



Fourth EURCAW-Poultry-SFA & Reflection Board meeting

—
Online, 14-17h, October 22nd, 2024



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Welcome

Virginie Michel - EURCAW-Poultry-SFA



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14:00	14:05	Welcome (<i>V. Michel</i>)
14:05	14:10	Welcome (<i>DG SANTE</i>)
14:10	15:10	Update on the Centre's actual work (activity 1, 2, 3, 4 and 5) (V. Michel, A. Velarde, E. Nehlig) + Discussion
15:10	16:00	Presentation of main topics of the next work programme proposal (A. Velarde, V. Michel, E. Nehlig) + Discussion
16:00	16:55	Open discussion
16:55	17:00	Closure (V. Michel)

Introduction to EURCAW- Poultry-SFA

Virginie Michel - EURCAW-Poultry-SFA



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EU Reference Centers for Animal Welfare

Art. 95 of **'The Official Controls Regulation'**:

"The Commission shall, by means of implementing acts, designate European Union reference centers for animal welfare that shall support the activities of the Commission and of the Member States"



Since October 2018



Since February 2020



Since June 2021



Since May 2024

5 Activities

1. COORDINATED ASSISTANCE
2. ANIMAL WELFARE INDICATORS
3. SCIENTIFIC AND TECHNICAL STUDIES
4. TRAINING COURSES
5. DISSEMINATING RESEARCH AND INNOVATIONS



EURCAW-Poultry-SFA has 5 Priority areas

- 1. Broiler chickens on farm**
- 2. Laying hens in alternative housing systems**
- 3. Stunning and killing**
- 4. Rabbits on farm, with a focus on alternative housing systems**
- 5. Turkeys on farm and during transport**



Virginie MICHEL



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Anja B. RIBER Steen H. MØLLER Emily LEISHMAN



Objectives:

→ *to exchange, discuss about interactions, participation and identify possible interest.*

Delegates of the reflection board: Association/institutions/entities are members EU Platform on Animal Welfare

1. Eurogroup for Animals
2. Association of Poultry Processors and Poultry Trade in the EU (a.v.e.c.)
3. European Rural Poultry Association (ERPA)
4. European agri-cooperatives (COCEGA)
5. European farmers (COPA)
6. European Forum of Farm Animal Breeders (EFFAB)
7. Federation of Veterinarians of Europe (FVE)

We propose that RB:

- Follow-up the activities of the EURCAW-Poultry-SFA
- Reflection on the activities
- Support the Centre with:
 - ✓ Technical information
 - ✓ Indicators
 - ✓ Best practices
 - ✓ Trainings
- Disseminate the activities of the Centre among stakeholders
- Improve dialogue between inspectors and operators

Questions?



Welcome

DG SANTE G5



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Update of the Centre's actual work (activity 1, 2, and 3)

Chaired by Virginie Michel
EURCAW-Poultry-SFA



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Where to find Q2Es ?

<https://www.eurcaw-poultry-sfa.eu/en/minisite/sfawc/question-eurcaw-q2e>

HOME	SERVICES	OUTPUT	TOPICS	TRAINING	GOOD PRACTICES	TRANSLATION	KNOWLEDGE BASE	NEWS	ABOUT	EXTERNAL LINKS
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Services overview	
Questions to EURCAW (Q2E)	Q2E - Slaughter & Killing
Q2E webform	Q2E - Husbandry
	Q2E - Transport

QUESTIONS TO EURCAW (Q2E)

Scientific and technical assistance

There

The centre has been created of the regulation 2017/625 about official controls (art. 95) to support the European Commission and member states in the applications of legislation regarding poultry and other small farm animals' welfare.

The Centre offers scientific and technical assistance to Competent Authorities (CA), National Reference Centre (NRC), other Supporting Bodies (SB), from the EU Member States and the European Commission, regarding all aspects of welfare legislation implementation. The Centre is covering hatchery, farming, transportation and killing outside of risk assessment and risk management areas.

SLAUGHTER AND KILLING

2020-2024

Q2E-Poultry-SFA-2020-001 How captive bolt is used in Europe for the on-farm killing of small animals and how they addressed the issue of noise for other animals and security for the users?

1.2 Technical assistance, query service





- 4 eligible queries in 2020
 - 2 eligible queries in 2021
 - 6 eligible queries in 2022
 - 10 eligible queries in 2023
 - 5 eligible queries in 2024
- **With 1** under preparation

- **4 queries from 2023 answered in 2024**

- 🔍 [Q2E-Poultry-SFA-2023-007](#) Catching of turkeys in a loose house
- 🔍 [Q2E-Poultry-SFA-2023-009](#) Ad libitum access to water for broiler breeders.
- 🔍 [Q2E-Poultry-SFA-2023-010](#) Indicators of consciousness after electrical stunning in rabbits.
- 🔍 [Q2E-Poultry-SFA-2023-011](#) Pullets rearing in the first weeks in aviary.

1.2 Technical assistance, query service

4 Answered in 2024:

-  [Q2E-Poultry-SFA-2024-001](#) How to assess the effectiveness of broiler chicken house ventilation system?
-  Q2E-Poultry-SFA-2024-002: [Killing of unhatched chicks](#)
-  Q2E-Poultry-SFA-2024-003 [Pullet lighting improvement](#)
-  Q2E-Poultry-SFA-2024-004 [Broiler lighting improvement](#)

1.2 Technical assistance, query service

- **1 Q2E answer** under preparation

Ongoing in 2024:

 Q2E-Poultry-SFA-2024-005:Broiler optimum feeding frequency

1 Q2E example:

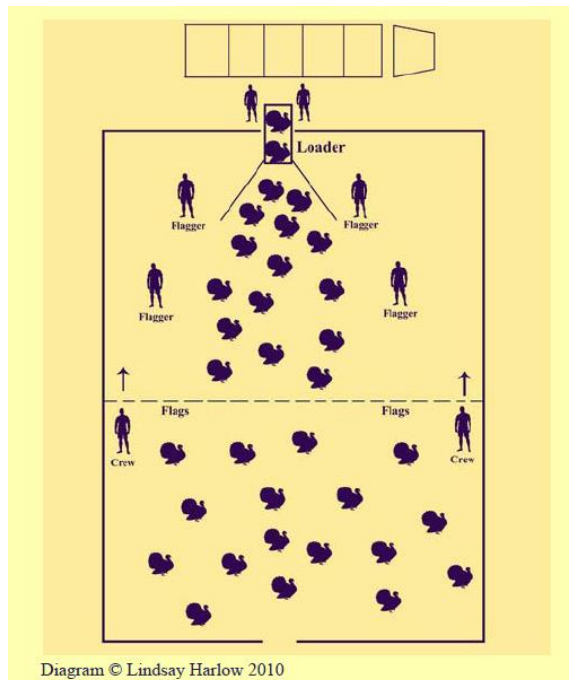
Q2E-Poultry-SFA-2023-007 [Catching of turkeys in a loose house](#)



Q2E-Poultry-SFA-2023-007: Catching of turkeys in a loose house

Question: What are the optimal methods of corralling and catching turkeys in a loose house that minimize stress and injury to the birds?

- As best practice to mitigate the effects of handling stress, birds should be herded quietly and carefully (in loose-housing systems, EFSA, 2022)





Q2E-Poultry-SFA-2023-007: Catching of turkeys in a loose house



Question: What are the best practices for manual handling and carrying an individual turkey for:


- i) placement into a cage for onward transport,
- ii) for placement into a containerized unit for gassing and
- iii) for placement into a cone for captive bolt euthanasia?

- In the case of **manual catching**, heavy turkeys are grasped with one hand by the two legs, from behind and lowered onto their breast. With the other hand, the shoulder of the wing furthest away is grasped to lift and carry the bird (EFSA 2022).
- For **crating**, birds are grasped by the base of the wings, with one hand and the contralateral leg (or both legs) with the other hand and pushed into the crate sliding the keel bone on the floor of the crate with the bird's head facing forward.

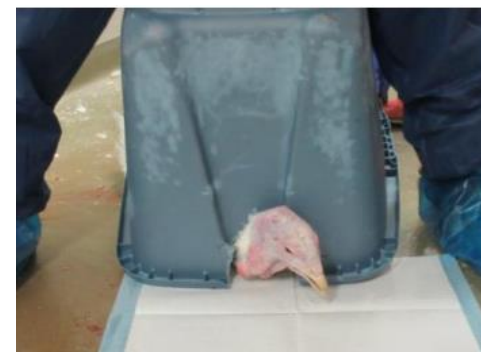




Q2E-Poultry-SFA-2023-007: Catching of turkeys in a loose house

 **Question:** What are the best/optimum turkey restraint devices available for the purposes of captive bolt euthanasia?

- When using a cone, the turkey should be placed head-down inside the cone to contain wing flapping, It is good practice to keep the head still by holding its beak.
- Alternatively, the birds can be restrained in a plastic bin, It must be placed upside down, over top of the body of the bird to contain wing flapping and leg movements. The turkey should be placed on the floor in a sternal recumbent position with its keel on a solid and flat surface.





Q2E infographic: : *Manual handling and carrying a turkey*

➤ In collaboration with La Chaire bien-être animal, the Centre developed an infographic issued from the Q2E answer: *Catching of turkeys in a loose house.*

➤ A graphic tool for operators in the field for improved turkey welfare !



MANUAL HANDLING AND CARRYING A TURKEY

BEFORE CATCHING

- Bin the lights to keep the birds calm.
- Avoid loud noises.
- All movements must be slow and steady.
- Wear dark coloured clothing.

HOW TO MANUALLY CATCH TURKEYS

For small or young turkeys ($\leq 1\text{kg}$)

- Place one hand on each side of the body, over the wings, with the legs hanging free.
- Gently shift the bird so that the breast is in the palm of one hand.

For turkeys above 1kg

- From behind, grasp with one hand by the two legs.
- Gently lower the turkey onto its breast.
- Grasp the shoulder of the wing furthest away to lift and carry the bird close to the body.

Turkeys (above 5kg) can also be directly grasped by the base of one wing with one hand and the contralateral shank with the other, lifted and carried close to the stockperson's body.

FOR CRATING

- Grasp the base of the wings and the contralateral leg (or both legs).
- Push into the crate sliding the keel bone on the floor of the crate with the bird's head facing forward.

Reference of the query : Q2E-Poultry-SFA-2023-007 - DOI : 10.5281/zenodo.11393615



PLACEMENT INTO A CONE FOR EUTHANASIA

For small or young turkeys

- Firmly clench the legs between your outstretched fingers.
- The wings can be controlled by the opposite hand or by holding the bird against the body, under your arm.

For turkeys above 1kg

- Place one hand on each side of the body, over the wings, with the legs hanging free.
- Gently shift the bird so that the breast is in the palm of one hand.
- From behind, grasp with one hand by the two legs.
- Gently lower the turkey onto its breast.
- Grasp the shoulder of the wing furthest away to lift and carry the bird close to the body.

To avoid having to lift heavy turkeys for stunning, they may be manually restrained on the ground by doing step 2.

WHAT ARE THE OPTIMUM TURKEY RESTRAINT DEVICES ?

The use of restraint devices allows that only **one stockperson is enough** to carry out the restraining and killing. These methods allow to **calm birds** and **reduce the risk of accidental injury** (for both the bird and stockperson) during killing.

USING A CONE

- Ensure that the cone is the right size for the bird.
- Reduce restraint time as much as possible by being ready to **stun/kill the bird immediately**.
- Maintain hand contact with the bird head to reduce stress.

USING A PLASTIC BIN (alternatively)

- Ensure that the bin is the right size for the bird.
- Previously cut a piece of the **right size** to avoid causing injury to the neck.
- The turkey should be placed on the floor in a sternal recumbent position with its keel on a solid and flat surface.

For any questions or suggestions regarding this document, please contact

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<https://www.eurcaw-poultry-sfa.eu/> <https://chaire-bea.vetagro-sup.fr/>

European Union Reference Centre for Animal Welfare Poultry SFA-4 In collaboration with La Chaire bien-être animal

Reference of the query : Q2E-Poultry-SFA-2023-007 - DOI : 10.5281/zenodo.11393615

Questions?



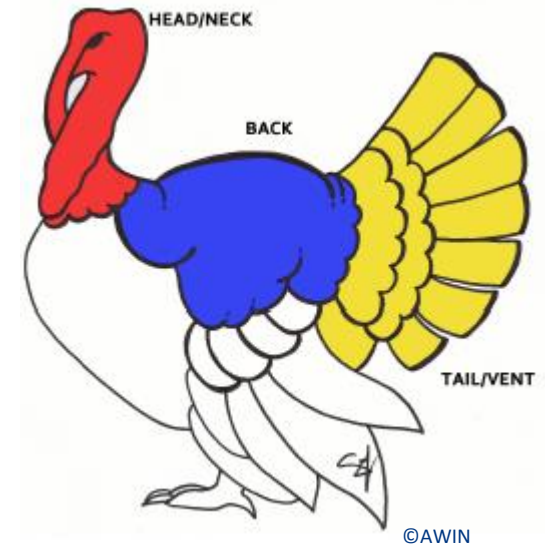


Injurious Pecking in Turkeys

2023

Content of the factsheet:

- How to distinguish between **injurious pecking** and gentle feather pecking
- Body parts targeted** depending on the type of pecking
- Method of assessment: **Transect method**
- Type of injuries to note during transect walk





European Union Reference Centre
for Animal Welfare *Poultry SFA*



Indicator Factsheet

Injurious pecking in turkeys



What is injurious pecking?

In contrast to gentle feather pecking which is a social and investigatory preening of a turkey to another turkey, typically directed at debris on the plumage (Savory, 1995; Dalton et al. 2018), injurious pecking can cause tissue damage and mortality (e.g. Dalton et al. 2013; Duggan et al. 2014; Dalton et al. 2018). In fattening turkeys, injurious pecking is one of the main welfare and health issues (e.g. Bartels et al. 2020). It includes head pecking - an aggressive act targeted at the head, neck and snood of another turkey (e.g. Savory, 1995)- and severe feather pecking - repeated, forceful pecking and pulling of the plumage and/or skin of another turkey, with or without feather removal. Injurious pecking often results in plumage and tissue damage to the victim (Savory, 1995). Whereas head pecking is considered an act of aggression, the causes of severe feather pecking are multi-factorial (stocking density, group size, light conditions, diet...) although it is mainly re-directed highly motivated ground foraging behaviour in a barren environment lacking appropriate stimuli (e.g. Sherwin et al. 1999; Dixon et al. 2008; Dalton et al. 2018). Depending on the type of pecking, the body area targeted will differ. Aggressive pecking will target the head and neck area, whereas severe feather pecking will target the back and tail area (Leishman et al. 2022).

