

CHAPTER 7.14.

KILLING OF REPTILES FOR THEIR SKINS, MEAT AND OTHER PRODUCTS

Article 7.14.1.

Scope

The recommendations in this chapter address the need to ensure the welfare of chelonians, crocodylians, lacertilians and ophidians, during the process of *killing* them for their skins, *meat* and other products.

Article 7.14.2.

Definitions

Some of the definitions in this chapter differ from those in the Glossary and Chapter 7.5., as they are adapted to reptiles, given the specific characteristics of these animals.

For the purposes of this chapter:

Pithing: means a method carried out by inserting a rod or probe through the foramen magnum (or the hole from a penetrative captive bolt or gunshot), into the brain to ensure thorough brain destruction.

Restraint: means any acceptable physical or chemical method of reducing, or eliminating, voluntary or reactive movement of the reptile, to facilitate efficient stunning or *killing*.

Stunning: means the procedure that causes immediate loss of consciousness until the reptile is dead, or causes the absence of pain, distress and suffering until the onset of unconsciousness, according to the outcomes defined in this chapter for the species covered.

Unconsciousness: means the state of unawareness caused by temporary or permanent disruption of brain function.

Article 7.14.3.

General considerations

Because of the anatomy and physiology of reptiles, various factors should be considered when choosing the appropriate restraining, stunning and *killing* method. Such factors include the size of the reptile, tolerance and intolerance of certain species to particular methods, reptile handling, ease of access to veins and safety of the *animal handlers*.

1. Animal welfare plan

Facilities in which reptiles are killed should have an *animal welfare* plan and associated procedures. The purposes of such a plan should be to maintain good *animal welfare* at all stages of handling of reptiles until their *death*.

The *animal welfare* plan should contain standard operating procedures for each step of reptile handling to ensure that it is properly implemented, based on relevant recommendations in this chapter, including criteria in Article 7.14.6. It should also include corrective actions to address specific risks, for example, power failures or other circumstances that could negatively affect the welfare of reptiles.

2. Competency and training of the personnel

Animal handlers should be competent in handling and moving, stunning and verifying effective stun, and *killing* of reptiles, as well as in recognising species and understanding relevant behaviours of these animals and the underlying *animal welfare* and technical principles necessary to carry out their tasks.

There should be sufficient number of personnel, who should be trained, competent and familiar with the recommendations outlined in this chapter and their application within the national context.

The manager of the facility should ensure that personnel are competent and carry out their tasks in accordance with the guiding principles for *animal welfare* in Article 7.1.2.

The manager of the facility should ensure that personnel are physically and mentally able to carry out their tasks through the period of their work shift.

Competence may be gained through formal training or practical experience. This competence should be verified by the *Competent Authority* or an independent body accredited by it.

3. Considerations for handling, restraining, stunning and killing

Handling, restraining, stunning and *killing* methods should take into account the following characteristics of reptiles:

- sensitivity and responsiveness to visual, tactile, auditory, olfactory and vibrational stimuli;
- ability to escape handling and restraint because of their agility and strength;
- ability to inflict significant injuries to handlers, via bite wounds, wound infection, constriction, blunt trauma or envenomation;
- slow movements, torpor and reduced responsiveness due to low body temperatures or slow metabolic rates, which should not be regarded as indicators of quiescence or unconsciousness;
- absence of vocalisation, which is typical in reptiles, even in highly traumatic situations;
- propensity to regurgitate and choke when restrained inappropriately.

Article 7.14.4.

Source and transportation of reptiles

Reptiles should be acquired legally, in accordance with all national legislation, including those of the importation and exportation countries, and with international treaties, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Reptiles should be accompanied by relevant documentation related to their source.

When moving reptiles, capture and transport techniques should not compromise human and animal health, welfare and safety.

Article 7.14.5.

Selection of a killing process

In the case of reptiles, the *killing* process should involve either stunning followed by a *killing* method or direct *killing* method. Where stunning is used, *death* should be ensured before consciousness is recovered.

Criteria which may influence the choice of methods used in the *killing* process include:

- species and size of the reptile;
- the extent to which movement of the reptile can be restricted during the *killing* process;
- level of knowledge and skill required to perform the procedure effectively;
- safety of the operator;
- compatibility with processing requirements and reptile product purposes;
- in the case of the use of drugs, the drug availability, licensing and use requirements, possible human abuse, and implications for other product uses such as consumption by a reptile, animals or humans;
- ability to maintain equipment in proper working order.

