

IZS
T E R A M O

WOAH Collaborating Centre
for animal welfare



Slaughter without stunning: main animal welfare concerns and results of a research project in Italy

Luigi Iannetti

IZS Teramo & SCAW/SLU – WOAH Collaborating Centre for Animal Welfare

**Regional workshop on animal welfare during slaughter
Tirana, Albania, 11-12 February 2025**

Halal and Shechita (Kosher)

- Two methods of neck cutting without stunning
- Here the main recommendations from WOAHA and EU to ensure the higher possible degree of animal welfare during religious stunning will be described
- Some results of a research project funded by the Italian Ministry of Health will be described



Halal and Shechita (Kosher)

CHAPTER 7.5.

ANIMAL WELFARE DURING SLAUGHTER

Article 7.5.1.

WOAH Terrestrial Animal Health Code

The new version (2024) does not include a specific chapter on slaughter without stunning, but there are many specific recommendations throughout the standard

Halal and Shechita (Kosher)

Article 4

Stunning methods

1. Animals shall only be killed after stunning in accordance with the methods and specific requirements related to the application of those methods set out in Annex I. The loss of consciousness and sensibility shall be maintained until the death of the animal.

4. In the case of animals subject to particular methods of slaughter prescribed by religious rites, the requirements of paragraph 1 shall not apply provided that the slaughter takes place in a slaughterhouse.

EC Regulation 1099/2009 on the protection of animals at the time of killing

In derogation to art. 4, in religious rites it is possible to not stun the animal, but all the other requirements must be followed



UNCONSCIOUS →

STUNNING

CUT

Courtesy of Sara Rota
Nodari IZSLER



Courtesy of Sara Rota
Nodari IZSLER



CRITICAL POINTS



1. RESTRAINT

2. CUT

3. BLEEDING-DEATH

Courtesy of Sara
Rota Nodari IZSLER

Specific critical points of slaughter without stunning according to WOAHC TAHC

Restraint

Slaughter without stunning increases the risk of *pain* and fear due to the need for robust *restraint* of conscious animals for neck cutting, especially if animals are turned on their sides or backs.

In case of *slaughter without stunning*, the restrainer should restrain the head and should support the body of the animal.

The restraint should be maintained until the animal is unconscious.

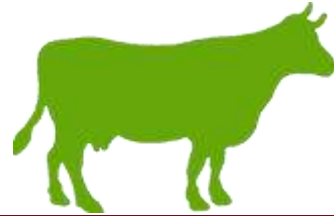
When restrainers that hold an animal with its feet off the floor are used, the animal should be held in a balanced, comfortable, upright position.

When a restrainer is used to rotate an animal from an upright position, the body and head should be securely held and supported to prevent struggling and slipping within the device.

Stunning prior to *slaughter* prevents *distress*, fear and *pain* to animals during neck cutting and bleeding



R E S T R A I N T



- **INDIVIDUAL**
- **MECHANICAL**



A device that restricts both the lateral and vertical movement of the head of the animal and are adjustable to be adapted to the size of the animal.

