



Integrating innovative TECHnologies along the value Chain  
to improve small ruminant welfARE management



## Stress of transport in young goat kids and lambs at light weights

The EU regulation (EC 1/2005) for animal transport, currently under revision, states space allowances for small ruminants according to age and weight. Values are imprecise for goats <35 kg ( $0.2\text{-}0.3\text{ m}^2/\text{head}$ ) and lambs <26 kg ( $0.2\text{ m}^2/\text{head}$ ) and it is unknown if they are adequate for light animals (6-12 kg). With this aim, 77 goat kids (Murciano-Granadina) and 80 lambs (Manchega and Lacaune) were used to evaluate 2 space densities of transport by road over a short journey (120 km, <2 h) in a total of 7 trips (kids, 3; lambs, 4). A trailer (2 floors, 4 compartments of  $0.9\text{ m}^2$ ) with sensors (temperature, humidity, sound and acceleration) and low ( $0.016\text{ m}^2/\text{kg}$ ) and high ( $0.010\text{ m}^2/\text{kg}$ ) densities were used. Animals were weighed, temperature measured and blood sampled at h 0, 2 and 24 from departure. Acceleration values in the trailer were much greater than those measured in the driver's cabin and occasionally very high. Its effects, together with the high noise peaks recorded, were considered as stressful. Weight losses were not significant during the transport and recovered after resting. Despite the mild ambient conditions (THI 69 to 74), rectal temperature decreased during transport but was unaffected by density. Metabolic stress indicators increased by the journey and proved the impact of cold. In conclusion,  $0.010$  and  $0.016\text{ m}^2/\text{kg}$  were recommended for suckling lambs and goat kids, respectively. The use of closed trailers with regulated air speed, temperature, humidity and efficient shock absorbers should be used.



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