



Request for a Scientific opinion on animal welfare aspects in respect of the slaughter or killing of pregnant livestock species (cattle, pigs, sheep, goats, horses)

Request from Denmark, Germany, the Netherlands
and Sweden

BACKGROUND

Directive 2010/63/EC on the protection of animals used for scientific purposes also covers fetal forms of mammals, as there is evidence that they are at an increased risk of experiencing pain, suffering and distress in the last third of the period of their development.

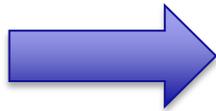
In contrast to this

Regulation (EC) No 1099/2009 on the protection of animals at the time of killing does not contain any provisions with regard to the protection of unborn animals. Also it does not provide the Member States with a possibility to adopt stricter national regulations for the killing of animals (here: the fetuses) in slaughterhouses.



Scientific studies on the sensation of pain in fetuses lead to controversial results:

- fetuses have no faculty of sensation and perception as long as they have not started breathing c.f "fetal unconsciousness" (Mellor studies)



fetuses should remain in the unopened uterus until death (OIE).

- **Merker (2007):** a conscious perception of sensory stimuli also takes place in the brain stem. **Bellieni and Buonocore (2012)** indicate that a fetal sensation of pain is present during the last third of the pregnancy at the latest.



Mandate to EFSA



TERMS OF REFERENCE

1. Assess the prevalence of pregnant livestock animals slaughtered in the critical developmental stage after which the fetus is considered to be able to perceive pain in EU MS and at EU level; the study should include cattle, pigs, sheep, goats, horses; cattle could be feasible due to data being collected under the Livestock Database
2. Assess the reasons why pregnant animals are slaughtered in the critical phase of gestation and propose recommendations to reduce the number of animals slaughtered while pregnant in this stage
3. Assess the scientific evidence available on the capacity of fetuses to experience pain
4. *Provide scientific advice on methods suitable for stunning and killing of fetuses of the main livestock species, taking into consideration their developmental stage*
5. *Provide scientific advice on methods suitable for estimating the age of fetuses of the main livestock species at the slaughterhouse after the dam has been slaughtered, in order to identify if the fetus has reached the critical developmental stage after which it is considered to be able to perceive pain*

WORKING GROUP MEMBERS & EXPERTISE RELATED TO THE MANDATE

■ Members:

Christoph Winckler (Chair) - Livestock production mainly cattle

Hans Spoolder - Animal welfare, different species

Sandra Edwards - Livestock production mainly pigs

Antonio Velarde - Processes at slaughter

Mohan Raj - Consciousness and pain perception during slaughter process

Andy Hart - Weight of uncertainty

Denise Candiani (EFSA) – scientific secretariat

■ Hearing Experts:

David Mellor - Welfare of fetuses at slaughter

Véronique Debarge - Pain perception in human and animal fetuses



APPROACH FOR TOR 1

Prevalence of pregnant cows, sows, ewes, does, mares slaughtered during a late gestation period

1. 11 contracts outsourced to 11 EU countries (3 south-EU, 2 est-EU, 3 north-EU, 3 central EU) to perform surveys in 10 slaughterhouses (at least 4 bovines, 2 pigs, 2 sheep, 1 goat, 1 horse)
2. Question types:
 - tot number of slaughtered animals/ tot number of adult females
 - "Now imagine a typical group of 100 adult female animals of one species that were slaughtered last year in your facility. How many of these 100 animals were pregnant? (the number should be comprised between 0 and 100)."

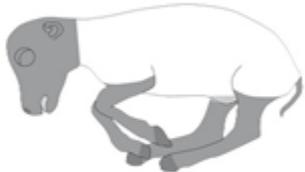
	Best estimate	Reasonable Low number	Reasonable High number
Pregnant cow			
Pregnant sow			
Pregnant mare			
Pregnant ewe			
Pregnant goat			

- Now imagine a typical group of 100 slaughtered pregnant animals (pregnancy is detected before or after slaughtering). For how many animals do you open the uterus?

- Now imagine a typical group of 100 slaughtered pregnant animals (pregnancy is detected before or after slaughtering). For how many animals do you open the uterus?

APPROACH FOR TOR1

Imagine 10 pregnant animals of one species that are slaughtered. Please specify in the table below how many of these 10 falls into each trimester or stage of pregnancy (please note there is a different table for each species).