The *killing* process used should:

- minimise agitation, fear, stress and pain to the reptiles;
- be appropriate for the species, size, age and health of the reptile;
- be reliable and reproducible;
- include the use of a stunning method (in accordance with Article 7.14.2.) followed by a *killing* step, or alternatively a one-step direct *killing* method; and
- when it includes a stunning step, ensure that *death* occurs during unconsciousness.

While economic or cost factors may influence the choice of the method used for stunning or *killing*, these factors should not compromise the welfare of the reptiles and the outcomes described in this chapter.

Article 7.14.6.

Criteria (or measurables) for the outcome of the stunning and killing of reptiles

The following animal-based criteria (or measurables) can be useful indicators of *animal welfare*. The use of these criteria and their appropriate thresholds should be adapted to the different methods used to stun and kill reptiles. These criteria can be considered as tools to monitor the impact of the method and management used, given that both of these can affect *animal welfare*.

As far as criteria to measure the effectiveness of stunning and *killing* methods are concerned and whilst multiple criteria are preferable for the verification of unconsciousness or *death*, the presence of any of the following criteria should be regarded as sufficient to establish suspicion of consciousness:

- pupillary response to light or moving objects;
- eye movement in response to objects or movement;
- blink or nictitating membrane responses to touch or contact of the cornea in species where eyelids are present;
- spontaneous eyelid opening or closing in species where eyelids are present;
- intentional defensive responses;
- tongue movement;
- jaw tone (except crocodylians).

In addition to the absence of all the criteria above, *death* may be inferred by confirming permanent cessation of the following:

- response to stimuli applied to the head, indicating brain activity;
- respiration;
- cardiac activity (while presence of a heartbeat does not necessarily mean that the reptile is alive, permanent cessation of a heartbeat indicates *death*). Cardiac activity should not be used as the sole indicator of *death*.

Article 7.14.7.

Physical restraint

Physical restraint is most often required in the process of stunning and *killing* of reptiles to control movement and improve the precision of application. Special considerations for the restraint of reptiles are needed due to the physical and behavioural characteristics of this taxonomic group.

As far as recommendations for effective physical restraint in relation to *animal welfare* are concerned, the method of restraint should:

- avoid injuries due to excessive pressure applied by equipment or personnel;
- be applied rapidly to avoid excessive or prolonged struggling of the reptile;
- exclude features that may cause pain or injury;
- not hoist or suspend animals by the feet, legs, tail or head;
- not restrain only one area of the body (e.g. head or neck) leaving the rest able to move excessively;
- ensure animals can breathe freely through the nostrils where the mouth is restrained;
- adequately support the animal's body when moving it;

- avoid taping or binding the legs or feet of the reptiles as the sole method of restraint, and, where required, the method should not cause injuries or pain.

Procedures or practices unacceptable on *animal welfare* grounds are:

- causing any unnecessary injuries, for example, severing the spinal cord, breaking limbs, cutting limb tendons or damaging eyes, whether for immobilisation or any other reason;
- pulling or probing sensitive body parts, other than for the purposes of verifying some reflex such as the cloacal reflex.

Animal-based criteria (or measurables): excessive struggling, excessive movements, excessive vocalisation, trauma and injuries.

Article 7.14.8.

Introduction to stunning and killing methods

Stunning may be used to facilitate the *killing* of reptiles. Stunning methods may result in the *death* of the reptile following unconsciousness, or may require an additional *killing* step.

If stunning is used, the method should:

- be appropriate for the species, size, age and health of the reptile;
- be reliable and reproducible;
- minimise agitation, stress and pain to the reptile;
- avoid or minimise restraint in accordance with Article 7.14.7.;
- result in the immediate onset of unconsciousness or the absence of pain, distress and suffering until the onset of unconsciousness that lasts until the reptile is dead;
- be followed by a *killing* method if stunning does not result in *death* of the reptile during unconsciousness.

The equipment used should be maintained and operated properly and in accordance with the manufacturer's recommendations, in particular with regard to the species and size of the animal. The maintenance of the equipment is the responsibility of the management of the facility, and should be under the supervision of the *Competent Authority* or accredited delegated body. If the primary method of stunning fails to produce unconsciousness as described in Article 7.14.6. and, in accordance with this article, a back-up stunning or *killing* method should be used immediately (Articles 7.14.9. to 7.14.16.).

