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**Book of Abstracts**

**Guest Editors: Fulvia Bovera (Coordinator),  
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Gianluca Neglia, Giovanni Piccolo, Angela Salzano.**



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inflammatory response even with the challenge of highest dose as 100 µg/mL. These results suggest that the epithelial cells are specific for different biological challenge as bacterial LPS and the DSS chemical proves to be potent inflammatory agent even at small doses and can be effectively used to induce inflammatory response to study anti-inflammatory properties of food/feed additives.

#### Acknowledgements

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## P094

### NEFA, BHBA and $\gamma$ -GT variation in the blood serum of weaned foals up to 18 months of age

Maria Grazia Cappai<sup>1</sup>, Andrea Taras<sup>2</sup>, Maurizio Picciau<sup>2</sup>, Domenico Gatta<sup>3</sup>, Raffaele Cherchi<sup>2</sup>, Walter Pinna<sup>1</sup>

<sup>1</sup>Dipartimento di Medicina Veterinaria, University of Sassari, Italy

<sup>2</sup>Dipartimento di Ricerca per gli Equini, Agris Sardegna, Ozieri, Italy

<sup>3</sup>Dipartimento di Scienze Veterinarie, University of Pisa, Italy  
Contact: [mgcappai@uniss.it](mailto:mgcappai@uniss.it)

The correct energy balance estimation of the growing foal may represent an issue for the nutritionist, given the dynamic change in body composition and fat tissue depots. In fact, the maintenance of adequate body weight and body measures over time for optimal growth curve accomplishment and the fulfilment of nutrient requirements are fundamental to address adequate individual feeding plans of the future sport horse. The metabolic profile of selected metabolites could be helpful in interpreting growth homeostasis and some of these could be used as indicators of energy balance state and liver health. Against this background, the literature on circulating indicators of homeostasis perturbation during the growth of foals is poor. We hypothesised that metabolites indicating the energy balance like non-esterified fatty acids (NEFA),  $\beta$ -hydroxy-butyric acid (BHBA) and liver enzyme like  $\gamma$ -glutamyl-transferase ( $\gamma$ -GT) [interpreted in the light of circulating total bilirubin (TBIL) and aspartate aminotransferase (AST)] may be used to monitor the growing foals from weaning to 18 months of age. For this purpose, a total of 12 Anglo-Arab (AA) foals from the same stable were enrolled in this trial. All foals were serially weighed on a digital scale and sampled for total blood at weaning, at 12- and 18-months of age. Feeding and rearing conditions were adopted simultaneously equal for all the foals used. All data were processed by a repeated measure ANOVA.

The foals involved appeared outwardly healthy and no signs of poor growth performance were pointed out as to body and size gain for the breed. However, the study of the metabolic profile gave rise to interesting patterns of parameters investigated. In fact, NEFA turned out to increase sharply in 12-months-old foals, when animals were sent to spring pasture, but BHBA displayed to increase when foals were aged 18 months and NEFA concomitantly decreased to reach similar levels to those found when foals were stabled during weaning. In addition,  $\gamma$ -GT and BHBA levels turned out to positively correlate ( $p=0.051$ ). While at 6- and 12-months,  $\gamma$ -GT dropped in the physiological reference range for the horse, at 18-months of age  $\gamma$ -GT levels exceeded the upper limit, when also BHBA tested to increase.

In conclusion, the liver enzyme increase could be associated with ketone bodies production for energy purposes when energy balance appears negative, following the drop of NEFA from body depots.

## P095

### Effect of fibre length, and amount on growth and behaviour of buffalo calves

Maria Serrapica<sup>1</sup>, Ada Braghieri<sup>1</sup>, Fabio Napolitano<sup>1</sup>, Gerarda D'Angelo<sup>1</sup>, Francesco Serrapica<sup>2</sup>, Corrado Pacelli<sup>1</sup>

<sup>1</sup>Scuola di Scienze Agrarie, Forestali, Alimentari e Ambientali, University of Basilicata, Potenza, Italy

<sup>2</sup>Dipartimento di Agraria, University of Napoli Federico II, Portici, Italy

Contact: [corrado.pacelli@unibas.it](mailto:corrado.pacelli@unibas.it)

The objective of this study was to determine the effect of two different physical forms of forage, long and chopped, on the performance and feeding behaviour of young buffalo calves. Twenty-four Mediterranean buffalo calves were randomly assigned to 3 feeding treatments (2 males and 6 females/group). All the calves received daily 4 L of milk replacer (MR: 0.18 kg/L). From the 15th day of life, calves from Group LH received long hay (20 cm) and commercial pelleted starter *ad libitum*; calves from Group OS received only commercial pelleted starter *ad libitum* and calves from Group CH received chopped hay (3–4 cm) and commercial pelleted starter *ad libitum*. Food and water intake were recorded weakly while the calves were weighted twice a month. At weaning (91 days of age), 2 males of each group were slaughtered and the stomachs were removed and measured. Samples of feed were taken and analysed for chemical composition. The remaining calves were weighed again 85 days after weaning (173 days of age). Calves' behaviour was recorded in sessions of 1 min/animal, for 1 h/day (totally 3 min/day), 2 times per week during the last 2 weeks of pre-weaning. The total observation time per animal was of 12 min. Starter intake was higher in group OS ( $p<.05$ ),