- **INDIVIDUAL**
- **MECHANICAL**
- **MECHANICAL HEAD RESTRAINT**

Courtesy of Sara
Rota Nodari IZSLER



R E S T R A I N T

NOT ALLOWED



**NOT
COMPLIANT
WITH EU
REGULATION**

- **INDIVIDUAL**
- **MECHANICAL**
- **MECHANICAL HEAD RESTRAINT**

Courtesy of Sara
Rota Nodari IZSLER



UPRIGHT RESTRAINT

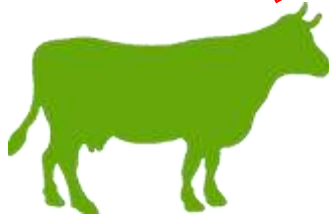


R
E
S
T
R
A
I
N
T



- INDIVIDUAL
- MECHANICAL

Courtesy of Sara
Rota Nodari IZSLER



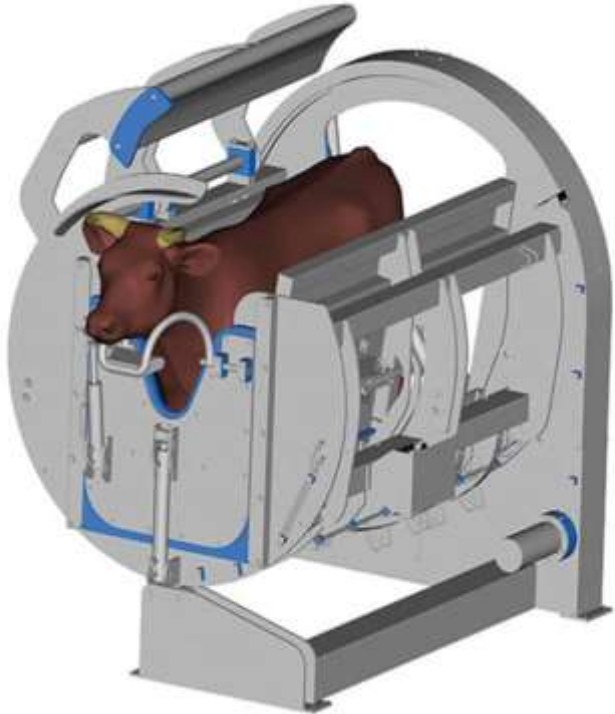
THE ANIMAL MUST BE SUPPORTED BUT NOT LIFTED



ROTATING RESTRAINT



**R
E
S
T
R
A
I
N
T**



- **INDIVIDUAL**
- **MECHANICAL**
- **MECHANICAL HEAD RESTRAINT**

Courtesy of Sara Rota Nodari IZSLER





ROTATION: RECOMMENDATIONS



**R
E
S
T
R
A
I
N
T**



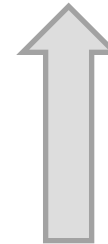
Courtesy of Sara
Rota Nodari IZSLER

- **ROTATE ONLY 90°**
- **ROTATE 90° AFTER THE CUT IN CASE OF 180° ROTATION**
- **RELEASE SOME PREASSURE AFTER ROTATION**

Specific critical points of slaughter without stunning according to WOAHC TAHC

Bleeding

Bleeding without prior *stunning* causes animal suffering because the incision to sever blood vessels results in substantial tissue damage in areas well supplied with nociceptors. The activation of these nociceptors causes the animal to experience *pain*. Loss of consciousness due to bleeding is not immediate and there is a period during which the animals experience fear, *pain* and *distress*. This period will be reduced by applying *stunning* immediately after neck cutting.



«**Post cut stun**», fully accepted by some religious communities (both muslim and jewish)

Specific critical points of slaughter without stunning according to WOAHC TAHC

Bleeding

In cases of bleeding without *stunning* the animal-based and other measures that indicate loss of consciousness include all the following: absence of muscle tone; absence of corneal or palpebral reflex; absence of rhythmic breathing. Unconsciousness should be reassessed until death is confirmed. In addition, cessation of bleeding after a continuous and rapid blood flow can be used as an indicator of death.

Crucial is checking unconsciousness

Slaughter without stunning:

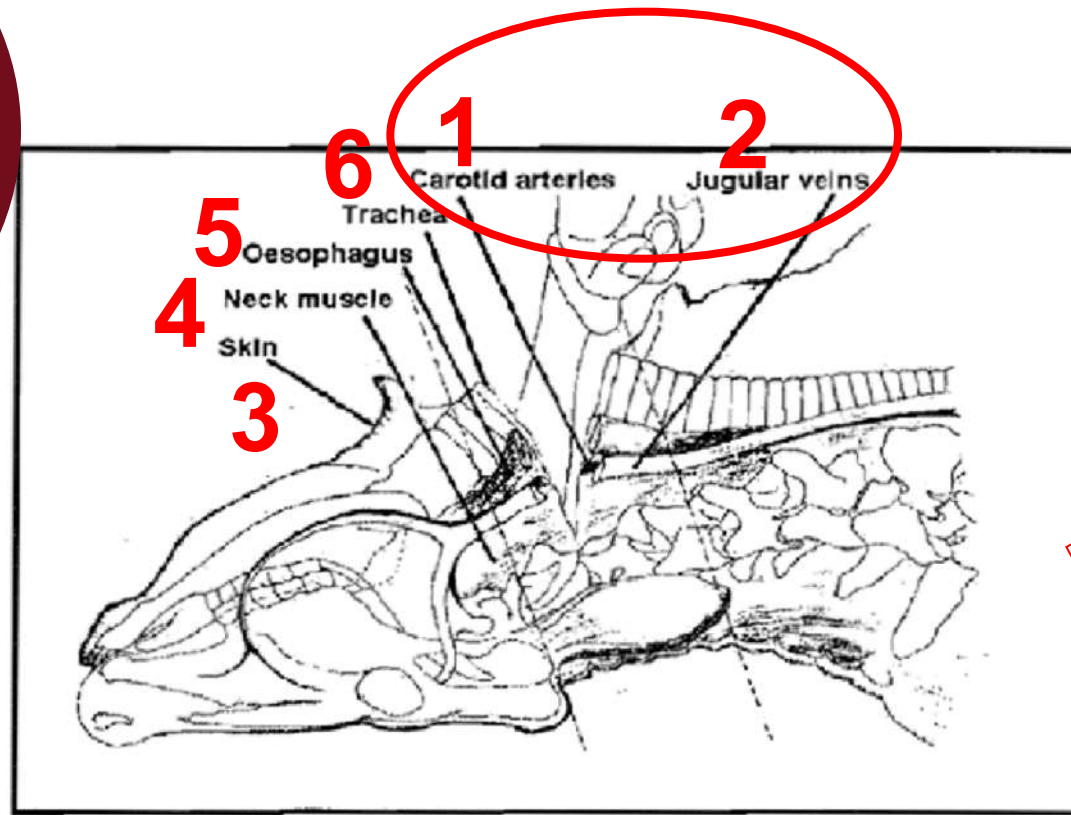
- a) bleeding should be carried out by a single incision; any second intervention should be recorded and analysed to improve procedures;
- b) further processing may only be carried out when the death of the animal has been ascertained.

**Well sharpened knife, single cut, very
good training of operators**



NECK
INCISION IS
DONE WITH
MINIMAL
DAMAGE

SINGLE CUT!!!