Animal-based criteria (or measurables): immediate onset of unconsciousness or *death* as described in Article 7.14.6.

Article 7.14.9.

Electrical stunning (for crocodylians only)

Electrical stunning is the application, through the brain, of an electric current of sufficient strength and duration, at a suitable frequency to cause immediate unconsciousness that lasts until *death*.

Recommendations for effective use of electrical stunning in relation to *animal welfare* are:

- the equipment and the procedure for its application should be approved by the *Competent Authority* or an accredited designated authority;
- the apparatus should deliver sufficient current through the brain;
- the equipment should be scientifically validated, tested and calibrated prior to use and maintained according to a set protocol;
- minimum electrical parameters (current, voltage and frequency) should be applied. Parameters may vary with size, age, weight, etc., within a species;
- minimum length of time of application of the current should be achieved. Duration may vary with size, age, weight, etc., within a species;
- reptiles should be killed in accordance to Articles 7.14.10. to 7.14.16. without delay following confirmation of effective stunning to avoid recovery of consciousness;
- reptiles should be effectively restrained when accurate application of the electrodes is dependent upon it;

- equipment should be selected to suit the species, size and type of the reptile;
- equipment should be cleaned, maintained and stored following manufacturer's recommendations.

Animal-based criteria (or measurables): immediate onset of unconsciousness as described in Article 7.14.6.

Article 7.14.10.

Penetrative captive bolt

The aim of this method is to produce a state of unconsciousness and cause severe damage to the brain by the impact and penetration of a captive bolt using a mechanical device. The force of impact and the physical damage caused by the passage of the bolt should result in immediate unconsciousness and *death*. If *death* does not occur following the passage of the penetrative bolt, then an additional *killing* method in accordance with Articles 7.14.10. to 7.14.16. should be used immediately to ensure *death*.

Recommendations for the effective use of a penetrative captive bolt in relation to *animal welfare* are:

- reptiles should be effectively restrained;
- the device should be correctly positioned on the head to result in the penetration of the brain by the bolt;
- the bolt should be of appropriate mass, length, diameter and shape;
- cartridge or compressed air specifications should be determined to deliver the correct bolt velocity;
- equipment and charge should be selected to suit the species, size and type of the reptile;
- equipment should be cleaned, maintained and stored, following manufacturer's recommendations.

Animal-based criteria (or measurables): immediate onset of unconsciousness or *death* as described in Article 7.14.6.

Article 7.14.11.

Non-penetrative captive bolt

The non-penetrative captive bolt method is sometimes called 'concussive stunning', although concussion is the underlying principle for both penetrative and non-penetrative methods. The concussion may result in both unconsciousness and *death*. If *death* does not occur following the application of the percussive blow, then an additional *killing* method in accordance with Articles 7.14.10. to 7.14.16. should be used immediately to assure *death*.

Recommendations for an effective use of non-penetrative captive bolt in relation to *animal welfare* are:

- reptiles should be effectively restrained;
- the device should be correctly positioned on the head to allow optimum transfer of energy to the brain;
- the bolt should be of mass, diameter and shape appropriate to the anatomy of the cranium and brain;
- the equipment should be appropriately selected and maintained and adjusted for the species, size and type of the reptile;
- cartridge or compressed air specifications should be determined to deliver the correct bolt velocity;
- equipment and charge should be selected to suit the species, size and type of the reptile;
- equipment should be cleaned, maintained and stored, following manufacturer's recommendations.

Animal-based criteria (or measurables): immediate onset of unconsciousness or *death* as described in Article 7.14.6.

Article 7.14.12.

Percussive blow to the head

A percussive blow to the head to induce cerebral concussion can be achieved manually. A concussive state is normally associated with a sudden loss of consciousness with associated loss of reflexes. Inducing unconsciousness requires the transfer of sufficient energy into the brain to disrupt normal neural function. If the severity of the blow is sufficient then it will result in the *death* of the animal. If *death* does not occur following the application of the percussive blow, then an additional *killing* method in accordance with Articles 7.14.10. to 7.14.16. should be used immediately to ensure *death*. It is important to note that due to anatomical differences between species (e.g. thickness of braincase in crocodilians), this method may be difficult to apply and in such cases, other stunning and *killing* methods should preferentially be used.

