



EFSA OPINION

ON-FARM KILLING OF SHEEP AND GOATS

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TWO EC MANDATES ON SLAUGHTER OF ANIMALS AND KILLING FOR PURPOSES OTHER THAN HUMAN CONSUMPTION

Background on the subject

- Council Regulation (EC) No 1099/2009
- Previous EFSA Scientific outputs adopted in 2004, 2006, 2012, 2013, 2014, 2015, 2017
- Terrestrial Animal Health Code from WOAHA - revision of:

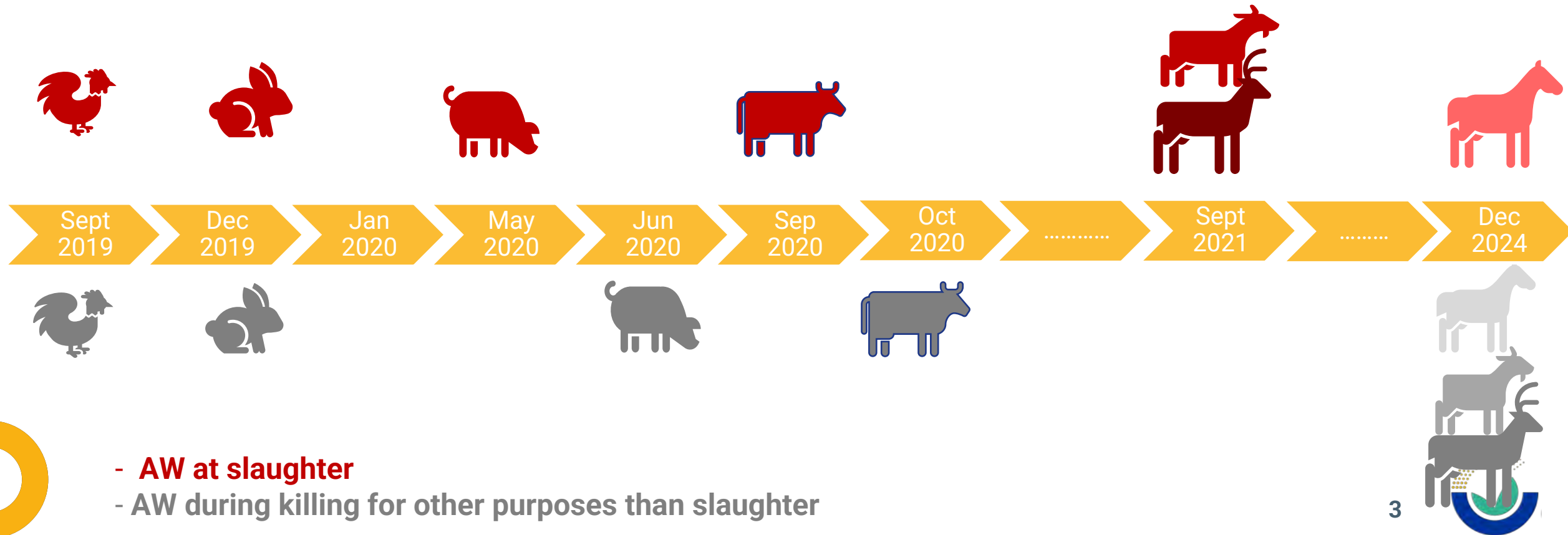
Request to EFSA in 2018:

To review the scientific literature and **provide a sound scientific basis for future discussions at international level** on the welfare of the animals in the context of **slaughter and other types of killing** (killing for other purposes than slaughter)

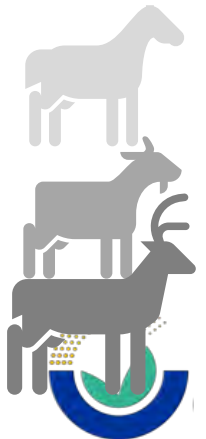


TIMELINE

Timeline of the adoptions by the AHAW Panel: 11 Scientific Opinions



- **AW at slaughter**
- AW during killing for other purposes than slaughter



DEFINITION OF THE SCENARIO

Other purposes than human consumption

- large scale killings on-farm in case of depopulation for disease control purposes and similar situations (environmental contamination, disaster management, etc.).
- killing of individual animals for health, welfare or economic reasons



APPROACH

Phase 1: pre-killing

includes processes:

- Handling and moving to the killing area
- Restraint

Phase 2: killing

includes processes:

- Stunning & killing methods
- Bleeding



Welfare consequences implied

(based on expert knowledge elicitation)

Hazards

(based on literature)

ABMs

(based on literature)

Preventive and corrective measures

(based on literature)



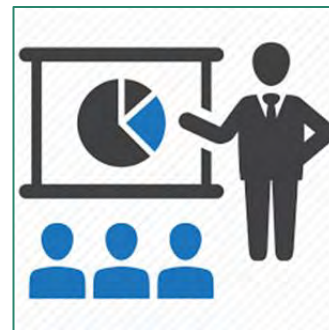
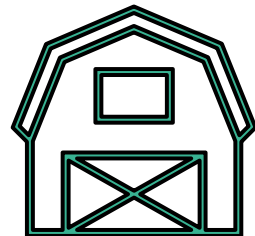
GENERAL CONCLUSIONS & RECOMMENDATIONS

Concl ->

During the on-farm killing process, most of the hazards identified are associated with lack of specific skills and training of the staff, and with poorly designed or constructed facilities.