BOVINES	1 st trimester	2 nd trimester	3 rd trimester (up to 281days)
Fetus age determined by characteristics of the fetus	Length of foetus: 0,8-13 cm Description: No hair yet 	Length of foetus: 13 cm - 45 cm Description: Hair on eyelids, eye bow, chin, lips, ear edge, tail tip Testes / teats present Claws: yellowing 	Length of foetus: > 45 cm Description: Hair on head, tail, legs up to completely Teste / teats present Claws: yellowing 
Fetus age determined by size of the unopened uterus	In this period of gestation the fetus inside the uterus would be below the size of a small rat. Length of foetus: 0,8-13 cm	In this period of gestation the fetus inside the uterus would be between the size of a small rat and the size of a beagle dog. Length of foetus: 13 cm - 45 cm	In this period of gestation the fetus inside the uterus would be bigger than the size of a beagle dog. Length of foetus: > 45 cm
Estimate number of 10 pregnant cows found at this stage of pregnancy. The sum should be 10.			

DATA ANALYSIS + EKE 1 (see slide 10 on weight of uncertainty) to be held in mid May 16

APPROACH FOR TOR 2

Reasons for slaughtering of pregnant animals and recommendations to reduce the number of animals slaughtered while pregnant

Step 1: literature scoping exercise and expert opinion (WG experts):

HEALTH

- Notifiable disease (on farm) -> part of this mandate? Yes, 'killing' in the title of the mandate
- Welfare reasons (on farm) -> part of this mandate? See above
- Production system (e.g. female meat pigs kept with intact boars; culling of early pregnant sows for husbandry reasons)

ECONOMIC REASONS

- Bankruptcy
- Economic incentives (market forecast; feed costs)
- Voluntary depopulation (sent to slaughterhouse)

NON AWARENESS

- Not knowing animals are pregnant (poor pregnancy detection systems etc.) -> ToR4/5?

Step 2: DATA ANALYSIS FROM LITERATURE + EKE 1

INTERPRETATION OF TOR 3

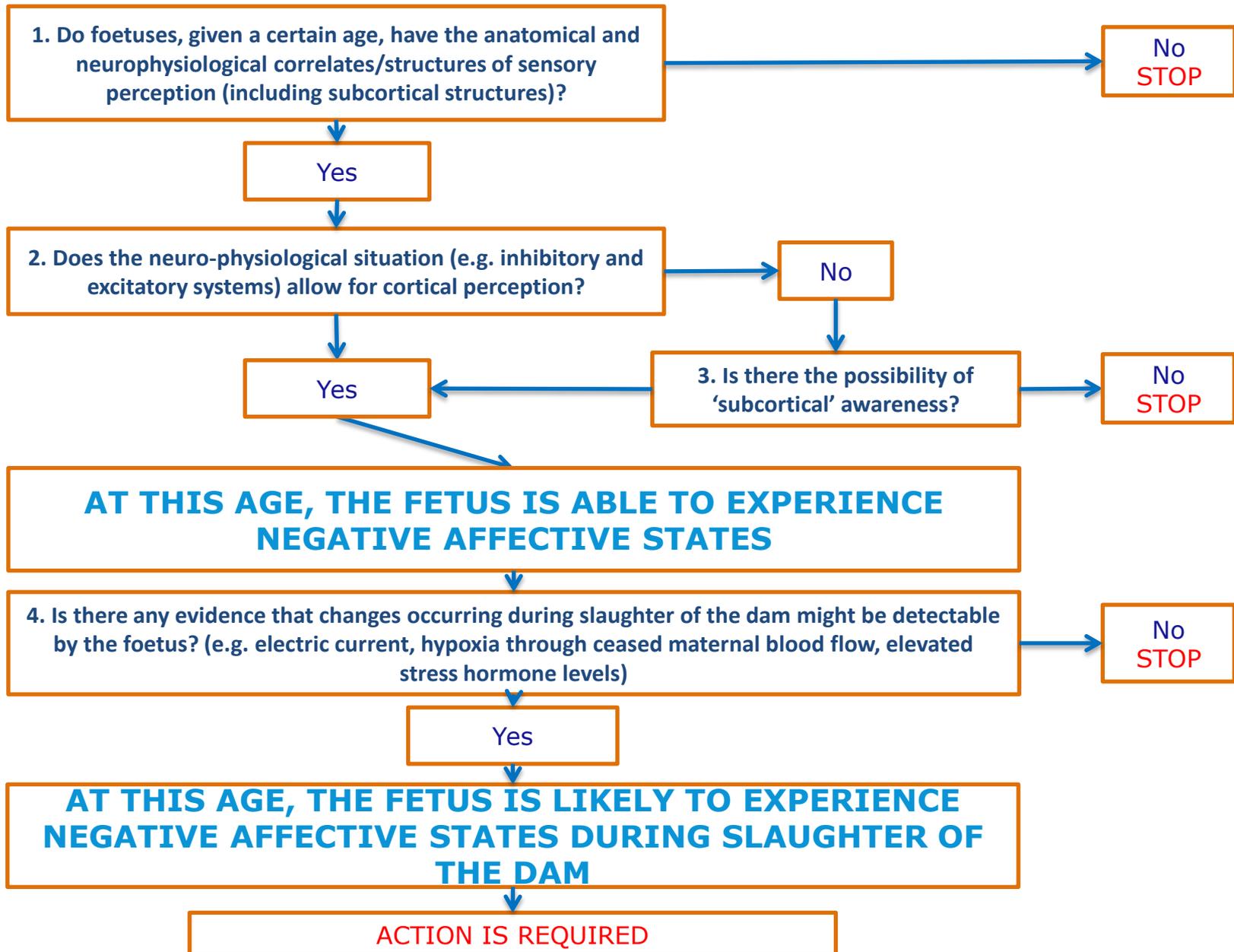
Capacity or possibility of fetuses of the main livestock species (cattle, pigs, sheep, goats, horses) to experience pain or other discomforts