Recommendations for effective use of percussive blow to the head in relation to *animal welfare* are:

- reptiles should be effectively restrained;
- the blow should be correctly applied to result in optimum transfer of energy to the brain;
- the tool should be of appropriate size and weight, and the blow of sufficient force to induce concussion;
- equipment and method should be selected to suit the species, size and type of the reptile.

Animal-based criteria (or measurables): immediate onset of unconsciousness or *death* as described in Article 7.14.6.

Article 7.14.13.

Gunshot

An effective gunshot, where the projectile enters the brain, can cause immediate unconsciousness and *death*. A gunshot to the heart or neck does not immediately render a reptile unconscious and therefore should not be used. If *death* does not occur following the gunshot, then an additional *killing* method in accordance with Articles 7.14.10. to 7.14.16. should be used immediately to ensure *death*.

Manual restraint of the reptile should not be used due to safety concerns for humans in the line of fire.

Recommendations for effective use of gunshot in relation to *animal welfare* are:

- accurate targeting of the brain should be ensured;
- selected firearm and projectile should be suitable for the species, size and type of the reptile;
- equipment should be cleaned and stored following manufacturer's recommendations.

Animal-based criteria (or measurables): immediate onset of unconsciousness or *death* as described in Article 7.14.6.

Article 7.14.14.

Pithing

Pithing is an adjunct method used to ensure *death* by destruction of brain tissue. It is carried out by inserting a rod or probe through the foramen magnum or shot hole from a penetrative captive bolt or gunshot, into the brain. After insertion of the rod or probe it should be promptly turned a minimum of four times in a centrifugal motion to ensure destruction of the brain tissue.

Recommendations for effective use of pithing in relation to *animal welfare* are:

- pithing should only be used in unconscious reptiles;
- movement of the pithing implement should ensure maximum destruction of brain tissue.

Animal-based criteria (or measurables): confirmation of *death* as described in Article 7.14.6.

Article 7.14.15.

Decapitation or spinal cord severance

Decapitation involves cutting the neck of the animal, between the skull and the first cervical vertebra using a sharp instrument (guillotine, axe or blade) leading to severance of the head. For some reptile species, decapitation is not anatomically feasible. For severance of the spinal cord, complete separation of the head from the neck is not necessary. Some reptiles may remain conscious for over an hour after decapitation or spinal cord severance, which makes decapitation or severance of the spinal cord acceptable only in stunned and unconscious reptiles and when followed by immediate destruction of the brain.

Recommendations for effective use of decapitation or spinal cord severance in relation to *animal welfare* are:

- decapitation or spinal cord severance should only be used on unconscious reptiles;
- decapitation or spinal cord severance should always be followed immediately by physical intervention to destroy the brain, i.e. immediate crushing of the brain or pithing.

Animal-based criteria (or measurables): confirmation of *death* as described in Article 7.14.6.

Article 7.14.16.

Chemical agents

There are a number of chemical agents that, subject to relevant regulatory approvals, can be used for the restraint or *killing* of reptiles. The use of these agents for either restraint or *killing* should be supervised by *veterinarians* or *veterinary paraprofessionals* in accordance with the requirements of the *Competent Authority*. If *death* does not occur following administration of the agent, then an additional *killing* method in accordance with Articles 7.14.10. to 7.14.16. should be used immediately to ensure *death*.

The effectiveness of the chemical agent will vary according to the metabolic rate of reptiles.

Recommendations for effective use of chemical agents in relation to *animal welfare* are:

- ensure proper physical restraint is used for administration;
- ensure chemicals and doses used are appropriate for the species and size of the reptile;
- ensure the route of administration is appropriate for the reptiles.

Animal-based criteria (or measurables): confirmation of *death* as described in Article 7.14.6.

Article 7.14.17.

Methods that are unacceptable for stunning and killing reptiles

Due to particular anatomical and physiological characteristics of reptiles the use of any method other than those described in Articles 7.14.10. to 7.14.16., is considered inappropriate and unacceptable. Some examples of unacceptable methods are:

- exsanguination,
- freezing or cooling,
- heating or boiling,
- suffocation or drowning,
- inflation using compressed gas or liquid,
- live evisceration or skinning,
- constriction bands to induce cardiac arrest,
- inhalation of asphyxiating gases: carbon dioxide (CO₂), carbon monoxide (CO) or nitrogen (N₂),
- use of neuro-muscular blocking drugs,
- cervical dislocation.

NB: FIRST ADOPTED IN 2019.