Courtesy of Sara
Rota Nodari IZSLER



KNIFE



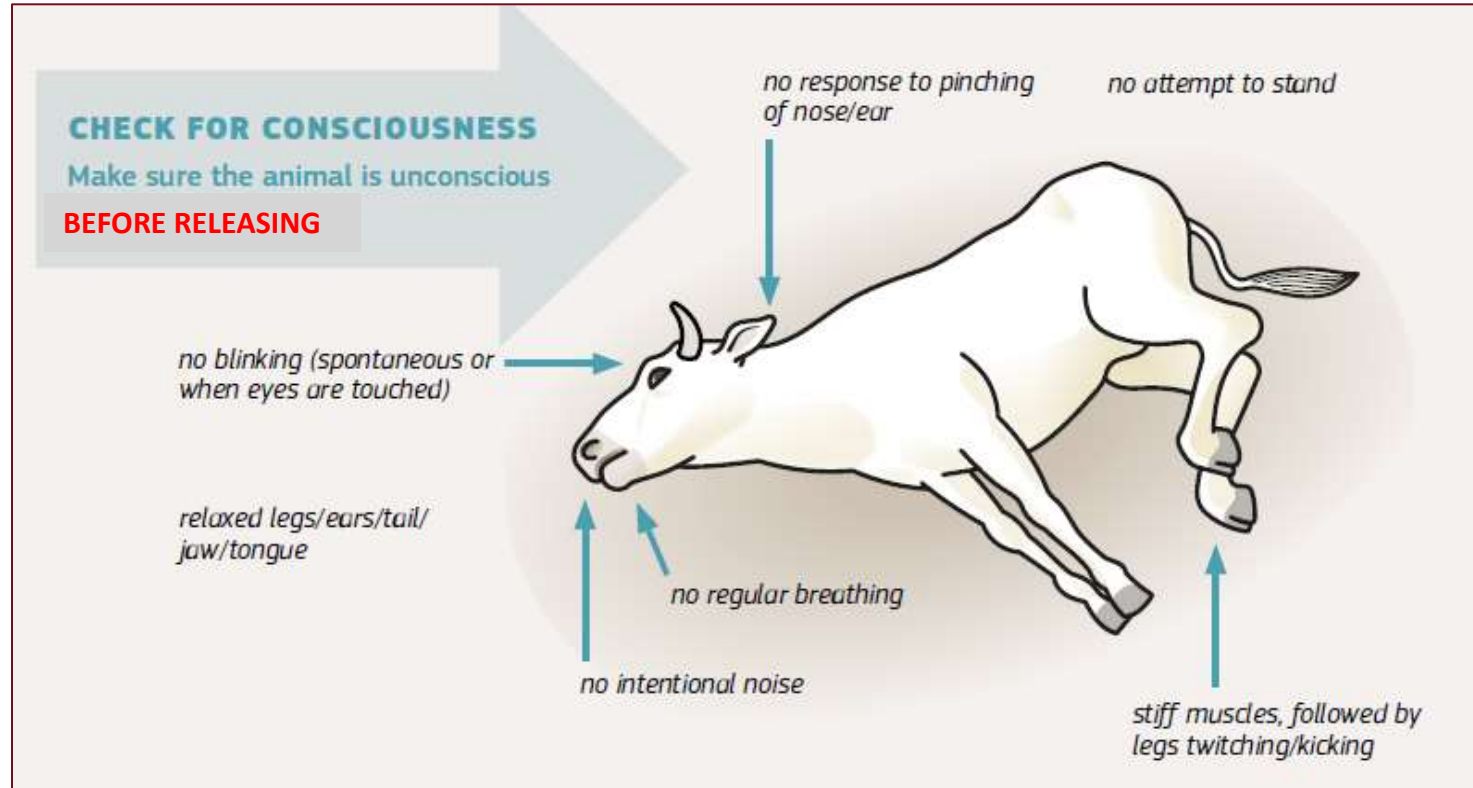
- RAZOR SHARP BLADE
- FREE OF ANY DENT OR IMPERFECTION

- WIDTH OF THE BLADE
- NO TIP/POINT

Courtesy of Sara
Rota Nodari IZSLER



UNCONSCIOUSNESS



Courtesy of Sara Rota Nodari IZSLER



Main recommendations to no-stunning slaughter operators from the DIALREL project

EU Funded project carried out in 2006-2010

- **Containment Appropriateness:** Animals are contained only at the time of cut and bleeding that occurs without delay.
- **Containment Adequacy:** The type of containment is appropriate for the type of slaughtered animal, and the containment structure is properly built (adequate lighting, non-slippery floor, absence of sharp edges).
- **Care in Animal Introduction:** The animal is introduced into the containment device carefully to reduce stress and injuries.

- **Optimal Pressure:** Optimal containment pressure is applied.
- **Knife:** Sharp and adequate to the species
- **Severing of Major Vessels:** Both carotid arteries and both jugular veins are severed with a single cut.
- **Specific Training for Operators:** Operators performing the jugulation are properly trained in executing the cut.
- **Checking for Signs of Unconsciousness:** Signs of unconsciousness are checked at least twice: for cattle, between 30 and 40 seconds after the cut; for sheep, between 15 and 25 seconds after the cut.
- **Backup stunning** in case of prolonged consciousness

2
1
IZS

T E R A M O

WOAH Collaborating Centre
for animal welfare



ThalaKos: Multidisciplinary Study on Ritual Slaughter

- Food Safety, Animal Welfare, and Socio-Cultural Aspects in the Production and Consumption of HALAL and KOSHER Meat (IZSAM 01/20 RC). Acronym "THalaKos"
- Funded by Italian Ministry of Health, in collaboration with other Public Veterinary Institutes in Italy and the National Reference Centre for Animal Welfare (CRENBA-IZSLER)
- Carried out from 2021 to 2024 in 3 different slaughterhouses in Italy, doing both ritual and conventional slaughtering in poultry, sheep and cattle



The Thalakos Project: Key Questions

- What are the critical points for animal welfare during ritual slaughter?
- How does slaughter-related stress impact the microbiological quality of meat?
- What is the approach of religious communities towards this type of slaughter?



Animal Welfare: Objectives

1. Evaluate the differences in animal welfare between ritual and conventional slaughter.
2. Assess, after 10 years, the real implementation of the DIAREL recommendations, specifically designed to improve animal welfare during ritual slaughter.
3. Collect data to define appropriate procedures to preserve animal welfare in this unique context.