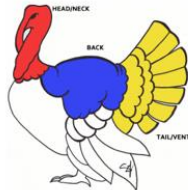


Figure 1: Body areas targeted by conspecifics in case of injurious pecking in turkeys (AWIN, 2015)

Legislation

There is no specific law protecting turkeys welfare. Their protection is therefore subject to the general indications dictated by the Council Directive 98/58/EC, which defines the minimum generic requirements for the protection of animals kept for farming purposes. Council Directive 98/58/EC sets down general standards. Article 3 states that:

"Member States shall make provision to ensure that the owners or keepers take all reasonable steps to ensure the welfare of animals under their care and to ensure that those animals are not caused any unnecessary pain, suffering or injury."

Method of assessment

The number of turkeys victims of injurious pecking in a flock could be assessed with the transect method. The birds are visually observed while the inspector slowly walks through the barn along longitudinal predetermined bands (transects) of equal width according to the house width (AWIN, 2015; Marchewka et al. 2015). The number of turkeys observed showing pecking injuries is then converted into a percentage of the flock. Vigilance is required with contiguous transects to avoid double counting the same birds.



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Indicator Factsheet

Injurious pecking in turkeys

Aggressive pecking can be assessed by counting the number of turkeys with head and neck pecking injuries (figure 2); severe feather pecking can be assessed by counting the number of turkeys with back and tail pecking injuries (figures 3 and 4). The inspector may also count all the birds gathering both types of injurious pecking. The prevalence of turkeys suffering injurious pecking will be calculated as follow: number of birds showing one or more lesions described divided by the total number of birds on the day of the visit.



Figure 2:
Head and neck wounds: visible signs of injuries on the head area related to fresh or older wounds, including the head, beak, snood and neck (in red on Figure 1) (AWIN, 2015; Marchewka et al. 2015).



Figure 3:
Back wounds: visible fresh or older wounds, including bleeding wounds, between the end of the neck and the beginning of the tail (in blue on Figure 1) (AWIN, 2015). Wings' wounds can also be included (Marchewka et al. 2015).



Figure 4:
Tail wounds: visible fresh, older or bleeding wounds on the tail area, or on its sides, the vent is included when it is visible (in yellow on Figure 1) (AWIN, 2015; Marchewka et al. 2015).

AWIN 2015. AWIN welfare assessment protocol for turkeys.

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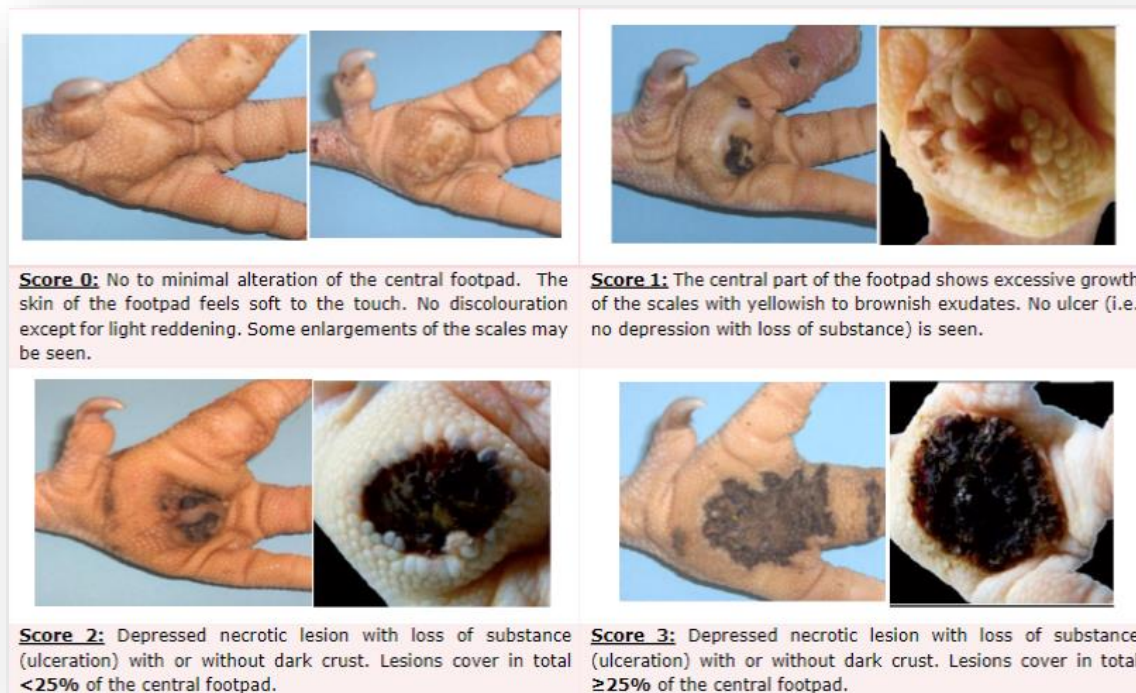


Footpad dermatitis in Turkeys

2024

Content of the factsheet:

- Definition of FPD and **main risk factors**
- New scoring system** developed by EURCAW-Poultry-SFA





IFS-Poultry-SFA-2024-01-EN
Version 1 – August 2024
<https://doi.org/>



On-farm assessment of footpad dermatitis in turkeys



Definition and risk factors

Footpad dermatitis (FPD) is a contact dermatitis of the plantar surface of birds' feet which can affect the skin but also subjacent tissue and show different severity grades (Stracke et al. 2021) (Figure 1). FPD is associated with abnormalities of the footpad, such as redness, swelling, hyperkeratosis, tissue necrosis, or ulcers. Painful to the birds and with a high prevalence in flocks, footpad dermatitis is a common welfare issue in commercially reared turkeys (Allain et al. 2013; Weber Wyneken et al., 2015).

There are several factors linked with FPD such as the age, sex as well as environmental and management factors. Wet, soiled litter is the main risk factor for FPD (Mayne et al., 2007; Krautwald-Junghanns et al., 2011; Wu and Hocking, 2011; Weber Wyneken et al., 2015). Hence, the litter moisture control is a main way to decrease the severity and prevalence of FPD in turkey flocks. Attention should be paid to drinker design and maintenance (in order to avoid leaking), the choice of (absorbent) litter materials, and the management of litter quality (removal of soiled litter, addition of fresh dry litter), as well as to relative air humidity and ventilation efficiency. Regarding the age of the birds, although the severity of skin lesions is higher in older birds, notably due to the more degraded litter quality as the birds grow, a significant number of turkeys may show footpad surface alterations as early as 6 weeks of age (Krautwald-Junghanns et al., 2011). Mayne et al. (2006) even showed histopathological changes associated with FPD on footpads that show no visible skin alterations, from three weeks of age. Turkey hens may experience more footpad injuries and with greater severity compared to turkey toms (Krautwald-Junghanns et al., 2011). This may be due to the higher

density of hens per unit area (hens being lighter, their numbers are higher than those of toms on the same surface) and the amount of faeces being more numerous and downgrading the litter.



Figure 1 - Footpad dermatitis in a turkey.

Methods of assessment

Several FPD scoring systems exist in turkeys, based on the surface of the foot affected and the nature of the lesions (Mayne et al., 2006; Mayne et al., 2007; Hocking et al., 2008; Allain et al., 2013). To perform the scoring of FPD in turkeys on farm, each assessed turkey should be caught (EURCAW-Poultry-SFA, 2024), gently held and the surface of the footpad examined. The adhering litter and excreta should be removed carefully, if necessary, with the help of water and a soft brush, not to confuse faecal staining with necrotic areas. Both bird feet should be scored and the most affected foot kept for final evaluation of each individual (Toppel et al., 2019). The scoring of each footpad is done according to the description in Figure 2, which is a scoring system developed by EURCAW-Poultry-SFA and adapted from Hocking et al. (2008), Michel et al. (2012), Allain et al. (2013) and Stracke et al. (2021).

Indicator Factsheet

On-farm assessment of footpad dermatitis in turkeys

The first stage of FPD is the hyperkeratosis (excessive growth of the scales on the footpad) corresponding to the score 1. The necrosis of the skin leads to a depression in the skin (ulceration) which is painful to

the birds. This corresponds to scores 2 and 3. The dark coloration of the skin is due to necrosis and/or adherent crust (Michel et al. 2012; Allain et al. 2013).



Score 0: No to minimal alteration of the central footpad. The skin of the footpad feels soft to the touch. No discoloration except for light reddening. Some enlargements of the scales may be seen.



Score 1: The central part of the footpad shows excessive growth of the scales with yellowish to brownish exudates. No ulcer (i.e. no depression with loss of substance) is seen.



Score 2: Depressed necrotic lesion with loss of substance (ulceration) with or without dark crust. Lesions cover in total <25% of the central footpad.



Score 3: Depressed necrotic lesion with loss of substance (ulceration) with or without dark crust. Lesions cover in total ≥25% of the central footpad.

Figure 2: Scoring system for footpad dermatitis in turkeys adapted from Hocking et al. (2008), Michel et al. (2012), Allain et al. (2013) and Stracke et al. (2021). Photos from Michel et al. (2012) and Allain et al. (2013).

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The assessment of plumage damage and emaciation at slaughterhouse in laying hens

2024

Content of the factsheet:

- ❑ Two animal-based indicators allowing to **monitor on-farm welfare** of laying hens even when assessed at slaughterhouse
- ❑ Definition and welfare impact of **plumage damage** and **emaciation**
- ❑ Two methods of assessment on the slaughterline:
 - Emaciation = Keel bone prominence: **ventral view**
 - Plumage damage: **dorsal view** before scalding



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The assessment of plumage damage at slaughterhouse in laying hens



Definitions and welfare impact

Several animal-based indicators can be collected in slaughterhouses to monitor the level of welfare of laying hens on farm (EFSA, 2023). Among those cited in the EFSA report (2023) are plumage damage and emaciation which described very well the body condition of end of lay hens. The emaciation (extreme thinness, insufficient body condition) is an indicator of decrease of welfare due to prolonged hunger, disease or exhaustion. Emaciation is one of the reasons that will lead to carcasses condemnations at slaughterhouse. Emaciation can be assessed by estimating keel bone prominence (Welfare Quality, 2019). Whereas it is normal for lean types of birds, such as laying hens, to have some keel bone prominence and some visible breast muscles, emaciated birds have a very pronounced and prominent keel bone with almost no remaining muscle tissue.

The plumage damage is defined as the presence of areas with feather loss (denuded) and/or damage (EFSA, 2023). Plumage damage can be related to inadequate facilities (environment elements hurting or in contact with the bird) or from severe feather pecking from conspecifics. Severe feather pecking and its damages are a general welfare problem in laying hen flocks because the removal of feathers is painful and stressful for the animals (EURCAW-Poultry-SFA, 2022). It also increases the risk of poor thermoregulation, skin injuries and secondary infections, diseases, and eventually mortality. Severe feather pecking increase when birds are in living conditions where they have difficulty coping with the environmental stressors (related to feeding and lack of opportunities for foraging behaviour (Rodenburg et al., 2013)). Damages to the feathers on the back and rump usually indicate feather pecking and even if feather loss to the belly can be seen

The assessment of plumage damage at slaughterhouse in laying hens

Methods of assessment - Emaciation

While plumage damage can be assessed from a dorsal view of the birds, evaluating emaciation is done from a ventral view on the slaughter line.

The Welfare Quality Protocol (2019) includes the assessment of keel bone prominence. This method has been validated in slaughterhouse conditions since for now it is mainly used in observation. Thus, this method of assessment still need to be tested and validated at slaughterhouse. The assessment is done from a ventral view, before or after scalding,

- 0 = normal (smooth to moderate breast muscle contour with keel)
- 1 = slightly to moderate prominent keel, but does not feel sharp, flat breast muscle
- 2 = severely prominent keel, depressed contour to breast muscle

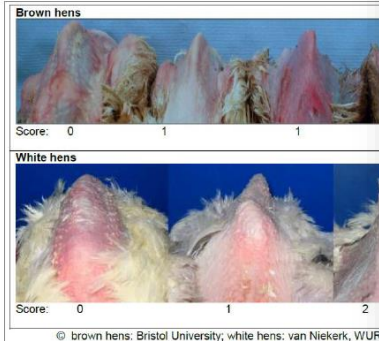


Figure 2: Notation scores of keel bone prominence in brown and white hens according to the Welfare Quality Protocol (2019)

The assessment of plumage damage at slaughterhouse in laying hens

Methods of assessment - Plumage damage

Although well used during on farm assessment, plumage damage could be assessed at the slaughter line **before scalding**, from a dorsal view of the birds (EFSA, 2023). This method of assessment still need to be carried out based on on-farm assessment protocols, such as the Welfare Quality Protocol (2019). However, to adapt this notation scale to the slaughterhouse conditions, a protocol developed to assess several indicators on farm including feather damage and emaciation was used. The vent could also be scored if visible. The difference in feathering (EFSA, 2023). This scoring scale could be used

- 0: No/minimal feather loss. No bare skin visible, no or slight wear, only slight feather loss. Moderate wear, damaged feathers or 2 or more cm maximum dimension.
- 2: Moderate/severe feather loss. Bare skin visible \geq 5 cm maximum dimension.



