CHAPTER 7.Y.

KILLING OF REPTILES FOR THEIR SKINS, MEAT AND OTHER PRODUCTS

Article 7.Y.1.

Scope

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

Article 7.Y.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:

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 unconsciousness until the animal 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.

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.

Article 7.Y.3.

General considerations

Because of the anatomy and physiology of reptiles, specific various factors should be considered when choosing the appropriate restraining, stunning and killing method. Such factors include the size of the reptile animal, tolerance and intolerance of certain species to particular methods, reptile animal handling and restraint, 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 animals reptiles until their death.

The animal welfare plan should contain standard operating procedures for each step of reptile animal handling to ensure that it is properly implemented, based on relevant recommendations in this chapter, including criteria indicators shown in Article 7.Y.5. 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 animals.

Annex 10 (contd)
2. Competency and training of the personnel

*Animal handlers* should be competent in handling and moving, stunning and verifying monitoring 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. Source of animals

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

Relevant documentation related to the source of the animals should accompany the animals.

When moving reptiles, if animals captured in the wild are to be used, capture and transport techniques should not compromise be humane and give due regard to human and animal health, welfare and safety.

4. Behaviour

Behavioural considerations for handling and killing

Handling, restraining, stunning and killing methods should take into account specific reptile behaviours indicating fear, pain or distress, such as well as:

- reptiles are sensitive to and will respond sensitivity and responsiveness to visual, and tactile, auditory, olfactory and vibrational stimuli as well as noise and vibrations;
- ability to escape handling and restraint the restraint and handling of reptiles can be difficult because of their agility and strength;
- ability to reptiles can inflict significant bite wounds to handlers, and frequently with wound infection or envenomation are not uncommon;
- low body temperatures may result in slow movements, torpor and reduced responsiveness due to low body temperatures or slow metabolic rates, which may result in slow movements, and that should not be regarded as indicators of quiescence or unconsciousness;
- absence of vocalisation is common or normal which is typical in reptiles, even in highly traumatic situations.

*Article 7.Y.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).
Relevant documentation related to the source of the animals should accompany the animals.

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

**Article 7.Y.4.**

**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 by involving a stunning and a subsequent *killing* step or a direct *killing* method. A stunning method should involve either prior stunning followed by a *killing* method or an instantaneous method of *killing*. When prior stunning is used and the stunning is not irreversible, reptiles should be killed before consciousness is recovered.

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

- **species and size of the reptile**;
- level of knowledge and skill required to perform the procedure effectively;
- safety of the operator;
- compatibility with processing requirements and *reptile animal* 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 *reptile animal* or humans;
- ability to maintain equipment in proper working order;
- **cost of the method**.

The *killing* process used should:

- avoid *excitement, agitation, fear, and stress; and pain* to the *reptile animal*;

The animals

Comments: African Union proposes to amend requirement to read: avoid or minimize *excitement, agitation, fear, and stress; and pain* to the *reptile animal*.

Rationale: Animals may not be in their natural environment hence it might be difficult to entirely avoid agitation or fear. Moreover, there are other animals that will not necessarily be calm during the killing process hence the need to use the word “minimize”

- be appropriate for the species, size, age and health of the *animal reptile*;
- be reliable and reproducible;
- ensure that any stunning used is in accordance with Article 7.Y.2.; and
- include the use of a stunning method (in accordance with Article 7.Y.2.) followed by a killing step, or alternatively a one-step direct killing method; a *killing* method if the stunning method does not result in death of the *animal reptile* during unconsciousness; and
- where it includes a stunning step, ensure that death occurs during unconsciousness kill the reptile while it is unconscious.

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.Y.5.**

**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.
Annex 10 (contd)

Criteria to measure the effectiveness of stunning and killing methods

Whilst multiple criteria are preferable for the verification establishment 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;
- pupillary response to objects or movement;
- eye movement in response to objects or movement;
- blink or nictitating membrane responses to touch or contact of the cornea;
- spontaneous eyelid opening or closing;
- intentional defensive responses;
- tongue movement;
- jaw tone (except crocodilians).

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

- response to somatic stimuli applied to the head, indicating brain activity;
- respiration;
- cardiac activity (while presence of aheartbeat does not necessarily mean that the reptile animal is alive, permanent cessation of a heart indicates death). Cardiac activity should not be used as the sole indicator of death. It is important to note that a reptile’s heartbeat may change from beats per minute to beats per hour.

Article 7.Y.

Physical restraint

Physical restraint is 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.

Recommendations for effective physical restraint in relation to animal welfare

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 animal;
- 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;
Annex 10 (contd)

‒ avoid taping or binding the legs or feet of the animals 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:

‒ not breaking legs, cutting limb tendons or blind animals damaging the eyes of the reptiles in order to immobilise them;

‒ not severing the spinal cord to immobilise animals the reptiles, 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.Y.28.