Recc ->

1. Design, construction and maintenance of the farm and handling facilities to prevent as much as possible restriction of movements, handling stress and injuries during killing on farm.
2. All processes of the killing to be carried out by trained and skilled personnel.
3. Welfare to be assessed at each phase to prevent and correct hazards and mitigate their welfare consequences.
4. Farms to have SOPs including identification of hazards and related welfare consequences, using relevant ABMs, as well as preventive and corrective measures.



PHASE 1: HANDLING AND MOVING TO THE KILLING AREA

Concl ->

1. welfare consequences: restriction of movements, handling stress and injuries.
2. ABMs: slipping, falling and trampling (restriction of movements), escape attempts, reluctance to move, vocalizations (handling stress), skin lesions and wounds, bone fractures, and dislocated joints (for injuries)

Recc->

1. Distance to the point of killing to be kept to a minimum.
2. Animals not forced to move faster than their normal, unhindered walking pace.
3. Sheep and goats, that are lame, injured, or show signs of severe pain should be killed in their home pens/pastures.
4. Painful stimuli, such as electric goads, hitting with a stick, lifting or pulling by wool, skin fold or horns etc. should not be used. Instead, softer stimuli such as flags, plastic paddles or streamers should be used.
5. When lead sheep or dogs are used to handle and move the animals, they should be trained.
6. Extensively raised animals should be handled with extra care since they are typically more fearful of humans.



PHASE 1: RESTRAINT

Animals should be restrained appropriately:

1. equipment for restraint should be adjusted to the size of the animal category;
2. head collar and lead rope, halter or bridle may be used to secure and to restrict movement of the head of animals;
3. duration of restraint should be as short as possible;
4. **use of strawbales or wooden boards to construct temporary 'stun boxes'** (in case of stunning of animals in groups).



PHASE 2: KILLING

1 step

Killing only: the application of the method is sufficient to stun and kill the animals at the same time.

2 steps

Stunning and killing : the first step does not lead to death of the animals and a second step is needed.



METHODS USED FOR ON-FARM KILLING OF SHEEP AND GOATS AND RESPECTIVE ANIMAL CATEGORIES

Method	Number of steps	Animal category
Electrical method 1: head-only electrical stunning followed by electrical fibrillation of the heart	Two 1) electrical stunning 2) electrical fibrillation of the heart (killing method)	<ul style="list-style-type: none"> • Adults • Lambs and goat kids • Neonates (up to 5 Kg)
Electrical method 2: electrocution (head to body)	One	<ul style="list-style-type: none"> • Adults • Lambs and goat kids • Neonates (up to 5 Kg)
Lethal injection	One	<ul style="list-style-type: none"> • Adults • Lambs and goat kids • Neonates (up to 5 Kg)
Penetrative captive bolt followed by a killing method	Two 1) penetrative captive bolt 2) killing method (e.g. pithing, lethal injection)	<ul style="list-style-type: none"> • Adults • Lambs and goat kids • Neonates (up to 5 Kg)
Non-penetrative captive bolt	One	Neonates
Percussive blow to the head	One	Neonates
Firearm	One	<ul style="list-style-type: none"> • Adults • Lambs and goat kids • Neonates (up to 5 Kg)



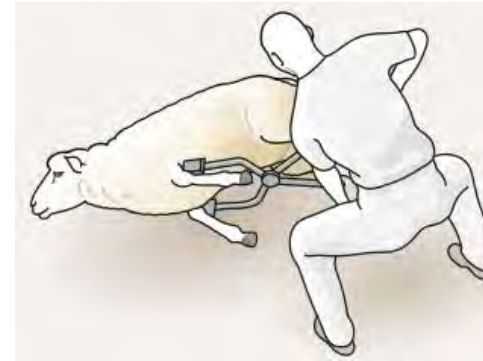
ELECTRICAL KILLING

1st step



application of the current to the head

2nd step



application of cardiac arrest current

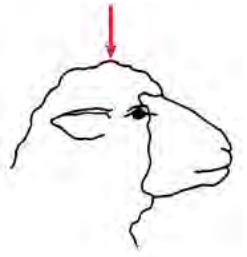
1. For electrical stunning of sheep and goats (one step and two steps), it is recommended to use a current of 1.0 A or more delivered at 50Hz sine wave alternating current for at least 2 seconds.
2. In order to improve the efficacy of head-only electrical stunning of sheep, the pins of the tongs should be long enough to penetrate the fleece in order to make contact with the skin and be wetted to increase the electrical contact.