Figure 3: Laying hens with feather loss scored 2 on the slaughter line (ROCHAS)

The assessment of plumage damage and emaciation at slaughterhouse in laying hens

Methods of assessment - Plumage damage



Figure 4: Scores of feather loss according to the Assurance Protocol (Main et al. 2012) (©IRTA)

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2023-2024 WP2, D2.5, D13 - 4/4

<https://zenodo.org/records/11091655>



Scientific study on the validity, reliability and repeatability of two visual scoring methods of assessment of the litter quality





Protocol

Results

Conclusions

➤ Validation of the *Welfare Quality*® and the *Classyfarm* (Vinco et al. 2020) litter assessment protocols and their reliability and repeatability

Score	Friability Description	Wetness Description
1	Completely caked	Wet litter, water is appearing by pressure on the litter of the total area
2	80-90 % area caked	Wet litter, water is appearing by pressure on the litter beneath drinkers
3	70-80 % area caked	Wet litter, no water is appearing by pressure on the litter
4	60-70 % area caked	Wet litter dark coloured. Litter can be pressed into ball-shape
5	50-60 % area caked	Wet litter, dark coloured. Larger ridges*** beneath drinkers
6	40 % area caked	Almost dry litter, small ridges** beneath drinkers. Litter between drinkers and feeders is still friable
7	30 % area caked	Almost dry litter, dark coloured beneath drinkers and in other areas light coloured, ridge formation just started* beneath drinkers
8	10 % area caked	Almost dry litter, light coloured, no ridges beneath drinkers
9	Friable litter, small caked areas	Dry litter, light coloured
10	Friable litter, no caked areas	Very dry litter (only observed at start)

Title	Litter quality
Scope	Resource- and management-based measure: Broiler chicken
Sample size	Sample size according to § 5.1A.5
Method description	<p>Assess the quality of the bedding in the house according to the parameters described below. Poor litter quality may indicate difficulties in managing the litter which may reflect in skin and foot lesions related to poor litter quality.</p> <p><u>General comment on sampling and litter thickness:</u> Look at a number of locations in the house (minimum 4, maximum 6) (i.e. under drinkers and feeders, along the edges of the house and close to the doorways) to check whether there is a big variation in litter thickness across the house. If so, can you detect areas of litter which differ in appearance, or is the litter very uniform? If areas are different, then ensure that you sample using the method described from these areas of differing litter to reflect overall variability in the house.</p>
Classification	<p>0 – Completely dry and flaky, i.e. moves easily with the foot</p> <p>1 – Dry but not easy to move with foot</p> <p>2 – Leaves imprint of foot and will form a ball if compacted, but ball does not stay together well</p> <p>3 – Sticks to boots and sticks readily in a ball if compacted</p> <p>4 – Sticks to boots once the cap or compacted crust is broken</p>

- Same litter samples were visually assessed two times in a row in broilers pens by several assessors* and, then, collected to assess the dry matter (twice, one week apart)



*4 assessors present during both weeks + 1 assessor present the first week + 2 assessors present the second week



Protocol

Results

Conclusions

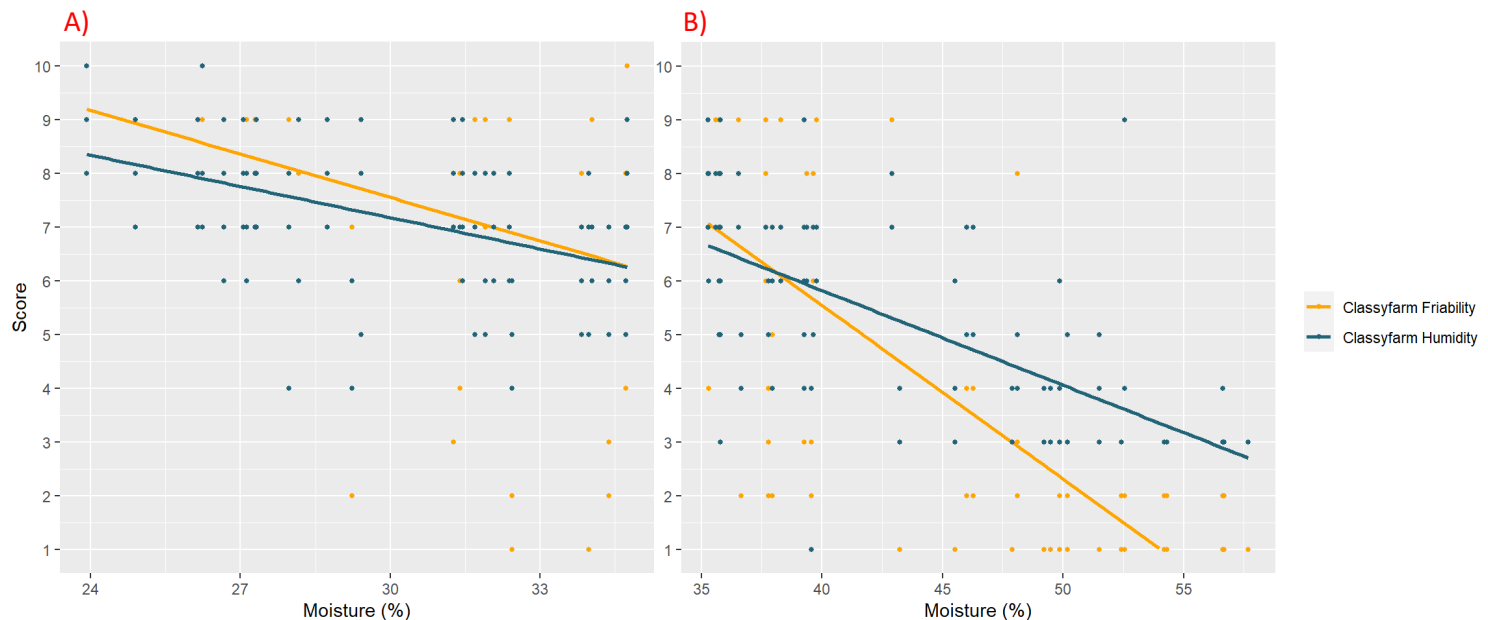
- Correlations between dry matter and visual scoring → **validation** of the indicators (visual assessment)
- Comparison between assessors → **reliability**
- Comparison of the assessments of the same assessor → **repeatability**
- Variability of results below and above 35% of litter moisture → **results analysed according to the level of moisture**





Validity: correlations between scoring scales and litter moisture

- Moderate correlations between scoring scales and litter moisture below 35% of litter moisture
- Strong correlations above 35% of litter moisture

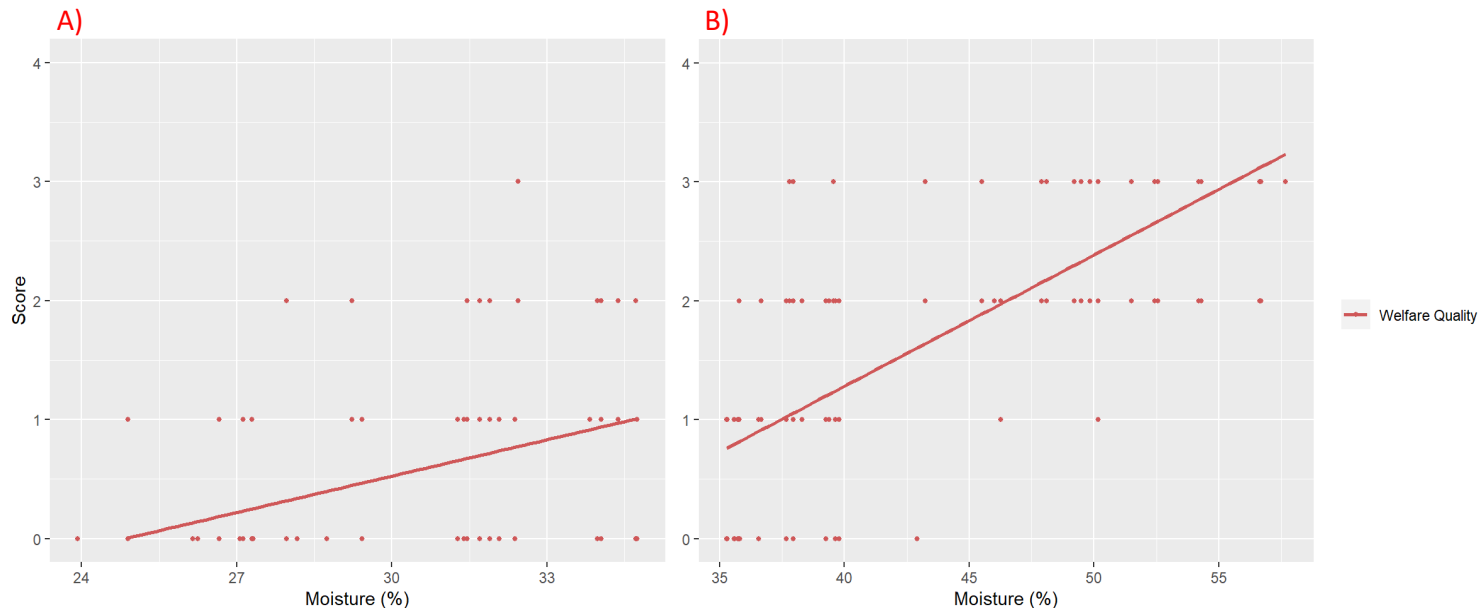


Scatter plot and correlations between Classyfarm scoring scales and litter moisture when the litter moisture is **below 35% (A)** and **above 35% (B)** (all 4 assessors considered). Classyfarm ranges from 1 to 10, 10 being very dry litter.



Validity: correlations between scoring scales and litter moisture

- Moderate correlations between scoring scales and litter moisture below 35% of litter moisture
- Strong correlations above 35% of litter moisture



Scatter plot and correlations between Welfare Quality scoring scale and litter moisture when the litter moisture is **below 35% (A)** and **above 35% (B)** (all 4 assessors considered) Welfare Quality scoring ranges from 0 to 4, 0 being very dry litter.



Conclusions

- Visual scoring systems are best suited for assessing litter with a **moisture level above 35%**
- All three scoring scales exhibited **moderate validity at moisture levels below 35%** and **strong validity above 35%**
- The **Classyfarm Friability** score was the **most reliable** scoring scale regardless of litter moisture
- Regarding **intra-assessor repeatability**, the **Classyfarm Friability and Welfare Quality scores** outperformed the **Classyfarm Humidity** score

Recommendations:

- **Prioritize the use of the Classyfarm Friability score, particularly when comparing scores from multiple assessors**
- **Exercise caution when visually assessing lightly degraded litter**

Questions?



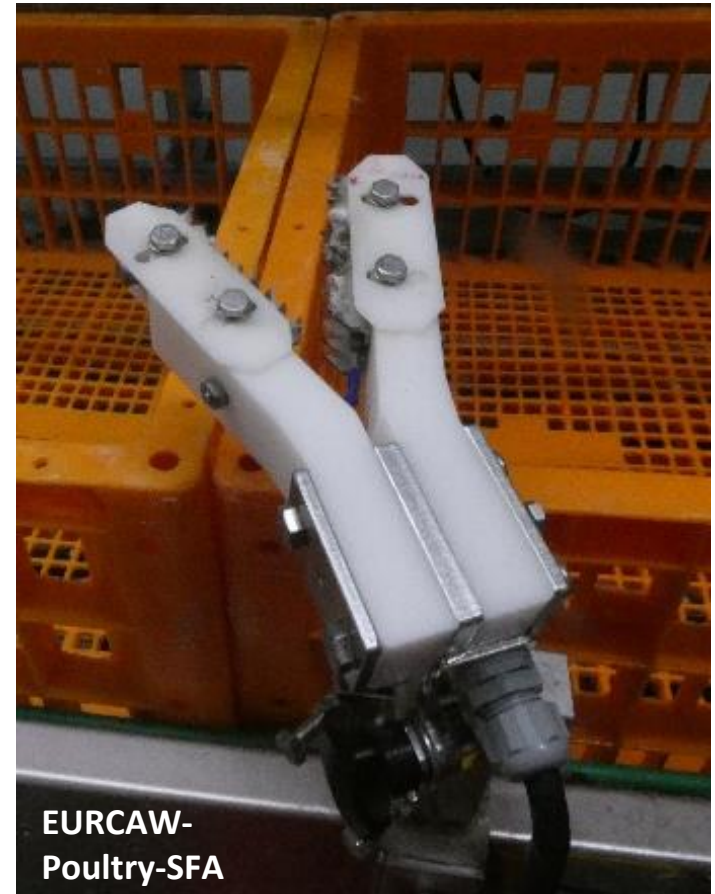


Scientific study in commercial slaughterhouses of rabbits





- **62 million** were slaughtered in the EU in 2022 of which **Spain, France and Italy** accounted for **88% of the total**
- **Legislation** did not lay down **minimum key parameters** for rabbits (current, frequency, voltage, exposure time, stun-to-stick interval)
- **Wide variability on the recommended key parameters** found in national guidelines
- **Heterogeneity in the indicators chosen** by OV's to assess the state of consciousness in rabbits





General:

Identify a refined list of indicators that can be used to assess the state of consciousness of head-only electrical stunned rabbits in commercial slaughterhouses to ensure consistency of controls and to evaluate the efficiency of induction of unconsciousness

Specific:

1. Assess the **inter-observer repeatability** of the most valid and feasible indicators of consciousness according to the EFSA (2020)
2. Elucidate the **association** among the indicators
3. Assess **efficiency of stunning**
4. Find **key factors** that contribute to effective stunning





SH	Speed, rabbits/h	Wetting heads	Stunners, n	Stun-to-stick interval(s), s	Bleeding method	Bleeding cut	Operators bleeding, n
1	800	No	2	10 and NA	M	Lateral	1
2	1500	NA	2	11 and NA	M	NA	2
3	1600	No	1	22	M	Lateral	1
4	2600	No	3	15, 10 and 8	M	Lateral	1
5	2100	No	4	36, 30, 24 and 19	M	Ventral	2
6	700	No	1	15	M	Ventral	1
7	700	Yes	1	2	M	Lateral	1
8	600	No	1	3	M	Lateral	1
9	1850	Yes	3	18, 12 and 7	M	Ventral	1
10	1400	Yes	3	<1	A	Ventral	1
11	700	NA	1	3	M	Ventral	1
12	800	Yes	1	16	M	Lateral	1
13	1,700	No	3	25, 19 and 6	M	Ventral	1
14	1,920	Yes	3	33, 24 and 17	M	NA	1
15	3200	Yes	4	22, 20, 18 and 13	M	Lateral	2
16	3600	No	3	20, 13 and 5	M	Ventral	2

*Bleeding method: M (manually); A (automatically); SH: slaughterhouse; NA: data not available

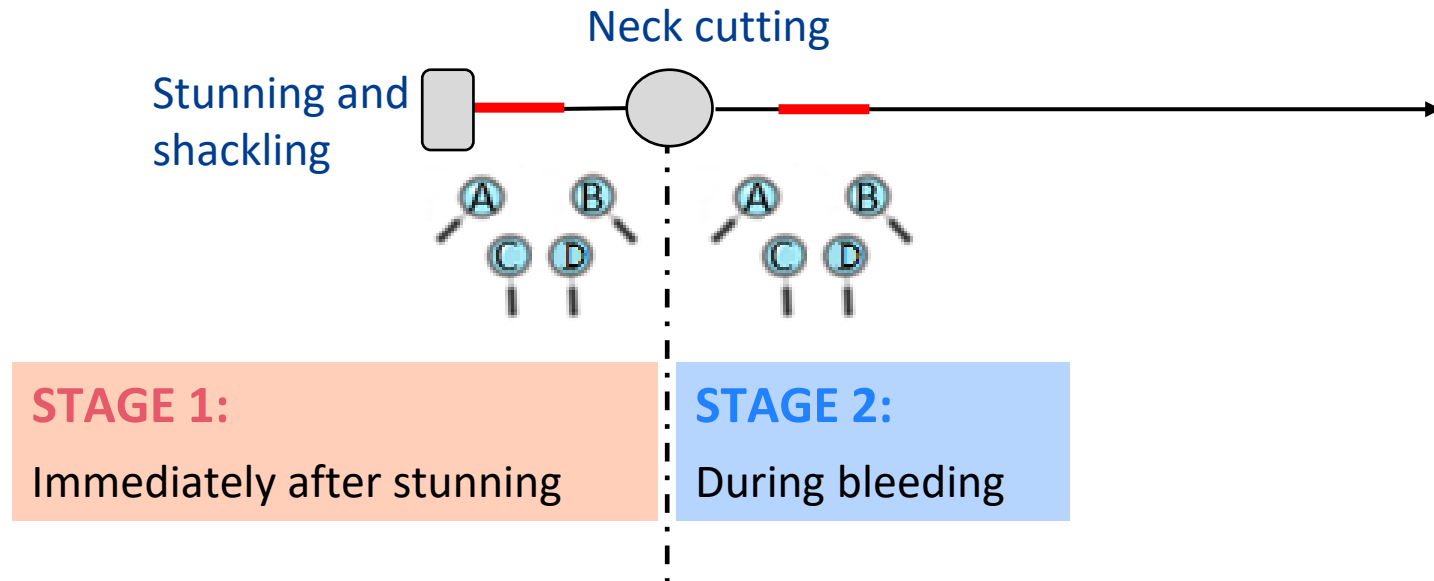


❑ Observers:

16 slaughterhouses, 38 batches, 11,540 rabbits

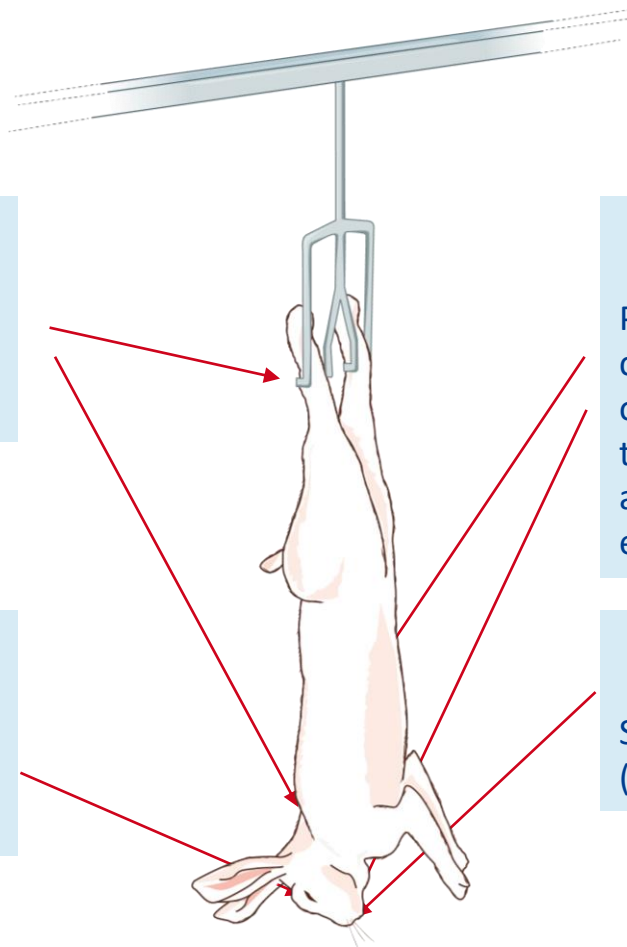
4 observers 

❑ Sample assessment: Position and stages during the assessment of indicators





STAGE 1: IMMEDIATELY AFTER STUNNING



Absence of TONIC-CLONIC SEIZURE

General loss of muscle tone and a completely relaxed and flaccid body, with no neck tension.

Presence of SPONTANEOUS BLINKING

Rabbit opens/closes eyelid on its own (fast or slow) without stimulation.

Presence of BREATHING

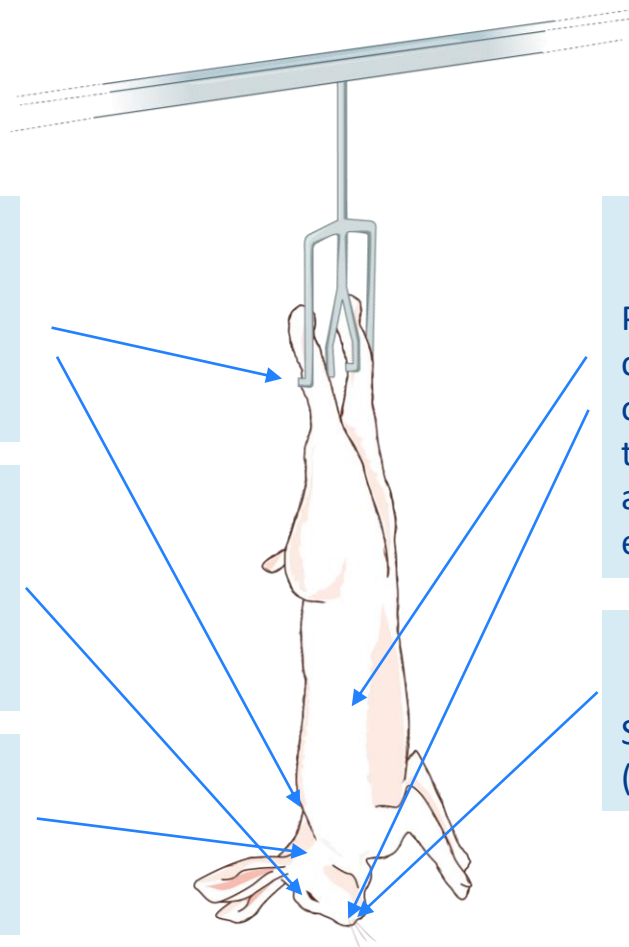
Presence of rhythmic breathing considered as a minimum of two openings of the mouth and thoracic or abdominal muscles associated to inhalation and expiration with similar cadence.

Presence of VOCALISATIONS

Single or repeated shrieking (screaming).



STAGE 2: DURING BLEEDING



Absence of TONIC-CLONIC SEIZURE

General loss of muscle tone and a completely relaxed and flaccid body, with no neck tension.

Presence of SPONTANEOUS BLINKING

Rabbit opens/closes eyelid on its own (fast or slow) without stimulation.

Presence of RIGHTING REFLEX

Attempt to regain posture and/or raise the head.

Presence of BREATHING

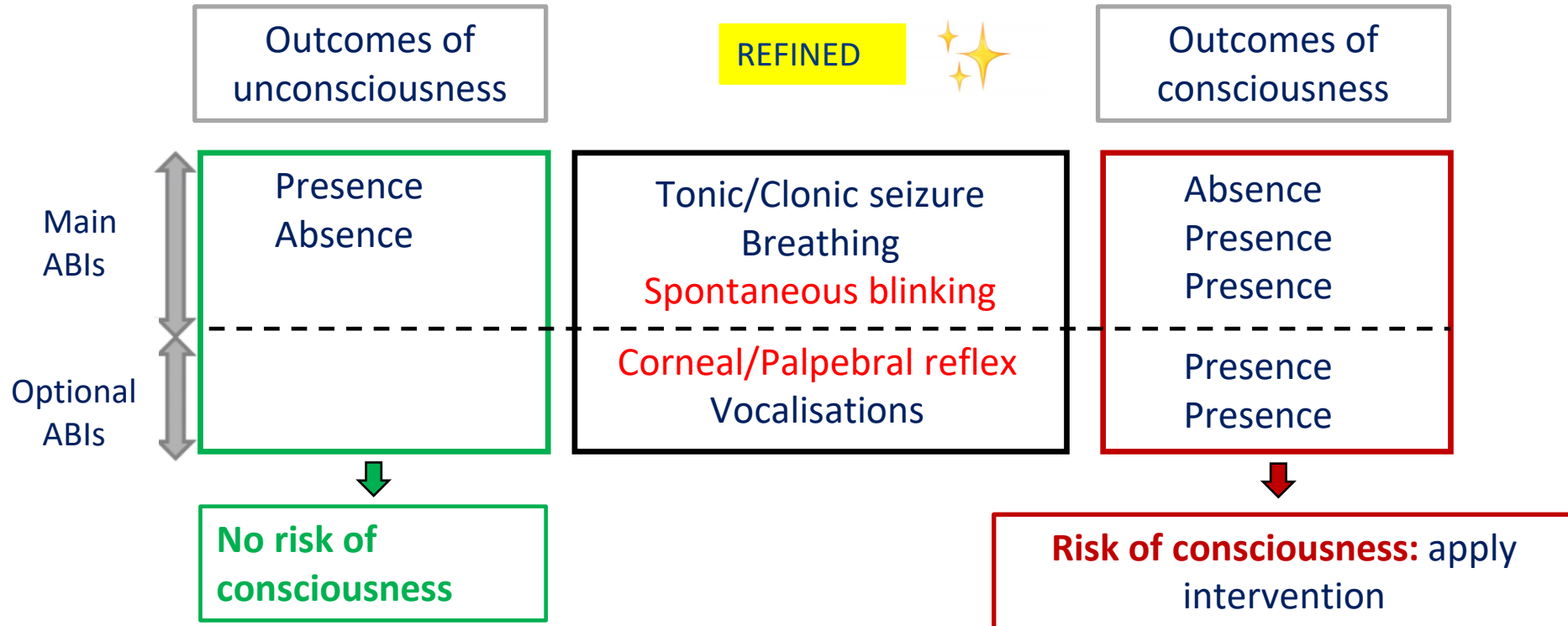
Presence of rhythmic breathing considered as a minimum of two openings of the mouth and thoracic or abdominal muscles associated to inhalation and expiration with similar cadence.

Presence of VOCALISATIONS

Single or repeated shrieking (screaming).

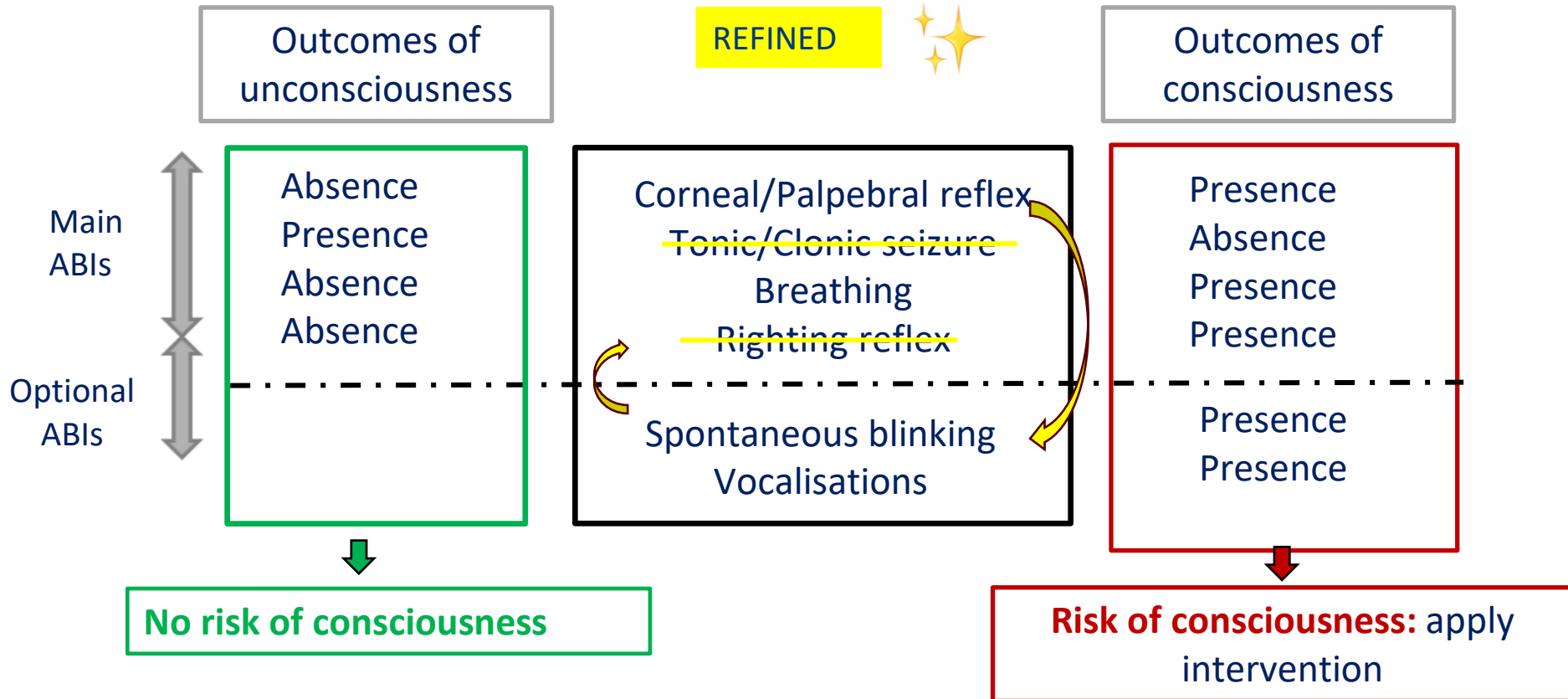
Main findings: Relevant indicators

STAGE 1: IMMEDIATELY AFTER STUNNING





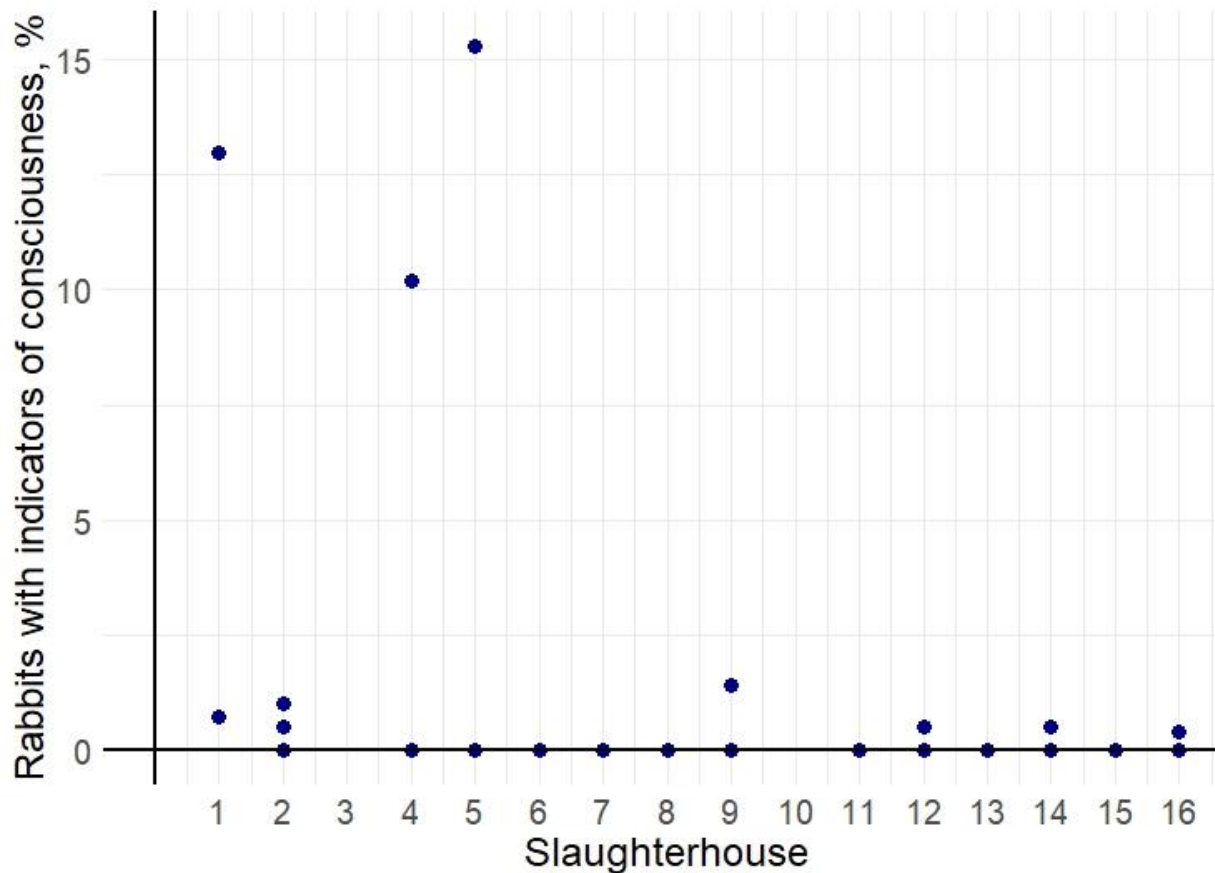
STAGE 2: DURING BLEEDING



Absence of tonic-clonic seizure at this stage does not imply consciousness
 Righting reflex only when the rabbit breath or blink
 Often confused with preagonal muscle movements that can occur in brain-dead animals



