team leader on the written report at the conclusion of the *killing*.
16. Competencies
17. ability to assess *animal welfare*, especially the effectiveness of *killing* and to correct any deficiencies;
18. ability to assess *biosecurity* risks.
19. Animal handlers
20. Responsibilities
21. review on-site facilities in terms of their appropriateness;
22. design temporary animal handling facilities, when required;
23. move and restrain animals;
24. report *animal welfare* and *biosecurity* issues to the *veterinarian*.
25. Competencies
26. animal handling in emergency situations and in close confinement is required;
27. understanding of *biosecurity*.
28. Personnel in charge of killing animals
29. Responsibilities
30. k*illing* of the animals using an appropriate method;.
31. confirm the death of the animals.
32. Competencies
33. safe use and maintenance of relevant equipment;
34. familiarity with the techniques of restraining and killing the species involved;
35. knowledge to assess effective *killing*.
36. Personnel in charge of disposal of dead animals
37. Responsibilities
38. An efficient dead animal disposal (to ensure *killing* operations are not hindered) should be ensured.
39. Competencies
40. The personnel should be competent to use and maintain available equipment and apply techniques for the species involved.
41. Breeder, owner, keeper or manager
42. Responsibilities
43. assist when requested.
44. Competencies
45. specific knowledge of his/her animals and their environment.

**Article 7.6.6.**

**Considerations in the planning of the operations regarding the mass killing of animals**

Many activities will need to be conducted on affected location or premises, including the *killing* of animals. The team leader should develop a plan for *killing* animals on the location or premises which should include consideration of:

1. minimising handling and movement of animals;
2. *killing* the animals on the affected location or premises; however, there may be circumstances where the animals may need to be moved to another location for *killing*; when the *killing* is conducted at a *slaughterhouse/abattoir*, the recommendations in Chapter 7.5. should be followed;
3. the species, number, age and size of animals to be killed, and the order of *killing* them;
4. methods of *killing* the animals, and their cost;
5. housing, husbandry, location of the animals as well as accessibility of the farm or the place they are situated;
6. the availability and effectiveness of equipment needed for *killing* of the animals, as well as the time necessary to kill the required number of animals using such methods;
7. the availability on the location or premises of facilities that will assist with the *killing*, and the necessity of any additional facilities;
8. potential *biosecurity* and environmental impact of the operations;
9. the health and safety of personnel conducting the *killing*;
10. any legal issues that may be involved, for example where restricted veterinary drugs may be used, or where the process may impact on the environment;
11. the presence of other nearby premises holding animals;
12. possibilities for removal and disposal of dead animals.

The plan should minimise the negative animal welfare impacts of the *killing* by taking into account the different phases of the procedures to be applied for *killing*.

Competences and skills of the personnel handling and *killing* animals should be included in the operational plan.

**Article 7.6.7.**

**Hazards to animal welfare**

For the purpose of this chapter, *hazards to animal welfare* means a factor with the potential to adversely affect *animal welfare*.

When killing animals, they may be exposed to different *animal welfare* hazards including improper restraining, rough handling, forced movement, absence of or improper design, inadequate construction and maintenance of premises, adverse weather conditions, unexpected loud noise and ineffective *killing* methods. Exposure to multiple hazards to a*nimal welfare* can have a negative cumulative effect on the animals [Moberg and Mench, 2000]. Hazards to animal welfare can be minimised mainly by appropriate design of premises and choice of equipment, and through good management, training and competency of personnel.

**Article 7.6.8.**

**Measures to assess animal welfare at the time of killing**

Hazards to animal welfare at the time of killing should be assessed using animal-based measures. However, consideration should be given to the resources provided as well as the design and management of the method.

These animal-based measures should be routinely used in the monitoring of the state of consciousness and death.

1. The following animal-based measures can be useful indicators of animal welfare. These measures can be considered as tools to monitor the efficiency of design and management, given that they can affect animal welfare.
2. Immediate collapse

Effective stunning can be recognised from the immediate loss of posture leading to collapse of the animal. Ineffectively stunned animals, on the other hand, will fail to collapse or will attempt to regain posture after collapse. Some ineffectively stunned animals, may occur, for example, if captive bolt shooting position is wrong or electrically immobilised animals lose posture, but remain conscious. The absence of immediate collapse is always indicative of consciousness.

