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**Effect of different dietary aromatic essences on development of intestinal lymphoid tissues and villus height in rabbit**

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In the last decade, considerable interest has arisen in the use of natural antioxidant to improve meat quality and intestinal health. In this paper we analysed some nutritional strategies to improve the intestinal health of growing rabbits in the framework of aromatic essences integration. Two aromatic essences alone or combined were added to the diet and some characteristics of gut barrier (villus height, crypts depth, area and perimeter of Peyer's patch), morbidity and mortality have been analyzed. Five groups of twenty New Zealand White weaned rabbits were submitted to the following dietary treatments: Standard diet (S); Standard diet +150 ppm vitamin E (E); Standard diet + 0.2% oregano extract (O); Standard diet + 0.2% rosemary extract (R); Standard diet + 0.1% oregano extract + 0.1% rosemary extract (OR). Each diet contained integrations of: 50 ppm vitamin E, CLA 0.5% (from soy oil), 3% Omega Lin® (Mignini&Petrini) and 0.5% mixed vitamins. Eight rabbits per diet were slaughtered at 80 d of age; the Peyer's patch was removed from caudal ileum and a 6 cm sample was excised from the middle part of the jejunum to determine mucosal histology. No morbidity was recorded and only one case of mortality has been registered in O diet. No significant effect of dietary treatments was detected on villus height (627  $\mu\text{m}$ ;  $P=0.27$ ) and crypts depth (88  $\mu\text{m}$ ;  $P<0.76$ ). The area and the perimeter of Peyer's patch were lightly influenced by diet; S diet showed lower values of area (305,957  $\mu\text{m}^2$ ;  $P<0.15$ ) and perimeter (2,246  $\mu\text{m}$ ;  $P<0.12$ ). It should be noted that Peyer's patch has a major role in the interaction of the host with gut antigens and regulate IgA production. In conclusion, these preliminary data showed that oregano, rosemary and their combination did not exert any significant effect on gut barrier characteristics of rabbits. Further studies with artificial infections should be performed.

## P-139

**Effect of LNA dietary integration on endocrine and metabolic parameters in dairy cattle**

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In a field trial the effect of long term supplementation of different levels of extruded linseed and energy levels on milk yield and plasma concentration of insulin, T3, cortisol, leptin, glucose and non esterified fatty acids (NEFA) in dairy cows in early lactation, were evaluated. Fifty seven Italian Holstein Frisian cows, reared in *Parmigiano Reggiano* cheese area, homogeneous for lactation number, days in milking (DIM) (41 $\pm$ 12 d), BCS (3.17 $\pm$ 0.14) and productive level in the previous lactations were allotted into three experimental groups, in different farms, with similar management systems (control group -C- 1.45 Mcal NEI/kg DM, 280 g/d Omega-Lin® - Mignini&Petrini O280: 1.51 Mcal NEI/kg DM, 450 g/d Omega Lin® - Mignini&Petrini O450: 1.56 Mcal NEI/kg DM) and fed isonitrogenous TMR diets. Omega Lin® contained 70% of extruded linseed. Blood samples were taken by coccygeal vein and blood parameters evaluated. Fixed effect of diet, parity and herd within diet were tested. Parity showed a significant effect only for milk yield and T3, while diet significantly influenced milk yield, T3, leptin and NEFA. Milk yield was higher in O450 group compared to the control one (43.61 vs 35.51;  $P<0.01$ ). T3 showed the highest level in O450 group if compared with C group (1.32 nmol/l vs 1.07 nmol/l;  $P<0.01$ ) while O280 group showed an intermediate level. NEFA as indicators of body lipids mobilization showed the highest levels in C group (0.50 mmol/l) and lower in O280 group (0.29 mmol/l) ( $P<0.01$ ) while O450 showed an intermediated level. Opposite results were found for leptin which showed the highest level in O280 group and the lowest in C group (4.08 ng/mL vs 3.08 ng/mL;  $P<0.05$ ) while O450 group showed an intermediated level. No significant differences were found in the other parameters although cortisol and insulin are key players in the control of intermediary metabolism, and glucose as indicator of energy balance. In conclusion, leptin, T3, NEFA levels in O450 group put in evidence a better energy utilization for milk yield although the trend of these parameters showed in O280 group should be explained by a probably different genetic value of the cows among farms. Further analyses will be desirable.