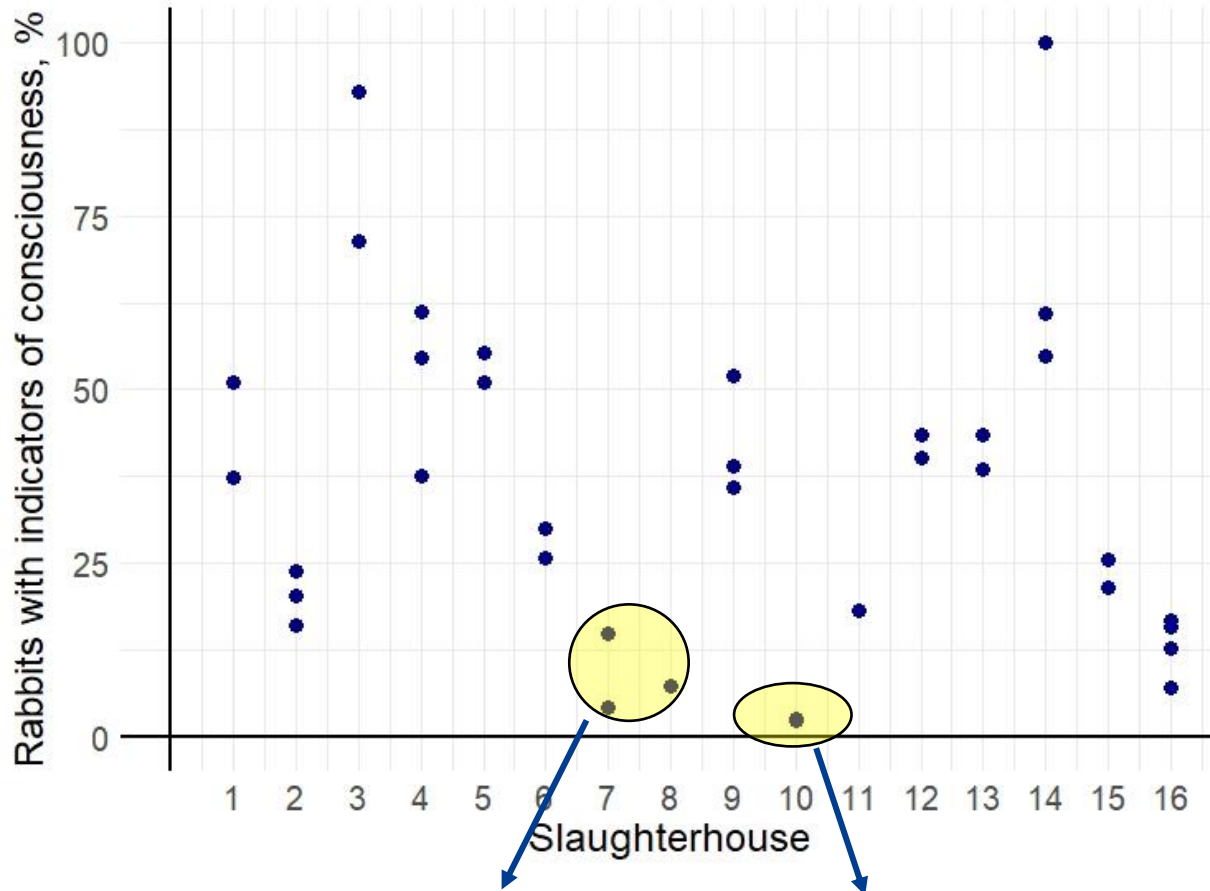
STAGE 1: IMMEDIATELY AFTER STUNNING



Efficient induction to unconsciousness was observed in most of the batches assessed (15 out of 25 batches)



STAGE 2: DURING BLEEDING



A variable prevalence of rabbits were progressively recovering consciousness before death in all batches from all SHs

Stun-to-stick interval: 2 - 3s

Stun-to-stick interval: < 1s
Prevalence: 2.3 and 2.7%

Summary

1. There is considerable variability in slaughterhouse designs, slaughter capacities, rabbit management practices, types of head-only electrical stunning devices used, key parameters applied, stun-to-stick intervals, and type of neck cuts used.
2. A refined and validated ABIs with good level of repeatability have been identified so that can be used for the assessment of the state of consciousness in rabbit commercial slaughterhouses.
3. Effective induction of unconsciousness occurred in nearly all rabbits. **BUT**, indicators of consciousness often reappear after neck-cutting in a variable but significant proportion of rabbits in **all** slaughterhouses. Rabbits with indicators are at high risk of experiencing pain, distress and suffering.
4. The longer the stun-to-stick interval, the higher the risk of rabbits recovering the state of consciousness.

WEBINAR:




"Welfare assessment during electrical stunning in rabbits"

November 12th, 2024


From 10:00 to 12:00 (UTC+2, CEST)

FACTSHEET:






European Union Reference Centre
for Animal Welfare Poultry SFA



Indicator Factsheet

How to assess the state of consciousness in broilers (waterbath stunning)



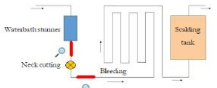
Introduction

- Waterbath stunning (WBS) is intended to induce unconsciousness until death that occurs due to bleeding.
- At WBS is not always effective, it is required to monitor that birds are unconscious at the exit of the WBS and do not regain consciousness before death.
- This factsheet explains the method to check the state of consciousness of birds with the most feasible, separable and valid animal-based indicator (ABI), regardless of line speed and the method for sample size calculation.

Method for the assessment

Place for the assessment: At two different stages:

- Stage 1: From the exit of the WBS and before bleeding to assess the effective stunning of the birds.
- Stage 2: During bleeding, to assess that unconscious birds do not recover consciousness before death.



- Position: if possible, check the birds in ventral position.
- ABIs: use all those listed in Table 1 simultaneously on each bird according to the stage of observation. Connected videos linked to QR codes.


Any bird showing at least one outcome of consciousness should be considered as conscious or recovering consciousness.

Sampling procedure:


Stage 1:

- Visually follow animals individually during 2-3 s.
- Consciousness occurs if the birds shows at least one outcome of consciousness.


Breathing



Wing flapping




Vocalization




Stage 2:

- Place at a distance from neck cutting where you detect bodies that begin to show outcomes of consciousness (e.g., approx. 10 s after caesoids section).
- Then, visually follow animals individually during 4-5 s.
- Consciousness occurs if the birds shows at least one outcome of consciousness.

Breathing



Wing flapping



Head shaking




Figure adapted from European Commission (2018)

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Questions?





- Concrete examples of good practices may inspire poultry and rabbit producers in the European Union to take up similar practices or implement related initiatives.
- Since 2021, EURCAW-Poultry-SFA searched for and identified farms and slaughterhouses showing good practices related to the Centre's 5 priority areas on the welfare of poultry and rabbits:
 - **Broiler chickens on farm**
 - **Laying hens in alternative housing systems**
 - **Stunning and killing**
 - **Rabbits on farm, with a focus on alternative housing systems**
 - **Turkeys on farm and during transport**



- During the past year, members of the consortium visited a selection of good practices.
- The knowledge gained during the visits was used for the final decision on which examples of good practices were approved by the Centre.





2023:

- Design and management of covered verandas for optimal use
- Elevated pen system for breeding and growing rabbits
- An example of inspections of compliance with the transport regulation (COUNCIL REGULATION (EC) No. 1/2005)

2024:

- Mobile cart with head only electric stunning device, for on farm culling and carcass collection
- Outdoor rearing of rabbits
- Early litter access for pullets housed in aviary systems
- Preventing heat stress in layer systems with covered veranda and outdoor access
- Automatic assessment of Footpad Dermatitis (FPD)

Design and management of covered verandas for optimal use



European Union Reference Centre
for Animal Welfare Poultry SFA



Best practice Factsheet

Design and management of covered verandas for optimal use



What is a covered veranda?

A covered veranda, also termed winter garden, is an enclosed and roofed area with a littered concrete floor, which is accessible via **popholes** from the poultry barn. It is uninsulated and therefore has a variable climate. The solid roof protects against rain, but at least one side usually consists of netting, allowing natural light and fresh air into the veranda. Some systems with a covered veranda also have an outdoor range, which can be accessed from the veranda.

Benefits of having access to a covered veranda

The covered veranda provides the poultry with outdoor climatic conditions and more choice in their environment, while still protecting against predators, wild birds and extreme weather conditions. A veranda provides extra space and conditions that facilitate active behaviour, such as foraging, locomotion, exploratory and dustbathing behaviour. Behavioural needs are better accommodated, which may reduce the risk of developing injurious pecking, i.e., feather pecking and cannibalism. Use of the veranda also effectively reduces the indoor stocking density. Since the roof and netting protects against contact with wild birds and their droppings, the risk of disease spreading from wild birds (e.g., avian influenza) is considerably reduced compared to systems with access to an outdoor range.



Broiler chickens dustbathing in direct sunlight in a covered veranda.

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Providing enrichment in the veranda

A veranda will be frequented more if enriched. The floor should be littered (e.g., placing bales that the birds have to spread themselves), preferably with a different substrate than used indoors. Provision of litter and enrichments such as bales, foraging materials and other pecking substrates will encourage foraging and exploration. A veranda is an ideal location for the provision of roughage, as the roughage will then be protected against contact with wild birds and their droppings, and moist roughage will not compromise the litter quality indoors.



Laying hens in a veranda enriched with birch branches, A-frame perches and litter.

Access from an early age

Veranda access can be offered as early as when the birds are 14 days old, if they have easy access to the barn to allow for **behavioural** thermoregulation. Outdoor climatic conditions (i.e., temperature, humidity and wind) are to be taken into account as well as the feather coverage of the birds. Early access to verandas or outdoor ranges promotes later use.

Design and management of covered verandas for optimal use

How to best design the veranda

- A minimum size of 10-20% of the indoor usable floor area is recommended.
- A minimum height of 2 m allows stockpersons to inspect the veranda. Some farmers warn against making the height too large, as a low height will make the birds feel safer.
- The width of the veranda should be a minimum of 3 m, but preferably 4-5 m.
- A concrete floor can be cleaned between flocks. Cast the floor such that a gradient is created away from the barn.
- Depending on the local climate, use both non-transparent and transparent tiles in the roof to create both bright and darker areas in the veranda.
- Use strong fabric-netting with a small mesh size, which helps prevent rain from entering even on windy days.



Veranda with fabric netting with small mesh size at sides and roof tiles alternating in transparency.

Popholes between the indoor area and veranda

- Particularly for broilers and young birds, it is important to have the pophole and veranda level with the floor indoors. For layers, a maximum of 25 cm from ground level is advised.
- Good litter condition near the popholes will promote pophole use.
- The distance from anywhere in the barn to the popholes should be as short as possible – maximum 25 m.
- Greater width of popholes improves use – at least 1 m per 1000 birds or 2 m per 100 m² of the barn.

- Adjust the ventilation system if a covered veranda is added to an existing indoor barn and consider the veranda in the ventilation plan when building a new barn.
- Close the popholes during the night to efficiently ventilate if the ventilation system cannot run when popholes are open.



Pophole where the veranda floor is level with the floor inside the barn.

Covered veranda – a smooth transition

In systems with an outdoor range, a covered veranda functions as a smooth transition between the dark and climate-stable indoor barn and the bright and climate-variable outdoor range, reducing the fear-provoking effect of venturing outdoors. A veranda can therefore act as a transitional environment facilitating a better use of the outdoor range.

A veranda can also **minimise** frustration for birds if outdoor range access is denied due to disease risk (e.g., avian influenza) or adverse weather. Birds are usually still allowed into the covered veranda, ensuring that they stay familiar with the outdoor climate, so they are prepared when access to the outdoor range is provided again.



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Elevated pen system for breeding and growing rabbits



European Union Reference Centre for Animal Welfare Poultry SFA

Best practice Factsheet

Elevated pen system for breeding and growing rabbits



Introduction

In October 2023, the EURCAW Poultry-SFA visited an intensive rabbit farm with elevated pen system. The farm is part of an integrated company which is driving the adoption of such system, along with increased technological innovation, to improve the welfare of rabbits. In particular, farmers who decide to invest their equipment by acquiring these new technologies can be included in the company's labelling program that allows them to have economic benefits based on welfare and production parameters. The farm houses about 2,000 breeding rabbits and 8,000 growing rabbits. The animals are raised in two separate modular sheds (Figure 1), which are used alternately for breeding and growing phases (dual barn); this allows for an all-in-all-out approach and to respect a sanitary empty period of about one week between flocks of growing rabbits. Before the entrance to the barn, it is equipped to wear protective clothing (coveralls, footwear) to disinfect the footwear (Figure 1).



Figure 1. Outside the barn and disinfection procedure before entrance

General characteristics of the farm

- Natural light is provided.
- Forced ventilation equipped with a cooling system is provided (Figure 2 and 3).
- Laminar flow filtration for monitoring gases (CO₂ and NH₃), temperature and humidity are positioned in each barn (Figure 4).
- Ventilation is set according to the weight and number of the animals; its intensity is adjusted in order to avoid drafts and to allow ventilation of even the lower areas of the cages at the same time. The temperature is set to be maintained around 21-23 degrees.



Figure 3. Forced ventilation fans



Figure 4. Air quality and ventilation parameter control panel

- When temperatures reach or exceed 30 degrees, the cooling system is activated to mitigate heat stress.
- The feeding system is automatic, and food consumption is monitored daily. Animal growth is monitored through an automatic weighing system in some of the pens that also allows for adjustment of ventilation (calculated in kg meat/m²/h) and the amount and type of food. Each rabbit category has its own specific type of food.
- An alarm system activates, alerting the farmer via cell phone, in case the automatic system (i.e., the ventilation system or the feeding system) do not function properly. In the case of lack of general electric supply, a back-up electrical generator is available. Most of the energy comes from the solar panels placed on the roof of the farm.
- Mortality is around 2-3%. Moreover, outbreaks of disease are very uncommon, which allows for extremely reduced antibiotic use, including cycles completely antibiotic-free.
- Dropouts are removed through automatic scrapers once or twice a day.