NON-PENETRATIVE CAPTIVE BOLT FOLLOWED BY KILLING METHOD

Appropriate shooting position

highest point of the head aiming straight down



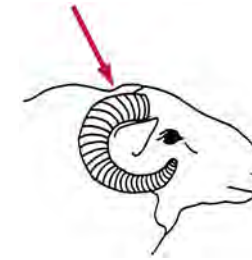
polled sheep

on the mid-line behind the bony mass



goats

on the mid-line, behind the ridge between the horns and aimed towards the tongue



horned sheep and goats

1. The use of non-penetrative captive bolt as killing method should be restricted to lambs and kid goats weighing up to 4.5 kg.
2. For animals weighing 4.5 kg to 10 kg, a killing method should be applied after the application of the non-penetrative captive bolt.
3. To be followed by pithing without any delay



OTHER METHODS

1. Percussive blow to the head of neonatal sheep and goats should not be used.
2. Lethal injection of anaesthetic **drugs should be performed strictly following the manufacturer's instructions** in relation to dose, route and rate of administration.

Unacceptable methods on welfare grounds

Killing sheep and goats with methods that are severely painful should not be used on welfare grounds.

For example:

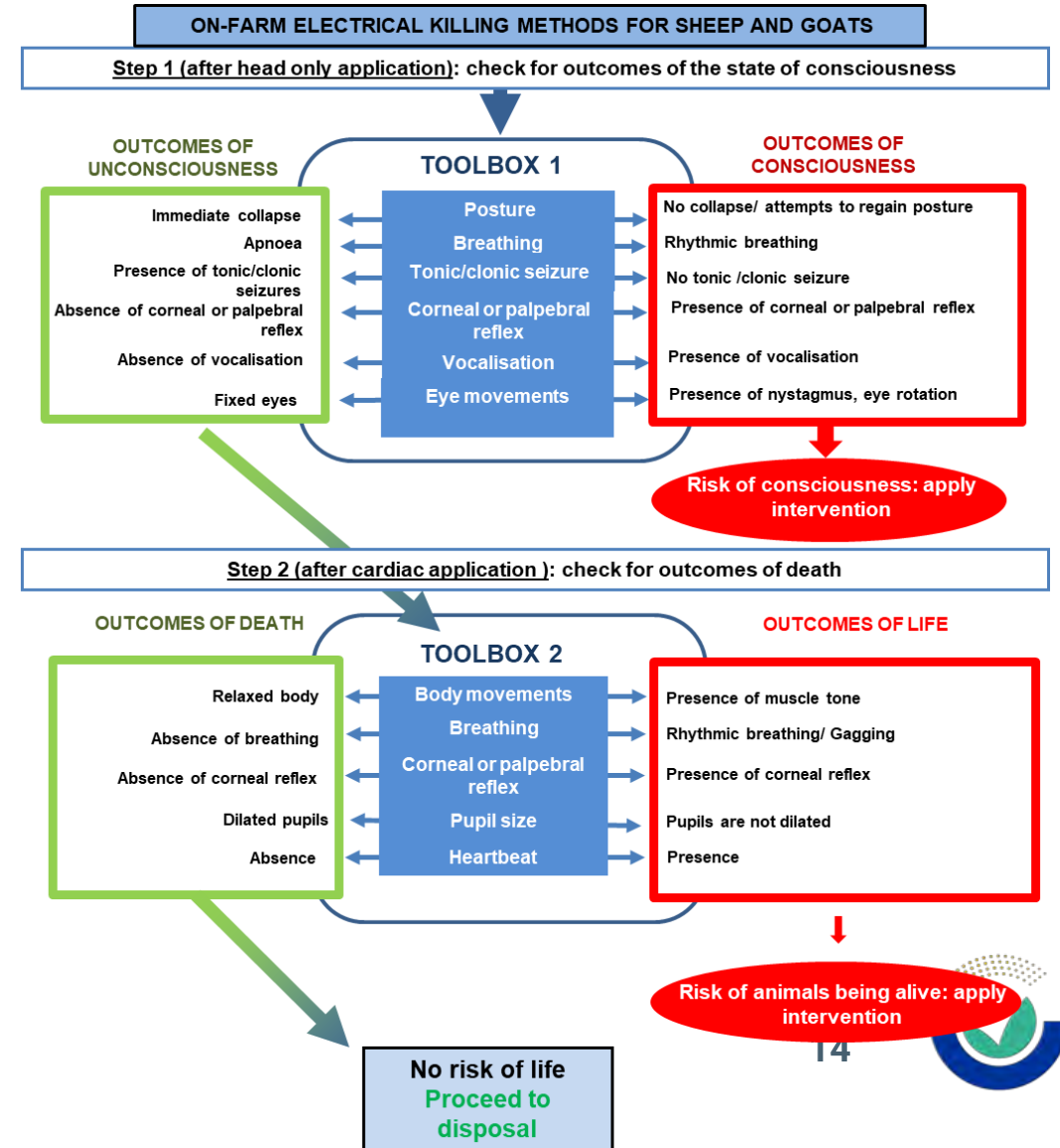
- inflicting injuries and wounds leading to death,
- burying, drowning, suffocating,
- addition of toxic substances to feed or water, injection of chemical agents or other substances not specifically designed or labelled for killing (i.e., disinfectants, cleaning solutions, etc.),
- air injection into blood vessels,
- and deep tranquilization as with xylazine or other alpha-2 agonist followed by potassium chloride or magnesium sulphate.