Interpretation:

- the scope will be extended also to other negative welfare outcomes (such as distress and discomfort including hypoxia, hypercapnia and breathlessness) which might be experienced following the stunning and slaughtering of the dam.



ToR3: Logical model 3 addressing animal fetuses





UNCERTAINTY ANALYSIS (OPINION IS A PILOT CASE FOR TESTING NEW EFSA GD)

Supported by Andy Hart (SC WG on Uncertainty in EFSA scientific assessment)

ToR1 + ToR2:

- Development of survey to researchers / slaughterhouses in their countries based on the German S!GN project
- Uncertainty analysis: method used EKE (support from Olaf - AMU Unit of EFSA)

Participants:

- Representatives from DE and NL projects
- Participants to the surveys



Available evidence

- outcomes from NL, DE projects
- results from other MS (survey)
- Outcomes from literature (ToR2)

Uncertainty analysis carried out using EKE about overall EU prevalence

ToR3:

- Uncertainty analysis: method used EKE (support from Andy Hart)
- Participants:
 - WG members + hearing experts
 - Members of INRA WG performing comprehensive analysis of animal consciousness
 - Experts on fetal/neonatal physiology, developmental physiology, embryology from veterinary and human medicine



Available evidence

- findings from literature on animal pain and animal consciousness & other negative experiences

Uncertainty analysis carried out using EKE within each area and among the 3 areas
the uncertainty will be expressed as a probability distribution



DEADLINES

Oct 15	Nov 15	Dec 15	Jan 16	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Sep 16	Oct 16	Nov 16		
ToR1 Collection of EU existent data (mainly from 4 MS) on Prevalence of pregnant animals slaughtered							EKE 1							
ToR2: Reasons for slaughtering (literature review, EKE)														
ToR3 INRA project on animal consciousness + WG literature review on pain & other negative outcomes									EKE 2					
											PLENARY discussion			
													PLENARY adoption	
													ToR4 and ToR5	

POTENTIAL APPROACH FOR TOR 4 *

Methods of stunning of fetuses of the main livestock species (cattle, pigs, sheep, goats)

*= the following activity will only be carried out if outcomes of ToR 3 indicate that fetuses are able to perceive pain after a certain developmental stage

- **Assessment of the suitability of current stunning methods for the stunning of fetuses**
- **Identification of needs for modification**



Literature review, expert knowledge elicitation

POTENTIAL APPROACH FOR TOR 5 *

Methods suitable for estimating the age of fetuses of the main livestock species at the slaughterhouse

*= the following activity will only be carried out if outcomes of ToR 3 indicate that fetuses are able to perceive pain after a certain developmental stage

- Identification and proposal of methods suitable to estimate the age of fetuses at the slaughterhouses - after the dam has been slaughtered - in order to identify if the fetus has reached the critical developmental stage after which it is considered to be able to perceive pain



Embryologist as ad-hoc expert in the WG
Literature review (phases of development of fetuses and related measures)