

## Poster

### BEHAVIORAL RESPONSES OF SHEEP SUBMITTED TO HUMAN PRESENCE AND BRUSHING

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Positive emotional states have been recently studied in farm animals. We investigated the perception of thirty-eight Romane ewes submitted to the presence of a familiar observer (H) and brushing by a familiar observer (B). Sheep belonged to two genetic lines, more (R+) and less (R-) reactive to temporary social separation. Body postures, head orientation, ear changes and postures, eye aperture, tail moves and ingestion were assessed. Data were analyzed using generalized linear models, considering generalized estimating equations and potential intra-animal correlation. The effects of treatment, genetic line and phase (2.5 min pre-, 3.0 min during and 2.5 min post-treatment) were included in the models, in addition to their interactions. Significant treatment and phase interactions were observed for most indicators ( $P < 0.05$ ). It was noted that H ewes tended to show less body posture changes in the pre-treatment phase ( $0.50 \pm 0.23$ ) than B ewes ( $2.06 \pm 0.78$ ), whereas during the treatment, the opposite was observed ( $P < 0.05$ ). During the treatment, H ewes showed higher number of head orientation changes ( $14.08 \pm 2.32$ ) than B sheep ( $2.71 \pm 1.28$ ) ( $P < 0.01$ ), suggesting that B sheep were more relaxed during brushing. In addition, for R+ ewes, H sheep showed more head orientation changes ( $16.25 \pm 2.44$ ) than B sheep ( $7.07 \pm 1.31$ ) ( $P < 0.01$ ). During the treatment, a higher number of ear changes was found for the H group ( $P < 0.01$ ), and R+ ewes showed higher number of ear changes ( $10.83 \pm 1.06$ ) than R- ewes ( $7.68 \pm 0.87$ ) ( $P < 0.05$ ). Higher proportion of raised up or asymmetrical ear posture was noted pre- ( $0.73 \pm 0.05$ ) than during the treatments ( $0.53 \pm 0.06$ ), in which the horizontal ear was performed for longer ( $P < 0.05$ ). Among R+ sheep, H sheep showed raised up or asymmetrical ear postures for longer ( $0.63 \pm 0.06$ ) than B sheep ( $0.45 \pm 0.05$ ) ( $P < 0.05$ ). It

was also found that H ewes had lower proportion of closed or half-closed eyes ( $0.15\pm 0.04$ ) than B ewes during brushing ( $0.53\pm 0.06$ ) ( $P<0.01$ ), supporting the fact that brushed sheep experienced a relaxing state. In addition, overall, R+ sheep showed closed or half-closed eyes for longer ( $0.25\pm 0.04$ ) in comparison with R- sheep ( $0.13\pm 0.03$ ) ( $P<0.01$ ). Brushed ewes also wagged their tails for longer than non-brushed sheep mainly during (B:  $0.16\pm 0.05$ ; H:  $0.01\pm 0.003$ ) and after the treatments ( $0.02\pm 0.009$ ;  $0.007\pm 0.002$ ) ( $P<0.01$ ). Among R+ sheep, B ewes spent more time ruminating ( $0.48\pm 0.08$ ) than H ewes ( $0.12\pm 0.06$ ) ( $P<0.01$ ). All the behavioral indicators strongly suggest that both treatments induced a relaxing state in sheep, especially during brushing. Comparing more and less reactive sheep provided significant differences which warrant further studies.