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 animal 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 animal-reptile;

‒ be reliable and reproducible;

‒ avoid agitation, excitement, and stress and pain to the animal reptile;

Comment: African Union recommends to amend the requirement as follows: avoid or minimise agitation, excitement, and stress and pain to the animal reptile

Rationale: For purposes of consistency and in line with earlier comments on 7.Y.5 bullet 8

– avoid or minimise restraint in accordance with Article 7.Y.67;

– 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 animal is dead;

– be followed by a killing method if stunning does not result in death of the reptile animal 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.Y.58 and in accordance with this article, a back-up stunning or killing method should be used immediately (Articles 7.Y.68 to 7.Y.15).

Animal-based criteria (or measurables): immediate onset of unconsciousness or death as described in Article 7.Y.56.

Article 7.Y.69.

Electrical stunning (for crocodilians only)
Electrical stunning is the application, through the brain of an electric current of sufficient strength and duration, and at suitable frequency, through electrodes for the purpose of causing immediate unconsciousness that lasts until death.

Comments: AU proposes the editorial comment below:

Electrical stunning is the application, through the brain of an electric current of sufficient strength and duration, at and suitable frequency to............

Rationale: To improve readability and logical flow
Recommendations for effective use in relation to *animal welfare*:

- 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 stun duration should be achieved. Duration may vary with size, age, weight etc., within a species;
- animals reptiles should be killed in accordance to Articles 7.Y.910 to 7.Y.15. 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 type and size 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.Y.56.

**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.Y.910 to 7.Y.15. should be used immediately to ensure death.

Recommendations for the effective use in relation to *animal welfare*:

- animals 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, type and size of animal the reptile;
- equipment should be cleaned, maintained and stored, following manufacturer’s recommendations.

Animal-based criteria (or measurables): immediate onset of unconsciousness and death as described in Article 7.Y.5.
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.Y.9 to 7.Y.15. should be used immediately to assure death.

Recommendations for an effective use in relation to animal welfare:

– animals 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 appropriate 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 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, type and size of animal the reptile;
– equipment should be cleaned, maintained and stored, preferably following manufacturer’s recommendations.

Outcome-based criteria (or measurable): immediate onset of unconsciousness or death as described in Article 7.Y.56.

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.Y.9 to 7.Y.15. 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 in relation to animal welfare:

– animals 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, type and size of animal the reptile.

Animal-based criteria (or measurables): immediate onset of unconsciousness or death as described in Article 7.Y.56.
Annex 10 (contd)

Article 7.Y.12.

**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 animal 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.Y.9. to 7.Y.15. should be used immediately to ensure death.

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

Recommendations for effective use in relation to animal welfare:

- ensure accurate targeting of the brain;
- select firearm and projectile suitable for the species, type and size of animal 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.Y.56.

**Comments:** African Union is concerned about the “accurate shot placement” during an effective gunshot due to the small surface area of the brain particularly in crocodiles. AU is of the opinion that it will be difficult to assess whether the brain has been destroyed especially if free projectile shooting is allowed. AU recommends that the OIE should provide some guidance on the placement of the accurate shot for effective stunning of the reptile.


**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 to ensure thorough brain destruction. After insertion of the rod or probe it should be promptly turned a minimum of four to six times in a centrifugal motion to ensure destruction of the brain tissue.

Recommendations for effective use in relation to animal welfare:

- should only be used in unconscious animal 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.Y.56.

Article 7.Y.14.

**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, this method 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 this method decapitation or severance of the spinal cord acceptable only in stunned and unconscious reptile animals and when followed by immediate destruction of the brain by pithing or percussive blow.

Recommendations for effective use in relation to animal welfare:
– should only be used on unconscious animal reptiles;

– 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.Y.65.
Article 7.Y.15-16.

Chemical agents

There are a number of acceptable 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.Y.9 to 7.Y.15 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 in relation to animal welfare:
– ensure proper physical restraint is used for administration;
– ensure chemicals and dosage used are appropriate for the species and size of animal reptiles;

Comment: African Union proposes the inclusion of "age" as part of the requirement as follows: ensure chemicals and dosage used are appropriate for the species, age and size of animal reptiles.

Rationale: The age of the reptile can impact on the dosage of chemical agent administered

Comments: African Union proposes an additional text as follows:
- Not recommended if the reptile is for meat consumption

– ensure the route of administration is appropriate for the animal reptiles.

Animal-based criteria (or measurables): confirmation of death as described in Article 7.Y.56.

Article 7.Y.16-17.

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.Y.9 to 7.Y.15., are 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,
– inhaled inhalation of asphyxiating gases carbon dioxide (CO₂), carbon monoxide (CO) or nitrogen (N),
– use of paralysing paralytic agent drugs;

Comment: African Union recommends that bullet 9 should provide specific clarification about the use of paralysing drugs since some are acceptable and others are not. e.g. neuromuscular blocking drugs are not acceptable.

– cervical dislocation.
Annex 10 (contd)

References