MONITORING KILLING EFFECTIVENESS

To monitor the efficacy of the killing method,
 -> the state of consciousness should be checked immediately after stunning,
 > death should be confirmed before carcass disposal

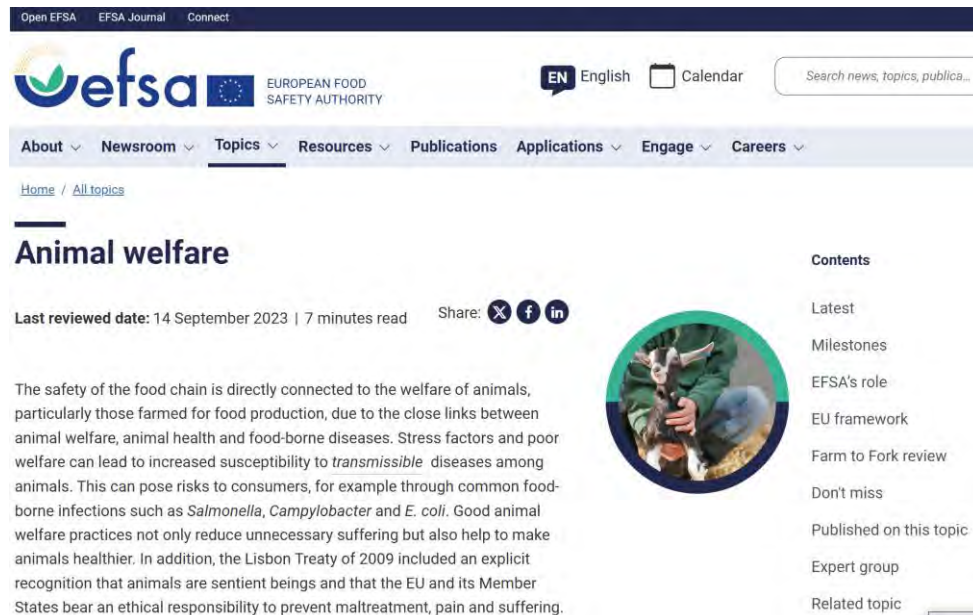
INDICATORS IN A TOOLBOX



THANK YOU FOR YOUR ATTENTION!

AHAW landing page:

<https://www.efsa.europa.eu/en/topics/topic/animal-welfare>



The screenshot shows the EFSA website's 'Animal welfare' landing page. At the top, there is a navigation bar with 'Open EFSA', 'EFSA Journal', and 'Connect'. The EFSA logo and 'EUROPEAN FOOD SAFETY AUTHORITY' are on the left, and 'EN English' and 'Calendar' are on the right. A search bar is also present. Below the navigation bar, there is a menu with 'About', 'Newsroom', 'Topics', 'Resources', 'Publications', 'Applications', 'Engage', and 'Careers'. The 'Topics' menu is active, and the breadcrumb trail shows 'Home / All topics'. The main heading is 'Animal welfare'. Below the heading, there is a 'Last reviewed date: 14 September 2023 | 7 minutes read' and a 'Share:' button with icons for X, Facebook, and LinkedIn. A circular image shows a person holding a small animal. The main text discusses the connection between food safety and animal welfare, mentioning stress factors and food-borne diseases like Salmonella, Campylobacter, and E. coli. On the right side, there is a 'Contents' section with links to 'Latest', 'Milestones', 'EFSA's role', 'EU framework', 'Farm to Fork review', 'Don't miss', 'Published on this topic', 'Expert group', and 'Related topic'.

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