



Pain and suffering during induction of unconsciousness

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AVOIDABLE PAIN AND SUFFERING DURING STUNNING AND SLAUGHTER

The purpose of the EU Slaughter Regulation 1099/2009 is to avoid pain and suffering during stunning and slaughter

Regulation 1099/2009 requires that stunning method should induce immediate loss of consciousness

If loss of consciousness is not immediate, then the onset of unconsciousness should occur without causing avoidable pain and suffering

How do we ascertain the presence of avoidable pain and suffering?

PAIN: DEFINITION USED IN EFSA GUIDANCE

According to the International Association for the Study of Pain (IASP):

Pain is an aversive sensory experience caused by actual or potential injury that elicits protective motor and vegetative reactions, results in learned avoidance and may modify species-specific behaviour, including social behaviour.





PAIN: RESPONSE TYPES AND ANIMAL BASED INDICATORS USED IN EFSA GUIDANCE

Three response types and seven groups of animal based indicators that could be applied to observe changes in these responses were identified, based on previous EFSA opinions, an expert report and a scientific review of the field of pain assessment in animals

Response types: Behavioural, physiological and neurological responses, which can be different between animals and between species.

Indicators: Vocalisations, Posture and movements, General, Hormones, Blood metabolites, Autonomic responses, Brain activity

(EFSA, 2005; Le Neindre et al., 2009; Landa, 2012).



EXAMPLE: ANIMAL BASED INDICATORS ASSOCIATED WITH PAIN AND SUFFERING

Response type	indicator	Measurements
Behaviour	Vocalisations	Number, duration, intensity, spectral components
	Posture and movements	Kicking, tail flicking, avoidance
	General	Agitation, freezing, retreat, escape attempts
Physiology	Hormones	ACTH, adrenaline, nor-adrenaline, corticosteroids
	Blood metabolites	Glucose, lactate
	Autonomic responses	Heart rate, heart rate variability, respiratory rate
Neurological	Brain activity	EEG, ECoG – relative changes in activity



GUIDANCE REQUIREMENTS

Animal-based measures to identify pain, distress and suffering are often subjective and have a relatively low specificity and/or sensitivity (EFSA, 2005; Le Neindre et al., 2009).

Therefore, two criteria/rules have to be fulfilled before a stunning intervention is considered not to induce pain, distress and suffering before the onset of unconsciousness and insensibility:

1. Animal based indicators from the behaviour response type AND animal-based measures from at least one of the two additional response (i.e. physiological or neurological response) relevant to the intervention/species, which must be indicative of the absence of pain, distress and suffering.

2. In general, these animal-based indicators should be consistent at the level of the individual animal, depending upon the species and the coping strategies (that is, consistent with respect to their interpretation).



THANK YOU

Any questions?