Elevated pen system for breeding and growing rabbits

The elevated pen system

The elevated pen system is a modular open-top system, which can be used for both breeding and growing rabbits. Specifically, it is used for the housing of one reproducing doe from a few days before kidding until the end of lactation of her litter and then, after removal of some nurses and after joining her single modules, for group-housing of growing rabbits (Figure 5):

- For the **breeding phase**, the system allows the single litter to be reared in single module, measuring 1050 cm x 685 cm, and a platform measuring 613 cm x 685 cm.
- For the **fattening phase**, four modules are joined to raise four litters in a group, resulting in a 1050 cm x 2145 cm park and a platform area of 415 cm x 2145 cm.

Each module is equipped with a semicircular feeder and two ripple-board drinkers. The floor and the platforms are made of slatted plastic, the latter removable for easy cleaning.



Figure 5. Dimensions of the elevated pen system and by the modular farm layout

Breeding barn

During the breeding phase, individual modules are used and equipped with a removable nest containing wood shavings. However, at the time of the visit it could not be seen as it had been removed. An example of a nest without nesting material is showed in Figure 6. The rabbits are inspected at least once a day and handled to get them accustomed to humans. A 42-day cycle is used in this farm: females are inseminated at about 11 days postpartum, and parturition occurs on days 30-31. During the first two days after kidding, cross-fostering is applied to have an equal litter of up to 9 individuals. In this farm, the number of kits per doe is sufficiently low for the breeder to avoid culling a surplus of kits. Controlled lactation is performed in the first 15 days postpartum by means of a movable wall that allows the nest to be closed and opened to let the doe nurse her kits once a day for not less than one hour (Figure 6).

Weaning takes place at 30 days post-partum. During our visit, the kits were about 20 days old, and they just started to move freely and use the platforms (Figure 7). They moved well and did not slide inside the slots in the plastic flooring (Figure 8) and 9). None of the does inspected had pododermatitis. The perforated side wire walls allow the does to have visual and tactile contact with each other through the netting (Figure 8). The observed rabbits were clean, calm, curious and bright-eyed (Figure 9). The cages and the environment were clean.



Figure 6. Plastic nest inserted with a red dye) to allow controlled lactation. When in use, avoid sharing an nest at kidding material.



Figure 7. 30-day-old kits on the platform



Figure 8. Kit climbing from the nipple drinker (under the platform)



Figure 9. The doe on the platform, contact and interacting with humans

Elevated pen system for breeding and growing rabbits

Fattening barn

The growing rabbits are raised in the park system from 30 to 66-70 days of age. During this period, four consecutive breeding modules are combined into a park, allowing four litters of up to nine weaned kits to be raised. Each park therefore possesses a long platform that runs along its entire length, three feeding points and six watering points (Figure 10, 12). The stocking density is kept at about 32 kg/m² at the end of the fattening period. The greater space available and the reduced risk of diseases result in faster growth, shortening the slaughter age, and thus also the risk of aggression which normally increases with age, is reduced.

Various enrichment elements are provided in each pen (Figure 11):

- one stick made of non-toxic wood
- one metal cage with cubes of alfalfa hay (Figure 12)
- one hiding area (replacing the nest)

During our visit, we observed that the animals were clean and had no visible injuries despite being near the end of their cycle (about 60 days old); they were very active, they could run, stand up, jump on the platform and make at least 3 consecutive jumps, they were curious and not afraid of humans (Vicko – QR code).



Figure 12. Elevated pen for growing rabbits - metal cage with cubes of alfalfa hay highlighted in red



Figure 10. View of two elevated pens divided by a wire mesh wall



Figure 11. Enrichment provided in each pen: a) wooden stick, b) cubes of alfalfa hay, c) hiding area



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For any questions or suggestions regarding the factsheet, please contact info@eurcaw-poultry-efsa.eu

An example of inspections of compliance with the transport regulation (COUNCIL REGULATION (EC) No. 1/2005)



European Union Reference Centre for Animal Welfare Poultry SFA

Best practice Factsheet

An example of inspections of compliance with the transport regulation (COUNCIL REGULATION (EC) No. 1/2005)



The EU transport regulation

The EU transport regulation (COUNCIL REGULATION (EC) No. 1/2005) sets forth provisions governing the transport of live vertebrate animals. It establishes transport conditions to be fulfilled in order to reduce negative animal welfare consequences and prevent suffering.

This factsheet provides an example of how to do an inspection of compliance with the regulation.

Example of a cross-border transport within the EU

The target of the veterinary inspection was a flock consisting of 7300 female turkeys, age 17 weeks and with a body weight around 11 kg. The inspection took place at the farm in Denmark before departure and was carried out in November 2023. The destination for the transport was a German slaughterhouse. The journey duration was in total 8 h, including the mandatory break for the driver. The plan for emptying the house was loading two vehicles with turkeys one evening and then another three vehicles the following evening. Each vehicle consisted of a rigid truck with a trailer of equal size. Containers were stacked 6 high and 5 deep, totaling 30 containers on each of the truck and the trailer, i.e., 60 in total.



Checking the travel documents.

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Best practice Factsheet

An example of inspections of compliance with the transport regulation (COUNCIL REGULATION (EC) No. 1/2005)

Inspection of transport - step-by-step (continued)

2. Checking the condition of the vehicle

The design and condition of the vehicle were checked to ensure the vehicle was suitable for the transport of turkeys. The containers on the vehicle were inspected regarding proper ventilation, suitability for being cleaned/disinfected and whether the floor was solid and free of sharp edges. The driver explained and showed that the outermost edge of the container had been smoothed to avoid damage to the turkeys when they are pushed into the containers. The floor was solid such that faeces were prevented from dropping to lower-placed containers. The curtains and how they were attached to the sides were inspected to ensure that the turkeys were protected against harsh weather conditions during transport. The containers were checked, ensuring that they were in place and firmly locked. The requirement of a sign on the back of the vehicle warning other road users that live animals were on board was checked.



Left: the floor in the containers; Right: the curtains in the storage position

3. Catching the turkeys

The procedure consisted of first corralling a sub-flock of turkeys into the bucket of a wheel loader. Then the wheel loader was driven a short distance (approx. 200 m) to the vehicle and the turkeys were loaded manually from the bucket into the containers. The veterinary inspector followed this procedure for multiple sub-flocks.

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Best practice Factsheet

An example of inspections of compliance with the transport regulation (COUNCIL REGULATION (EC) No. 1/2005)

Inspection of transport - step-by-step (continued)


4. Fitness for transport

Before the loading of the turkeys, the veterinary inspector asked the farm owner if he had sorted out the turkeys that were not fit for transport. The veterinary inspector observed the turkeys both during the process of corralling them into the bucket of the wheel loader and after being loaded from the bucket into the containers on the vehicle. She looked for dead birds and birds showing signs of sickness or reduced welfare, including birds with broken wings/legs or injuries.

5. Loading the turkeys

At the vehicle, the bucket with the turkeys was raised so that the catchers were in line with the container to be loaded. The veterinary inspector checked how the catchers handled the turkeys during the manual loading of the birds from the bucket to the containers on the vehicle. This included whether the catchers:


- Only lifted one bird at a time,
- Used both hands; one hand partly supporting the body by grabbing under the thigh while keeping the wing in the right place, while the other hand kept the other wing folded up against the body,
- Walked all the way up to the container before placing the turkeys inside, including ensuring that the throw used when starting to fill a container was not too rough, while at the same time checking that no turkeys fell out due to being placed too close to the opening of the containers.



Manual loading of the turkeys from the bucket into the containers of the vehicle.

6. Containers

Stocking density within the containers was checked. While the catchers were loading the turkeys, the veterinary inspector counted the number of turkeys loaded into each container. This was done for several of the containers. A total of 27 turkeys were loaded into each container, with 15 loaded from one side and 12 from the other side of the vehicle. The driver informed that up to 33 turkeys were permitted in each container. The height in the containers was 36 cm. The veterinary inspector checked whether the turkeys were able to sit comfortably with their head held in a natural position when loaded into the containers.



Turkeys in a sitting position when loaded into the containers.

Additional information

An inspection of the transport regulation should always include the loading of at least one full vehicle. In this case, loading started at 18:00 and was done at 19:45 when both the truck and the trailer were fully loaded and ready for departure.

Two days prior to the described inspection, a veterinary inspection of the flock was done, which is a legal requirement for every poultry transport across borders (COMMISSION DELEGATED REGULATION (EU) 2020/688).

The inspection checklist (Danish) used during the inspection is available upon request.

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Mobile cart with head only electric stunning device, for on farm culling and carcass collection



European Union Reference Centre for Animal Welfare Poultry SFA

Good practice Factsheet

Mobile cart with head only electric stunning device, for on farm culling and carcass collection



Introduction

Cervical dislocation is the most common on farm method used for emergency killing of sick or injured birds. However, there is evidence that cervical dislocation may not always induce immediate loss of consciousness. For this reason, several animal welfare assessment schemes propose, as gold standard, to stun the birds by percussive blow followed by cervical dislocation as a killing method. However, such percussive blow may not consistently induce unconsciousness and requires that personnel performing this method is properly trained to stun the birds consistently, humanely, and effectively.

According to Reg. 1009/2009, cervical dislocation and percussive blow to the head shall only be used on poultry up to 3 kg live weight and, in case of manual cervical dislocation, shall not be used on birds above three kg live weight. Furthermore, no person shall kill by manual cervical dislocation or percussive blow to the head more than twenty birds per day and the methods shall not be used as routine methods but only where no other methods are available (figure 1).

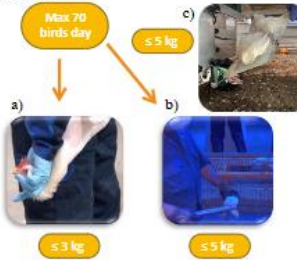


Figure 1: a) manual cervical dislocation, b) percussive blow, c) mechanical cervical dislocation (IZSLER)

Similarly to neck dislocation, percussive blow to the head is generally not well accepted by most operators.

For all these reasons, there is interest in identifying alternative stunning systems that can be shared as good practices.

Electrical stunning is recognized as a humane method for stunning poultry.

The method in general consists in passing a current through the head of the bird to induce a seizure which causes an instantaneous loss of consciousness.

In particular, head-only stunning systems perform individual stunning and when correctly operated, are able to consistently induce instantaneous loss of consciousness (figure 2).



Figure 2: head-only electrical stunning

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European Union Reference Centre for Animal Welfare Poultry SFA

Good practice Factsheet

Mobile cart with head only electric stunning device, for on farm culling and carcass collection

Mobile cart with head only electric stunning device

An electrical cart equipped with a head only electrical stunner has been adopted in some farms to improve the welfare of birds during culling operations.

The cart can be successfully used during the daily inspections both for the collection of dead birds as well as the culling of birds experiencing pain and the subsequent transfer of the carcasses to the disposal area.

During inspections, the speed of the cart can be adapted to the operator's requirements and is equipped with 3 containers for carcass collection with a total capacity of 100kg.

The stunning device is attached to the rear of the cart and has been designed and manufactured in compliance with Reg. 1009/2009. It has three combs that hold electrodes, with which the animals can be stunned before being killed through bleeding, induced by mechanical cervical dislocation with the use of a purposely designed device (hook) attached to the cart (figure 3).



Figure 3: Hook for mechanical cervical dislocation.

Current regulation: it is possible to process birds of different size, species, and category such as pigeons, broilers and layer chickens, ducks, geese, turkeys etc.

The control panel (figure 4), equipped with convenient drive devices and a large display, allows the operator to easily adjust the machine parameters and read the information quickly and clearly.



Figure 4: Control panel of the device.

The USB connector integrated (figure 5) into the electronic equipment automatically records the stunning data (date – time – Amperes – Volt – Hertz – Seconds) in the USB key, without the need for operator intervention. The frequency is fixed at 50 Hz, while the voltage will vary according to the settings based on the resistance of the bird processed.



Figure 5: Control panel of the device.

Once the birds head (figure 6) is introduced between the tongues of the stunner, an impedance is detected and the necessary voltage to ensure the correct current flow is delivered to the bird by pressing the button. Exposure time can be set according to legislation requirements and an acoustic signal will indicate the correct exposure time. The efficacy of stunning can be detected by the operator who will then immediately complete the killing of the bird by mechanical neck dislocation. Evisceration, through mechanical cervical dislocation, to achieve death should be performed within 15 seconds after stunning.

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Good practice Factsheet

Mobile cart with head only electric stunning device, for on farm culling and carcass collection

Mobile cart with head only electric stunning device

Dislocation is done mechanically by placing the bird's neck in the hook attached to the cart and pulling the bird's legs upwards towards the operator. Successful dislocation can be assisted by facing the gap between the bird's head and its neck. The bird is then placed in the container on the cart for disposal after the assessment of death indicators. Indicators of death are absence of palpebral reflex, absence of breathing and carcass relaxation.



Figure 6: Birds head is introduced between the tongues of the stunner.

Benefits of a mobile electrical cart

The stunning device, is easy to operate and when correctly used ensures an effective stun of birds belonging to different species and categories, avoiding limitations and uncertainties that are inherent to percussive stunning and neck dislocation. Mechanical neck dislocation applied within less than 15 seconds post-stun is an effective means of killing through bleeding with no blood loss in the environment. Use of an electrical cart ensures proper and reduced handling, which is vital to minimize distress, particularly in the case of birds experiencing pain. An electrical cart equipped with a head only electrical stunner has the advantage of bringing the stunning device to the suffering bird avoiding the need to transport the bird to reach the stunner.



Figure 7: Sufficing bird.

Legal References

"All animals kept in husbandry systems in which their welfare depends on frequent human attention shall be inspected at least once a day" (Directive 2018/1031/EC, Annex, point 2)

"All animals kept on the holding must be inspected at least once a day. Special attention should be paid to signs indicating a reduced level of animal welfare and/or animal health" (Directive 2007/43/EC, Annex 1, Paragraph 6)

"Any animal which appears ill or injured must be cared for appropriately without delay and, where an animal does not respond to such care, veterinary advice must be obtained to where it is possible" (Directive 2018/1031/EC, Annex, point 6)

"Chickens that are severely injured or show evident signs of health disorders, such as those having difficulties in walking, severe lesions or extreme malnutrition, and are likely to suffer shall receive appropriate treatment as soon as possible" (Directive 2007/43/EC, Annex 1, Paragraph 7), (Reg. 10)

"It is an animal duty to kill productive animals which are in severe pain where there is no economically viable way to alleviate such pain" (Reg. EC 1009/2009, paragraph 15)




European Union Reference Centre for Animal Welfare Poultry SFA

For any questions or suggestions regarding this fact sheet, please contact: info@eurcaw-poultry-sfa.eu

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GP: Gather information

- Do you have examples of good practices that you would like to promote?

Warning: No advertisement of company.

Open discussion



Questions?