Animal Welfare: Methods

Key factors considered:

- 1) Restraint
- 2) Cutting of major throat vessels
- 3) Bleeding process

- Specific checklists were developed
- The assessment followed WOA's Terrestrial Animal Health Code and EU legislation (EC No. 1099/2009), including operator competence requirements at every slaughter stage.
- DIALREL project recommendations were also considered.



Animal Welfare: Results

IZC

T E R A M

WOAH Collaborating C
for animal welfare

Reference Centre



World Org
for Animal
Health

• Verifica generale applicazione raccomandazioni progetto DIALREL per macellazione rituale

Metodo di contenimento	Descrizione	Stato
Appropriatezza contenimento	Animali contenuti solo in luogo idoneo idoneo per il tipo di animale	<input checked="" type="checkbox"/>
Adeguatezza contenimento	Il tipo di contenimento è adeguato al tipo di animale rispettando le strutture di contenimento e l'assenza di materiali nocivi (adeguatezza luci, pavimento non scivoloso, assenza spigoli)	<input checked="" type="checkbox"/>
Attenzione introduzione animale	L'animale è introdotto nel luogo di contenimento con attenzione, evitando di fidare corse e forche	<input checked="" type="checkbox"/>
Pressione ottimale	Pressioni adeguate di contenimento	<input checked="" type="checkbox"/>
Contenimento testa - accesso uccelli	Il contenimento della testa è adeguato e permette un corretto accesso ai uccelli	<input checked="" type="checkbox"/>
Contenimento testa - no stimoli	Il contenimento della testa è tale da non produrre stimoli nocivi e stress all'animale	<input checked="" type="checkbox"/>
Contenimento testa - valutazione rituale	È messo a disposizione della testa non coprire gli occhi, in modo da permettere la valutazione rituale	<input checked="" type="checkbox"/>

Inguale	Descrizione	Stato
Assenza di ritardo	Il taglio del collo viene eseguito in 1-2 secondi	<input checked="" type="checkbox"/>
Recessione grandi vasi	Salvo ritardo, la recessione dei grandi vasi è assicurata dal taglio del collo	<input checked="" type="checkbox"/>
Unico taglio	Il taglio del collo viene eseguito in un unico colpo di coltello	<input checked="" type="checkbox"/>
Coltello adeguato	La lunghezza del coltello è adeguata alla specie ed alla taglia per ridurre la necessità di effettuare più tagli per eseguire una corretta inguale	<input checked="" type="checkbox"/>
Coltello affilato	Il coltello è affilato e affilato prima dell'uso	<input checked="" type="checkbox"/>
Formazione specifica operatori	È necessario che i tagliatori siano adeguatamente formati ed esperti nel taglio	<input checked="" type="checkbox"/>



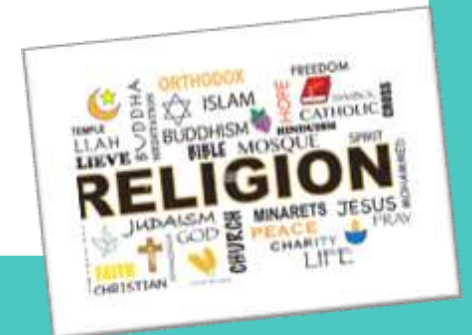
- Despite general compliance with DIALREL recommendations and well-trained operators, some critical issues were identified.
- Lack of regular consciousness checks for animals post-slaughter.
- Time to loss of consciousness was particularly long in cattle (60-277 seconds).
- The slaughter line speed was significantly slower for religious slaughter, especially for poultry.

New Knowledge

- Deepened understanding of ritual slaughter, a complex and sensitive topic.
- Strong collaborations with slaughterhouses and health authorities.
- Involvement of Islamic and Jewish communities.

Carcass Hygiene

- No major contamination differences between ritual and conventional slaughter.
- Better hygiene in some ritual slaughter samples (e.g., lower STEC prevalence) possibly due to slower processing speeds.





Thank you!

Special thanks to Sara Rota Nodari (IZSLER), Michele Podaliri Vulpiani (IZS Teramo) and Tatiana Bogdanova (IZSLT)