

Measuring emotional reactions of sheep in aversive and rewarding on-farm situations

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Key words

Animal Welfare, Affective States, Emotions, Mood, Behavioural Indicator Variables, Physiological Indicator Variables, Functional Near-Infrared Spectroscopy, Brain Activity, Haemodynamic Changes

Aim of the study

Because welfare of an animal is thought to be best reflected by its long-term mood and short-term emotions, we searched for behavioural and physiological indicator variables and corresponding activation of the brain in sheep confronted with situations of clearly positive, clearly negative and intermediate valence.

Material and methods

A total of nineteen sheep were repeatedly exposed to situations thought to differ in their valence (negative: separation, disappointed fodder expectation, intermediate: ruminating, standing, expected fodder, positive: feeding, surpassed fodder expectation, being groomed) and their behavioural and physiological reactions were recorded. The sheep were then split in two groups and differential mood was induced by changes in the housing environments. Again, the sheep's reactions towards emotion eliciting situations were recorded and modulation of the reaction by mood was studied.

Results and significance

Behaviour, physiology and brain activation consistently changed with the valence of the situations. E.g. number of ear position changes, a sign of attention, heart and respiratory rate decreased with increasing valence. Sheep in a negative mood seem to experience both negative and positive emotional situations more intensively, whereas the emotional reactions of sheep in a positive mood seem to be generally buffered towards moderate reactions. The concept that bad mood generally taints and positive mood generally improves all experiences thus needs to be reconsidered. The methodological approaches of this study were useful and will be used in future projects.

Publications, posters and presentations (Formatvorlage Überschrift 2)

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