



**S03 0-04 | Anastasio Argüello | Spain | tacho@ulpgc.es**

#### **The relationship of level of pain and facial expressions (grimace) in goat kids**

*Carolina Trujillo-Ortega, Marta González-Cabrera, Lorenzo Hernández-Castellano, Anastasio Argüello, Noemí Castro Navarro*

*Animal Production and Biotechnology group, Instituto Universitario de Sanidad Animal y Seguridad Alimentaria, Universidad de Las Palmas de Gran Canaria, Spain*

Society concerns about how animals are reared for animal production are increasing. The five freedoms for animal welfare include clearly “Freedom from pain, injury or disease”. But animal’s pain is not easy to measure, that’s why grimace scales have been implemented. The aim of the present study was to observe the relationship between facial expressions (grimace scales) and the level of pain in goat kids. Sixty Majorera goat kids (30 males and 30 females) between 1 to 20 days were enrolled in the study and divided into three groups according to pain level (pain level was evaluated by an expert veterinarian). Animals’ heads were photographed and long and short eye distances were measured using Adobe Photoshop tools (CC 2017, 18.1.0). The mouth angle, the nose angle seen in profile and the nose angle seen from the front were obtained through the online software RULER (Polytechnic University of Valencia, Spain, <https://www.ergonautas.upv.es/herramientas/ruler/ruler.php>). Normality of data were confirmed, and Spearman correlations determined between degree of pain and facial measurements using RStudio Version 1.1.463 (RStudio Inc., Massachusetts, USA). The Spearman correlation between pain degree and long eye distance, short eye distance, mouth angle, profile nose angle and front nose angle were 0.51 ( $p < 0.001$ ), 0.65 ( $p < 0.001$ ), 0.20 ( $p = 0.117$ ), -0.18 ( $p = 0.156$ ) and -0.38 ( $p < 0.002$ ), respectively. Long and short eye distance showed correlations  $> 0.5$  suggesting that they could be a good indicator of pain in goat kids. However, both correlations were positive, indicating that the eye area is bigger and does not show the normal eye tightening (present in mouse and rats). More studies of the correlation between facial expressions and pain are necessary in goats because it is good tool for welfare evaluation by farmers and veterinarians.