

## ***Boswellia serrata* powder extract in postweaning piglets feeding**

Valentina Serra, Grazia Pastorelli, Lauretta Turin

University of Milan, Veterinary Medicine, Via dell'Università 6, 26900 Lodi, Italy

The anti-inflammatory Indian frankincense *Boswellia serrata* was studied with the aim to evaluate the effect on inflammatory parameters and reactive oxygen metabolites (ROMs) in postweaning piglets. A total of 80 weaned piglets (average body weight:  $10.0 \pm 0.43$  kg) were randomly assigned to two dietary treatments: control diet (CON) and CON supplemented with 1 kg/t of extract (BOSW). Blood samples were collected at the beginning (day 0) and at the end of trial (day 28) to test the expression of pro-inflammatory (IL-1 $\beta$ , IL-6, IL-8, TNF- $\alpha$  and INF- $\gamma$ ) and anti-inflammatory (IL-4, IL-10) cytokines and to quantify ROMs. Body weights were recorded at day 0 and day 28 and skin lesions were evaluated weekly. Data were tested for normality and they resulted normal except IL-4, IL-6, TNF- $\alpha$  and IFN- $\gamma$ , which were analyzed with non-parametric test. Performance data and blood parameters were analyzed by ANOVA with dietary treatment, sex and time as effects. Chi-square tests were used to compare skin lesions with dietary treatment. Growth performance, skin lesions and cytokines were not affected by dietary treatment. A time effect was detected for IL-4 ( $4.19 \pm 1.39$  vs  $10.08 \pm 1.52$ ), IL-6 ( $10.83 \pm 0.80$  vs  $13.53 \pm 0.43$ ), IL-8 ( $6.11 \pm 0.56$  vs  $9.51 \pm 0.84$ ) and TNF- $\alpha$  ( $8.80 \pm 0.65$  vs  $11.53 \pm 0.51$ ) ( $p < 0.05$ ), resulting higher at day 28 than at day 0. Compared to females, males had higher values for IL-1 $\beta$  ( $10.38 \pm 0.60$  vs  $8.68 \pm 0.55$ ;  $p = 0.045$ ), IL-6 ( $13.13 \pm 0.47$  vs  $11.13 \pm 0.84$ ;  $p = 0.043$ ) and TNF- $\alpha$  ( $11.39 \pm 0.47$  vs  $8.94 \pm 0.70$ );  $p = 0.002$ ), while a trend has observed for IL-8 ( $8.69 \pm 0.81$  vs  $6.91 \pm 0.73$ ;  $p = 0.08$ ). ROMs were not affected by diet ( $p = 0.82$ ) showing  $46.72 \pm 2.64$  vs  $46.18 \pm 2.17$  H<sub>2</sub>O<sub>2</sub>/100 ml in CON and BOSW respectively. These preliminary results need to further investigate doses and length of supplementation of *B. serrata*, to verify the potential effects reported in other livestock species.