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Virtual Meeting
1-4 December 2020

	Friday 4 December 9.00 – 11.45	Friday 4 December 13.45 – 17.30
	Session 52 Long-term selection and limits Chair: Wientjes **Session 53** Free communications - cattle Chair: Hocquette **Session 54** PLF as a tailor-made way to care for individuals within groups Chair: Maselyne **Session 55** PLF and sensing animal health, welfare, physiological measures and behaviour of animals Chair: Ingrand **Session 56** Pig, poultry and rabbit husbandry for improved product quality Chair: Stadnicka / Millet **Session 57** Lameness and metabolic aspects in cattle Chair: Fürst-Waltl **Session 58** Neonatal nutrition/ early life programming Chair: Kreuzer-Redmer **Session 59** Impact of different farming practices on animal health and welfare Chair: Sossidou / Messori **Session 60** Horse registration, legal status of horses and its consequences Chair: Potocnik **Session 61** SMARTER: small ruminants breeding for efficiency and resilience Chair: Conington / Moreno **Session 62** Livestock farming systems free communications Chair: M. Lee	**Session 63** Breeding, climate and sustainability Chair: Pszczola **Session 64** Genomic evaluation Chair: Cecchinato **Session 65** PLF and sensing animal health, welfare, physiological measures and behaviour of animals Chair: Ingrand **Session 67** Mineral and vitamin nutrition in pigs and poultry Chair: Millet / Bee **Session 68** Collaborative international research related to beef quality Chair: Hocquette **Session 69** Dietary methyl donor supplementation in dairy ruminants Chair: Pinotti **Session 70** Applied animal behaviour Chair: Boyle / Dantas de Brito Almeida **Session 71** Combating the increasingly negative consumer opinion on livestock's contribution to climate change Chair: Pulina **Session 72** Resilient sheep and goats: breeding & management strategies to overcome disease and environmental challenges Chair: Conington / McHugh **Session 73** Innovative farm systems to meet societal demand Chair: Siqueira
	11.45 – 12.45 **Commission meetings** • Genetics • Nutrition • Cattle • Health and Welfare • PLF • Horse • Pig • LFS	

Session 65. PLF and sensing animal health, welfare, physiological measures and behaviour of animals

Date: Friday 4 December 2020; 13.45 – 17.30
Chair: Ingrand

Theatre Session 65

Poster Session 65

Assessment of two shearing practices on animal welfare in alpaca using infrared thermography

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Shearing affects the alpacas` welfare and causes stress which can lead to an increased abortion rate. Traditional shearing (T) is usually carried out with scissors, while a shearing machine is used in the mechanised (M), being much faster and supposedly less stressful. Animal stress has been reported to be indirectly assessed by increased cortisol levels, decreased blood glucose levels, increased heart rate and increased rectal temperature, but invasive manipulations also influencing the animal welfare are needed to obtain these values. Therefore, this study aims to compare the stress produced by both shearing methods using the eye temperature as an indicator measuring it before (B), during (D) and after (A) shearing, by using infrared thermography as a non-invasive method. Temperatures were measured from one meter distance from the lacrimal caruncle, with a Flir E6xt infrared thermographic camera, adjusting for the environment temperature and emissivity to the value of 0.98. A total of 212 alpacas from two herds (180 and 32) in southwestern Peru were registered for at least one of the three temperatures in each animal. Shearing time was also registered. A total number of records of 65, 185 and 16 temperatures for B, D and A the shearing, and records of 38, 11 and 15 temperature differences D-B, A-B and A-D were obtained, respectively. The six variables were analysed using a multivariate generalised linear model including herd and method of shearing as effects. All the temperatures were also jointly analysed fitting also the stage (B, D or A). Mean values were 35.77 °C, 37.13 °C, 36.16 °C for B, D, and A temperatures and 1.18, 0.55 and -0.45 for D-B, A-B and A-D differences respectively, showing significant differences in temperatures between D and the other stages of the shearing ($p < 0.05$). The differences D-B, A-B and A-D were respectively for T and M, 1.50 and 1.13, 0.74 and 0.38, and -0.76 and -0.30. There seemed to be relevant differences between shearing methods being M less stressful, but they were not significant and more records are needed to confirm this hypothesis. In addition, mean shearing time was respectively 1,065 and 230 seconds for T and M, showing longer exposure to stress in the first one.

Which feeding behaviours of dairy calves are associated with BRD bouts?

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Bovine Respiratory Disease Complex (BRD) affects calf welfare and productivity. The aim of this study was to investigate if feeding behaviours changed during the 7 d proceeding clinical BRD diagnosis in preweaned calves. A cohort of calves were health scored daily, lung ultrasound scored and weighed twice weekly from birth until 2 weeks post-weaning (90 d). Two automatic feeders (milk and starter) recorded daily intake, drinking speed, rewarded and unrewarded visits. Milk allowance was 10 l/d of milk replacer for 50 d. Clinical BRD was defined as UW-calf (>4) and positive lobar (>2.99 cm^2) consolidation on ultrasound. Only BRD prior to weaning was included: 50 BRD calves were paired-to-healthy calves by season, age, and weight. The effect of BRD on feeding behaviour for 7 d proceeding BRD was assessed in a linear model, with health status (BRD yes/no) as a fixed effect, grouped by pair, and time was a repeated measure with calf as the subject. Calves were on average, 32.0±12.5 d of age at clinical BRD, and weighed 55.7±10.0 kg. There was a significant day by health status interaction for milk intake, unrewarded visits and starter intake. Milk intake was lower for BRD calves on d -7, -6, -5, -4, and on d -3 (P=0.01), but not on d -2 and d -1. Milk intake tended differ d 0 (healthy 9.3±0.3 vs BRD 8.6±0.3 l/d; P=0.06). Drinking speed and rewarded visits were not different. Yet, unrewarded visits tended to be lower for BRD on d -6 and d -5; (P=0.05), and were lower on d -4, -3, -2, and -1 (-2.2±0.8 visits; P=0.01). Unrewarded visits were also different on d 0 and higher for healthy calves (healthy 4.1±0.6 vs BRD 2.4±0.6 visits; P=0.03). Starter intake was lower for BRD calves on d -7, -6, -5, -4, -3, and d -2 (P=0.001), but not on d -1. Starter intake differed on d 0 (healthy 0.32±0.04 vs BRD 0.14±0.04 kg/d; P=0.001). Results suggest that milk and starter intake are associated with clinical BRD as early as -7 d, but feeding behaviour the day prior to clinical BRD is not different from the day of diagnosis. Unrewarded visits remained lower than healthy calves closer to the day of BRD diagnosis (-4 d to d 0). Results suggest feeding behaviours are associated with clinical BRD days before diagnosis and may be used in a predictive model.