Update on the Centre's actual work on training (activity 4)

Antonio Velarde
EURCAW-Poultry-SFA



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Review of existing training activities and materials (BTSF and National courses in some Members States)

➤ **Assessment of consciousness after electrical stunning in rabbits** (June 2024)

5 training courses analysed

- ABIs for assessment of state of consciousness partially covered
- RBIs well covered in 3 courses
- Sample size not addressed in any course



Review about the main welfare aspects of stunning methods in rabbits
Scientific study in electrical stunning + Factsheet + Webinar

Development of training material for specific topics



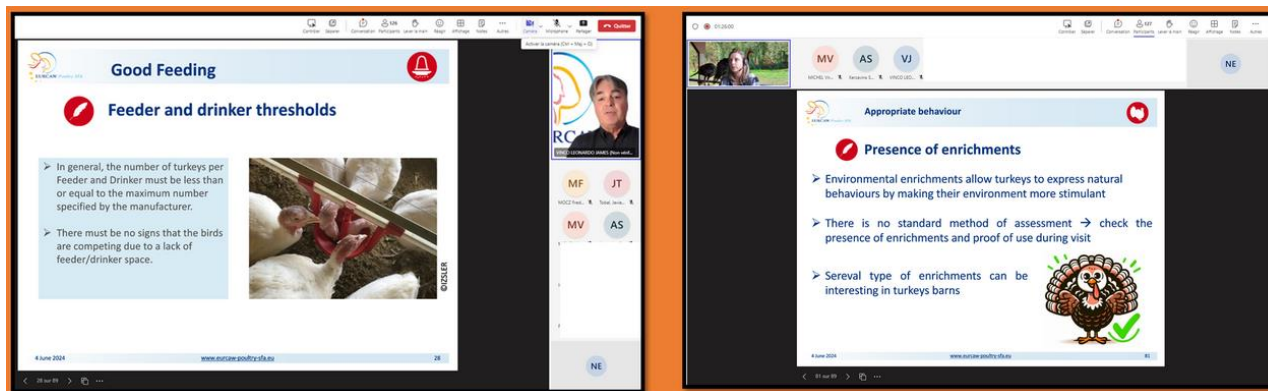
Webinar assessment welfare of turkeys on farm

4 June 2024

Presentation of the assessment of welfare in turkeys on-farm using the most relevant ABI (or RBI and MBI if no relevant ABI) and their methods

The webinar was attended by 138 people (189 registered), from 17 EU Member States

Content available online



Development of training material for specific topics



Webinar assessment consciousness after electrical stunning in rabbits

12/11/2024

Time: 10.00h to 12.00h (UTC +2, CEST)

- Most relevant indicators, method and recommendations to assess the state of consciousness after electrical stunning of rabbits.
- Presenting results from the scientific study conducted at 16 commercial EU slaughterhouses.

Content will be later available online

Questions?



Update on the Centre's actual work on dissemination (activity 5)

E. Nehlig

EURCAW-Poultry-SFA

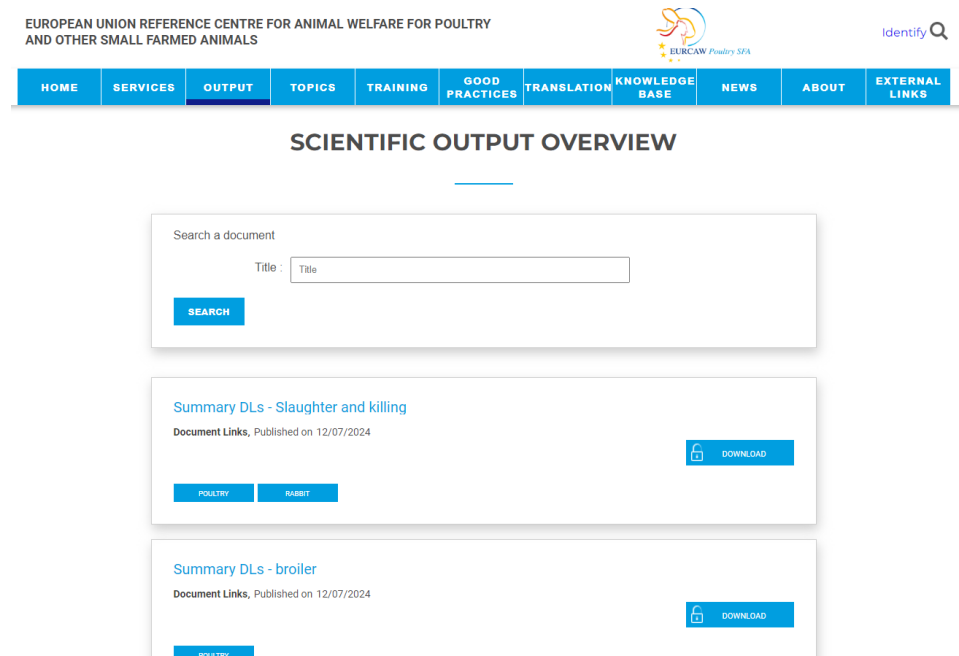


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Website modification

➤ Based on the feedback received from our target audience, on the EURCAW-Poultry-SFA website, the Centre made possible modifications on the website architecture this summer.

- In the sub-page '[scientific output overview](#)' you are now able to **download summary deliverables** Excel tables **per priority area**.



EUROPEAN UNION REFERENCE CENTRE FOR ANIMAL WELFARE FOR POULTRY AND OTHER SMALL FARMED ANIMALS

Identify 🔍

HOME SERVICES **OUTPUT** TOPICS TRAINING GOOD PRACTICES TRANSLATION KNOWLEDGE BASE NEWS ABOUT EXTERNAL LINKS

SCIENTIFIC OUTPUT OVERVIEW

Search a document

Title:

SEARCH

Summary DLs - Slaughter and killing
Document Links, Published on 12/07/2024

POULTRY RABBIT

Summary DLs - broiler
Document Links, Published on 12/07/2024

POULTRY

Website modification

- Factsheets have been sorted out in 3 sub-pages: Indicators & Iceberg indicators, thematic and Good practices.

Scientific output overview
Factsheets
Indicator and Iceberg indicator factsheets
Thematic factsheets
Good practices

FACTSHEETS

EURCAW-Poultry-SFA produces 4 types of factsheets:

- **Indicator factsheets:** these can be used to identify potential or existing welfare problems and to verify compliance with EU legislation.
- **Iceberg indicators factsheets:** these are reflecting major welfare issues in an integrative manner in order to enable an initial overview of the welfare state.
- **Good practices factsheets:** those concrete examples can be used for various purposes and may inspire poultry producers in the European Union to take up similar practices or implement related initiatives.
- **Thematic factsheets:** the thematic factsheets give a quick and easy overview of the topics developed more in-depth in reviews.



Services overview

Questions to EURCAW (Q2E)	Q2E - Slaughter & Killing
Q2E webform	Q2E - Husbandry

QUESTIONS TO EURCAW (Q2E)

Scientific and technical assistance

The centre has been created of the regulation 2017/625 about official controls (art. 95) to support the European Commission and member states in the applications of legislation regarding poultry and other small farm animals' welfare.

The Centre offers scientific and technical assistance to Competent Authorities (CA), National Reference Centre (NRC), other Supporting Bodies (SB), from the EU Member States and the European Commission, regarding all aspects of welfare legislation implementation. The Centre is covering hatchery, farming, transportation and killing outside of risk assessment and risk management areas.

- Q2E answers have been sorted out into 3 sub-pages: slaughter and killing, husbandry and transport.

The Zenodo community: EURCAW-Poultry-SFA knowledge base

EUROPEAN UNION REFERENCE CENTRE FOR ANIMAL WELFARE FOR POULTRY AND OTHER SMALL FARMED ANIMALS



Identify 

- HOME
- SERVICES
- OUTPUT
- TOPICS
- TRAINING
- GOOD PRACTICES
- TRANSLATION
- KNOWLEDGE BASE
- NEWS
- ABOUT
- EXTERNAL LINKS

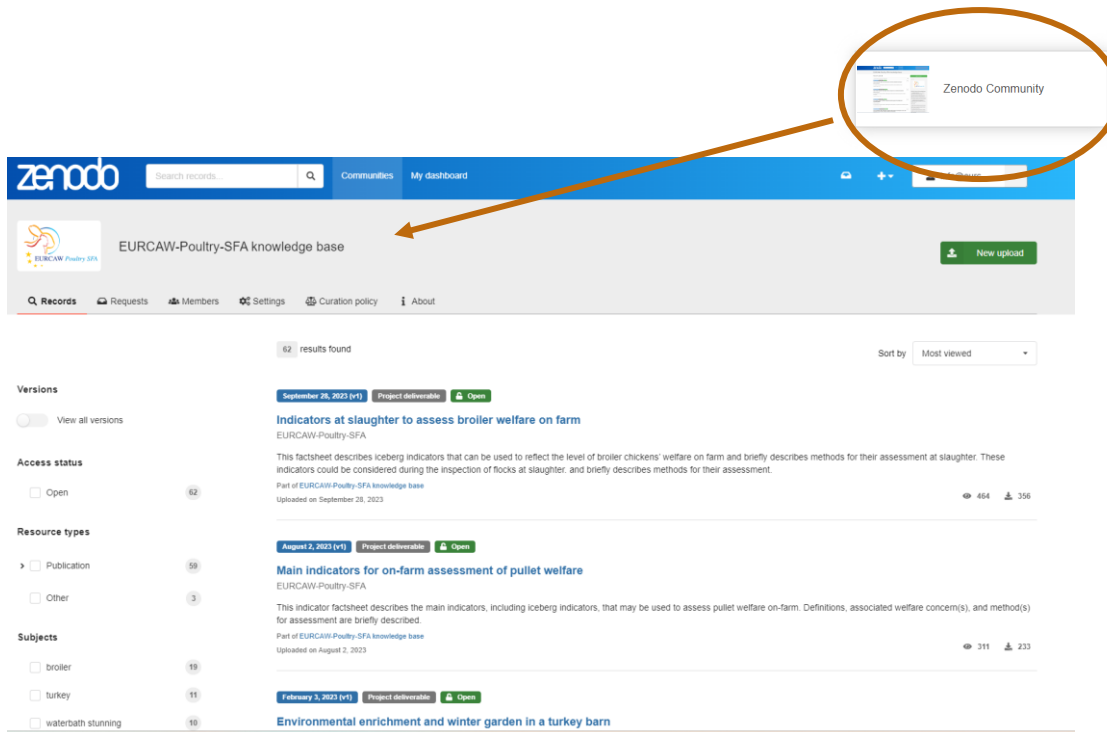
KNOWLEDGE BASE

The objective of the knowledge base is to make available documents relevant to competent authorities national contact points, official inspectors and target bodies (scientific, legal, and technical documents) related to the activity of the EURCAW-Poultry-SFA .

In 2022, the Centre created the **EURCAW-Poultry-SFA Zenodo Community**: EURCAW-Poultry-SFA knowledge base. The community is curated by the Centre and dedicated to the Centre's output production related to the Centre's five activities.

A search engine permits search outputs published in the EURCAW-Poultry-SFA knowledge base via a type of file, and keywords. Moreover, the search results can be sorted out by most viewed, best match, most recent, publication date, conference session, journal, and version.

➤ Is updated regularly



Newsletter

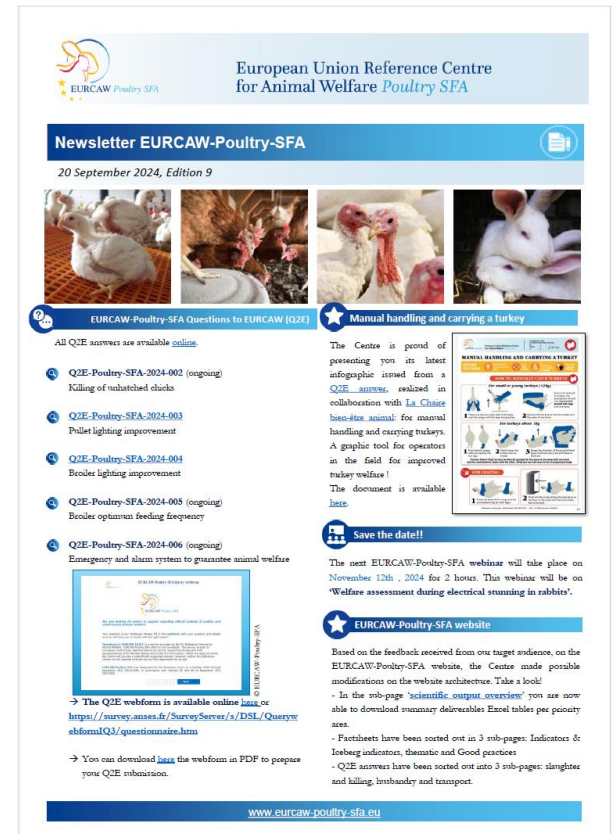
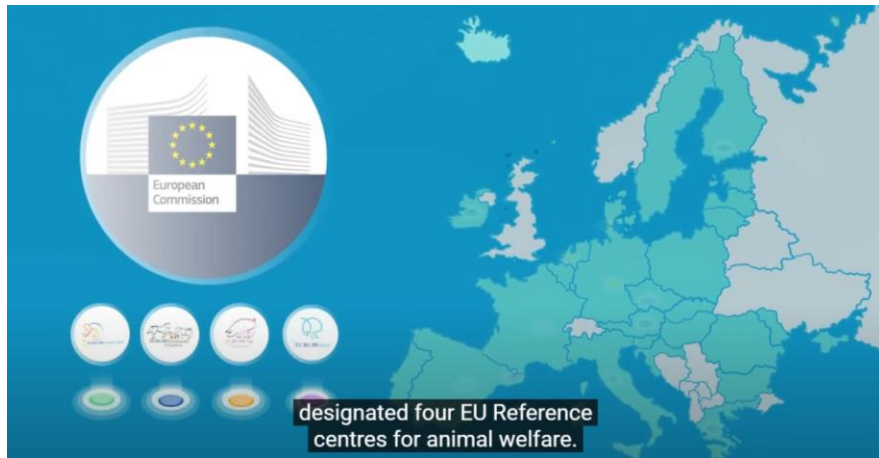
✓ **389 subscribers**

Since last meeting:

- 1 newsletter published and disseminate in 2023
- 3 newsletters published and disseminate in 2024
- + 1 to be issued this December

Centre presentation video

Was updated to include the 4th EURCAW



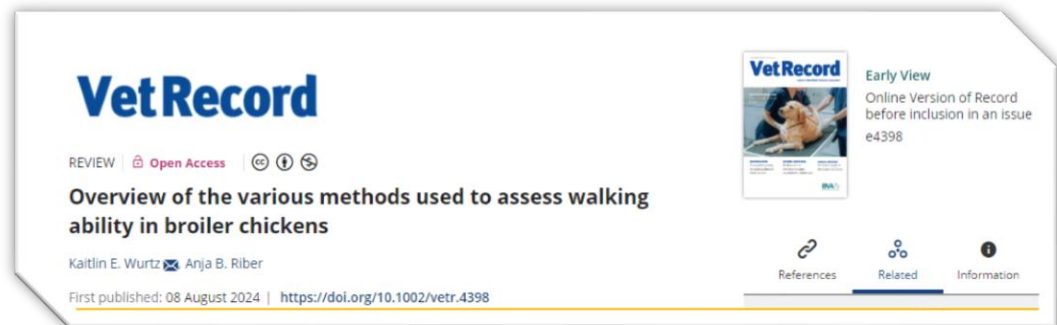
Scientific papers

➤ The work carried on in activity 2 and 3 lead to the publication of 2 peer reviewed papers in 2024:

- “Alternative to Carbon Dioxide in Two Phases for the Improvement of Boiler chickens’ Welfare during Stunning”, *Animals* 2024, 14(3), 01/02/2024



- “Overview of the various methods used to assess walking ability in broiler chickens”, *VetRecord* 2024, 195,(4), 08/08/24

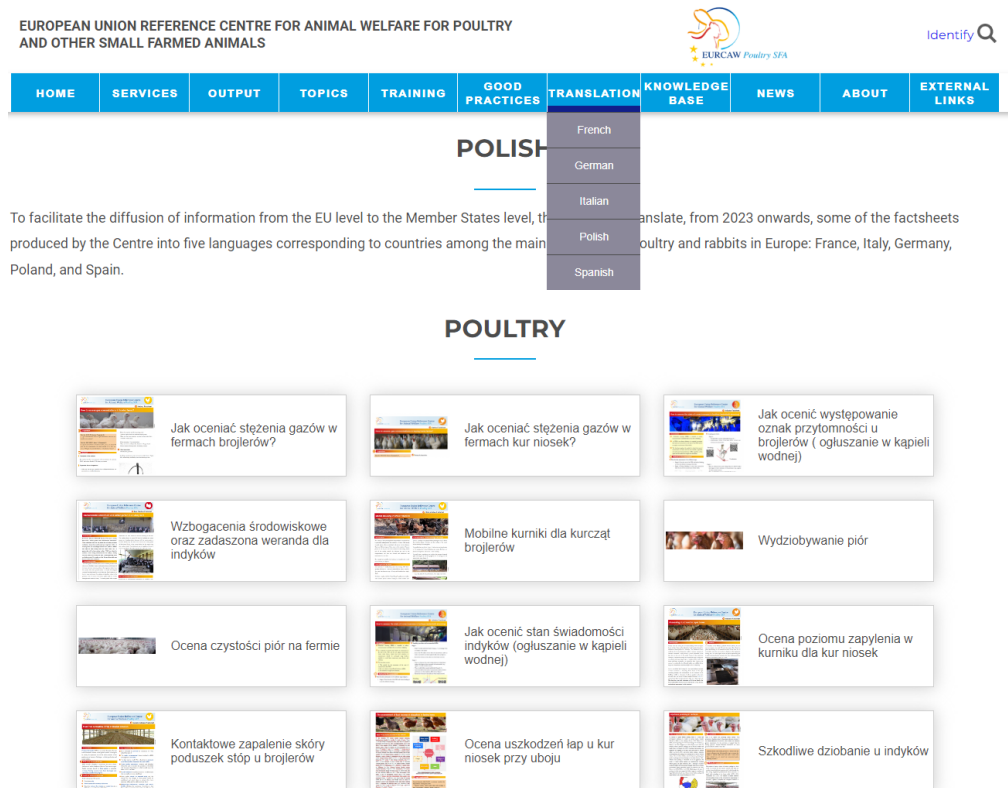


Translations

➤ We translate factsheets into 5 languages for the moment: FR, DE, IT, PL, ES

➤ During 2023-2024 period: 16 FSs are being translated. Pages will be updated by the end of the year

➤ If you are and willing or if you know someone which is interested to proof-read pre-translated factsheets using automatic translations into your native language, please contact us: info@eurcaw-poultry-sfa.eu



EUROPEAN UNION REFERENCE CENTRE FOR ANIMAL WELFARE FOR POULTRY AND OTHER SMALL FARMED ANIMALS

Identify 🔍

HOME SERVICES OUTPUT TOPICS TRAINING GOOD PRACTICES **TRANSLATION** KNOWLEDGE BASE NEWS ABOUT EXTERNAL LINKS

POLISH

French
German
Italian
Polish
Spanish

To facilitate the diffusion of information from the EU level to the Member States level, the Centre has translated, from 2023 onwards, some of the factsheets produced by the Centre into five languages corresponding to countries among the main poultry and rabbits in Europe: France, Italy, Germany, Poland, and Spain.

POULTRY

- Jak oceniać stężenia gazów w fermach brojlerów?
- Jak oceniać stężenia gazów w fermach kur niosek?
- Jak ocenić występowanie oznak przytomności u brojlerów (ogłuszanie w kąpieli wodnej)
- Wzbogacenia środowiskowe oraz zadaszona weranda dla indyków
- Mobline kurniki dla kurcząt brojlerów
- Wydziobywanie piór
- Ocena czystości piór na fermie
- Jak ocenić stan świadomości indyków (ogłuszanie w kąpieli wodnej)
- Ocena poziomu zapylenia w kurniku dla kur niosek
- Kontaktowe zapalenie skóry poduszek stóp u brojlerów
- Ocena uszkodzeń łap u kur niosek przy uboju
- Szkodliwe dziobanie u indyków

Work with the 4 EURCAWs

- Regular meetings with the other EURCAWs to:
 - Harmonize as much as possible visual identities, websites, outputs
 - Help and inspire each other
 - Try to find potential solutions for common issues the EURCAWs are facing

- Prepare the next period (2025-2027):
 - Discuss possible common work across EURCAWs

Questions?



Presentation of main topics of the next work programme proposal & discussion

Chaired by Virginie Michel
EURCAW-Poultry-SFA



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➤ Broiler

Activity No.	Description
	Factsheet providing recommendations for how to assess litter quality with a visual scoring scale on farm.
2.1	<p>Factsheet</p> <p>If validated: Practical description of the method for use by official inspectors during on-farm visits.</p> <p>If not validated: More general description of play behaviour as a positive welfare indicator.</p> <p>A report on the study will be written.</p>
3.2	Study investigating the optimal broiler age for providing access to the veranda during different seasons. Recommendations will be provided in study report.
3.3	<p>Examples of potential good practices on broiler farms:</p> <ul style="list-style-type: none"> - Good management practices for litter maintenance on broiler farms - Hatching on-farm of broilers - How to reduce hunger in broiler breeders - How to avoid water restriction in broiler breeders

Laying hens

➤ Environmental enrichment:

- Literature review on the use of environmental enrichments for laying hens,
- From the review: a factsheet will be developed on the resource-based indicators of environmental enrichment laying hens.

➤ Fitness for transport:

- In 2024: review about FFT.
- In end of 2025: workshop about the fitness for transport of end-of-lay hens to deeply discuss the indicators that can be used and gaps of knowledge with the official inspectors.
- 2025-26: field visit to collect material.
- Mid of 2027: practical guidelines to assess fitness for transport of end-of-lay hens to deliver tools immediately usable by inspectors assessing animal welfare.
- In end of 2027: webinar (training) about FFT assessment in end of lay hens.



➤ Turkeys



- **Activity 3.1** To do a literature **review** on the use of environmental enrichments on turkey farms

The aim of this deliverable is to identify commercial enrichments that have been assessed by scientific papers for the actual use by birds and the impact on their welfare.



- **Activity 2.1** To develop a **factsheet** on the resource-based indicator of environmental enrichment turkey barns

Based on the review on environmental enrichment in broiler, laying hen and turkey barns, three factsheets will be developed on the resource-based indicator of environmental enrichment in broiler, laying hen and turkey barns (M36).



- **Activity 3.3** To develop a **factsheet** on Use of sick pens in the production of turkeys on farm

➤ Slaughter and killing: Depopulation

Deliverables in 2024

- + Report on **the welfare consequences and efficacy of the different depopulation methods** and procedures used in the EU
- + **Decision tree for the selection of the most appropriate depopulation method** according to the characteristics of the affected farm and the species at stake
- + Suggestions for **welfare assessment** on depopulation sites



Deliverables in 2025

- + Elaboration of « **good practices** » for at least one depopulation method (**optional, M12**)
- + Creation of an **online**, more sophisticated, **version of the decision tree** to facilitate its use by the competent authorities (**M12**)
- + **Organization of a webinar** to present our **refined suggestions for welfare assessment** based on operators' feedback (**M11**)

➤ Slaughter and killing: other activities

Sub-activity 3.3.1 Reporting of scientific and technical knowledge

- A review of current **on-farm killing methods for rabbits** across three categories: growing rabbits, breeding rabbits, and kits (2026);
- A guidance describing the content of the instructions to be checked by the competent authorities for **assessing a stunning and killing equipment** (2027)

Sub-activity 3.3.2 Scientific and technical studies to validate indicators and methods

- Report on the scientific study on commercial slaughterhouses of **ducks stunned with electrical waterbath devices** (M29).



➤ Rabbits

Activity 2

- A factsheet on the assessment of thermal stress for rabbits on-farm (2025)**
- A factsheet on how to catch rabbits for transportation (2026)** for loading rabbits from cages into containers or crates and transfer into transport vehicles.

Activity 3

- A review on gnawing material and general enrichment for rabbits + a thematic factsheet (2025):** description of the benefits of introducing this material in the housing of growing and breeding rabbits in order to reduce stress and increase the repertoire of positive behaviours, emphasizing the importance in improving rabbit welfare.

➤ Training

3 Reviews of existing training activities and materials:

- Depopulation/Killing rabbit on farm
- Fitness for transport
- Depopulation/killing poultry on farm

4 Webinars:

- Assessment for poultry welfare on depopulation farms.
- Indicators of the state of consciousness after waterbath stunning for ducks
- Fitness for transport
- On-farm killing methods for rabbits

3 knowledge pills

Topics to be determined

➤ Activity 5 Disseminating research and innovations

✓ 5.1 Centre website and knowledge base implementation and maintenance

- **Informative website and knowledge base** fulfilling the needs for disseminating research findings, innovations and technical expertise.
- **Production of quarterly newsletters.**
- **Create and maintain the EURCAW-Poultry-SFA LinkedIn** account.

✓ 5.2 Development of dissemination tools to promote knowledge

- **Develop at least one infographic(s)** based on EURCAW-Poultry-SFA Q2E-answers.
- **Develop at least one video on selected topics of interest** within the Centre's outputs to promote the knowledge produced (link with activity 4).

✓ 5.3 Development of a Community of Practice

- **Feasibility and development if previous established CoP are successful, of a EURCAW-Poultry-SFA pilot Community of Practice.** (topic discussed later)

✓ 5.4 Translation of outputs in national languages

- **21 Factsheets translated into 5 languages (DE, ES, FR, IT, PL).**

From 2025 onwards, the **4 EURCAWs will work jointly on dissemination tools:**

- A ‘pilot activity’ aiming to improve accessibility to factsheets and other practice-ready documents for official inspectors by **creating downloadable audio versions in multiple languages**, based on current translations.

→ *This pilot activity will be led by EURCAW Ruminants & Equines*

- ‘Development of a **pilot of an APP for on-field inspectors**’. Explore the possibility to partially reuse already available tools for further development, in particular, the CARE4DAIRY APP and its source IT systems.

→ *This pilot activity will be led by EURCAW Pigs*

- **A guidance for the assessment of stunning equipment.**

→ *This pilot activity will be led by EURCAW-Poultry*

Questions?



Introduction

- Legislation 1099/2009 states that 'Products marketed or advertised as restraining or stunning equipment shall only be sold when accompanied by appropriate instructions concerning their use in a manner which ensures optimal conditions for the welfare of animals.
- Those instructions shall also be made publicly available by the manufacturers via the Internet'.
- Some Member States have already raised issues about new equipment being installed, for which proof of efficiency has not been made available.

Introduction

- For the next Work Program (2025 –2027) the four EURCAWs will jointly work on a 'guidance for the assessment of stunning equipment'.
- The activity consists in developing a guidance describing the content of the instructions to be checked by the competent authorities.
- This will harmonize the information on the equipment that should be available on internet.

Introduction

- EURCAW-Poultry-SFA sent a questionnaire to MSs to know the interest in this topic and if they have any material of use about this topic.
- The aim was to have a better understanding about the possible needs of MSs and the type of work that EURCAW can provide on this topic.

Summary of the survey for poultry and rabbits

- **15 MSs answered the survey, all of them except one were interested in EURCAWS developing a guidance for evaluating the effectiveness (in terms of unconsciousness and induction of death) of equipment used for slaughter and killing on farms and slaughterhouses.**
- **12 of 15 MSs carry out an assessment to verify whether the stunning equipment in use (on farms and slaughterhouses) comply with Article 8 of Council Regulation (EC) No. 1099/2009.**
- **Most of the MSs carry out the assessment when the animal welfare assessments are performed, only three of them do it before the installation of the equipment.**

Summary of the survey for poultry and rabbits

- In most of the MSs the assessment is conducted by official inspectors, in France it's done by certification bodies in some locations.
- In most of the MS the assessment is documentary (key parameters, registers) and physical (ABIs assessment).

- Do you have any material (e.g. guidance or checklist,...)?
- If yes, are you willing to share this material?

Questions?



Final question?



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Wrap up



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AARHUS UNIVERSITY



ONE PICTURE ALL TOGETHER FOR OUR NEWSLETTER !









European Union Reference Centre
for Animal Welfare *Poultry SFA*

Newsletter EURCAW-Poultry-SFA


20 September 2024, Edition 9

Q&A EURCAW-Poultry-SFA Questions to EURCAW (Q2E)

All Q2E answers are available [online](#).


- Q2E-Poultry-SFA-2024-002 (ongoing)
Killing of washed chicks
- Q2E-Poultry-SFA-2024-003
Pullet lighting improvement
- Q2E-Poultry-SFA-2024-004
Broiler lighting improvement
- Q2E-Poultry-SFA-2024-005 (ongoing)
Broiler optimum feeding frequency
- Q2E-Poultry-SFA-2024-006 (ongoing)
Emergency and alarm system to guarantee animal welfare



→ The Q2E webform is available online <https://survey.anses.fr/SurveyServer/s/DSL/Questionnaire/form/Q3/questionnaire.htm>
 → You can download [here](#) the webform in PDF to prepare your Q2E submission.

★ Manual handling and carrying a turkey

The Centre is proud of presenting you its latest infographic issued from a Q2E answer, realized in collaboration with *La Chaîne bio-site animal*: for manual handling and carrying turkeys. A graphic tool for operators in the field for improved turkey welfare! The document is available [here](#).



📅 Save the date!!

The next EURCAW-Poultry-SFA webinar will take place on **November 12th, 2024** for 2 hours. This webinar will be on **"Welfare assessment during electrical stunning in rabbits"**.

★ EURCAW-Poultry-SFA website

Based on the feedback received from our target audience, on the EURCAW-Poultry-SFA website, the Centre made possible modifications on the website architecture. Take a look!

- In the sub-page "scientific output overview" you are now able to download summary deliverables Excel tables per poultry area.
- Factbooks have been sorted out in 3 sub-pages: Indicators & Isobeg indicators, thematic and Good practices
- Q2E answers have been sorted out into 3 sub-pages: slaughter and killing, livebanding and transport.

www.eurcaw-poultry-sfa.eu

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