1. Tonic–clonic seizures

Effective stunning often results in the presence of tonic–clonic seizures. Tonic seizures can be recognised by an arched back and rigidly flexed legs under the body and will last for several seconds. It is followed by clonic seizures lasting for seconds and manifested as leg kicking or paddling. The absence of tonic–clonic seizures may be indicative of consciousness [Van der Wal, 1971].

1. Righting reflex [Atkinson et al, 2013; Terlow et al, 2016]

Ineffectively stunned animals and those recovering consciousness will attempt to raise their heads or shake their heads after stunning, which is referred to as righting reflex.

1. Rhythmic breathing [Atkinson et al, 2013; Kamenik et al, 2019, Vecerek et al, 2020]

Effective stunning will result in immediate onset of apnoea (absence of breathing). Ineffectively stunned animals and those recovering consciousness will start to breathe in a pattern commonly referred to as rhythmic breathing, which may begin as gagging and lead to respiratory cycles of inspiration and expiration. Breathing can be recognised from the regular flank and/or mouth and nostril movements. Recovery of breathing, if not visible through these movements, can be checked by holding a small mirror in front of the nostrils or mouth to look for the appearance of condensation due to expiration of moist air.

1. Corneal reflex:

The corneal reflex is elicited by touching or tapping the cornea. Ineffectively stunned animals and those recovering consciousness will blink in response to the stimulus. Effectively stunned and stuck (bled) animals show the absence of the corneal reflex during any key stage. On the other hand, ineffectively or poorly stunned animals and those recovering consciousness prior to sticking or during bleeding are expected to show the presence of the corneal reflex at any key stage. It is worth noting that placement of electrical stunning tongs (electrodes) over the eyes of animals may render this indicator invalid.

1. Palpebral reflex

The palpebral reflex is elicited by touching or tapping a finger on the inner/outer eye can thus or eyelashes. Correctly stunned animals will not show a palpebral reflex. Ineffectively stunned animals and those recovering consciousness will blink in response to the stimulus at any key stage. It is worth noting that placement of electrical stunning tongs (electrodes) over the eyes of animals may render this indicator invalid.

1. Eye movement

Eye movements and the position of the eyeball can be recognised from close examination of eyes after stunning. Correctly stunned animals will show fixed eyes, and this can be recognised from wide open and glassy eyes with clearly visible iris/cornea in the middle. Eyeballs may be obscured in some animals owing to rotation into the eye socket following effective stunning. Ineffectively stunned animals and those recovering consciousness will show eye movements [EFSA AHAW Panel, 2013, Kamenik et al, 2019]

1. The following animal-based measures can be use as indicators of consciousness but are not sensible to indicate unconsciousness. Therefore, they can be use in addition to the previously mentioned animal-based measures:
2. Response to painful stimuli

Poor stunning can be recognised from the response to painful stimulus. The absence of response to a painful stimulus indicates unconsciousness following stunning. [Terlow et al, 2016. Kemenik et al, 2018]

1. Spontaneous blinking

Conscious animals may show spontaneous blinking and therefore this sign can be used to recognise ineffective stunning or recovery of consciousness after stunning. However, not all the conscious animals may show spontaneous blinking. Spontaneous blinking can be used as an indicator at all key stages of monitoring. It is worth noting that placement of electrical stunning tongs (electrodes) over the eyes of animals may render this indicator invalid. [Gregory et al, 2007; Terlouw et al, 2016, Kamenik et al, 2018]

1. Vocalisation

Vocalisation is expected only in conscious animals and can be used as an indicator in all key stages of monitoring. However, not all conscious animals will vocalise, and hence the absence of vocalisation does not always mean that the animal is unconscious. [Atkinson et al, 2013; Kamenik et al., 2018]

1. The following animal-based measures can be used as the confirmation of death before carcass disposal:
2. Muscle tone

Immediately after killing, dead animals will lose muscle tone, which can be recognized from the completely relaxed legs, floppy ears, and relaxed jaws.

1. Heartbeat

Onset of death leads to permanent loss of heartbeat, which can be ascertained physically by using a stethoscope or by palpation, where possible. [Vogel et al., 2011]

1. Dilated pupils

Dilated pupils (mydriasis) are an indication of death.

**Article 7.6.[…].**

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