

(>5%) were Maremma sheepdog (in 11 subjects), Segugio italiano (5), Neapolitan mastiff & Cane corso cluster (2), and Mastiff (1). These results show that genomic tools can and should be implemented alongside the morphologic evaluations for the identification of dog breed membership, especially for breeds that show a large phenotypic variability such as the Fomni's dog.

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P152

***Ascophyllum nodosum*-derived fucoidan modulates the intestinal expression of immune-inflammatory genes in a biopsy model of canine chronic enteropathy**

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Like terrestrial plants, algae contain a tremendous amount of bio-functional compounds, some of which may affect inflammatory and immune responses. As such, algal bioactive components might find use in the treatment of canine chronic enteropathy (CE), where persistent inflammation underlies clinical signs. In this investigation, we studied the effects of *Ascophyllum nodosum*-extracted fucoidans (ANFE) on cytokines gene and protein expression and on the morphology of intestinal tissue explants obtained by CE dogs. Duodenal biopsies from 22 dogs with CE were incubated for 24 h with or without ANFE. TNF- α , IFN- γ and IL-15 proteins were measured in culture supernatants by ELISA whereas relative expression of *IL1B*, *IL6*, *IL10*, *IL15*, *TNFA*, *IFNG*, *FOXP3* and *IDO1* genes was assessed through real-time PCR. Inflammatory cell infiltrate and mucosal integrity was evaluated by light and transmission electron microscopy. Cytokine protein concentrations were all below the detection limit, and no differences were found regarding morphological features between the two groups. With respect to transcriptomic data, mRNA levels of the pro-inflammatory genes *IL15* and *TNFA* were significantly higher ($p < .05$) in the control group, whereas a tendency ($p = .08$) for a higher relative gene expression was noticed for *IL6* and transcription factor *FOXP3* in ANFE-treated samples. In conclusion, while failing to improve morphological outcomes, ANFE supplementation seemed to be associated with an overall positive effect on intestinal phlogosis and immune function. However, due to methodological limitations of the study, further research is warranted to confirm the present findings.

P153

Biochemical parameters, oxidative stress and inflammatory status in English Pointers fed a citrus molasses-supplemented diet

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Exercise has been shown to increase the production of reactive oxygen species (ROS) in canine serum causing oxidative stress. Citrus molasses is a by-product of citrus juice production containing phytochemicals substances that contribute to health maintenance. Naringin and Hesperidin are the predominant flavanones in citrus fruits with antioxidant, lipid-lowering, hypoglycaemic and anti-inflammatory properties. The aim of this study was to evaluate the effect of citrus molasses inclusion in the diet for hunting dogs on some biochemical parameters, oxidative and inflammatory status. Ten neutered adult English Pointers were divided into two groups homogeneous for sex (2 male, 3 females), age (>12 months old), initial body weight (CTR: 21 kg \pm 1.50), BCS (4.25 \pm 0.5, score 1–9) and fed with the same commercial diet supplemented with (MOL group) and without (CTR group) of 2.5% as fed of citrus molasses (Antioxidant Pool Content: Hesperidin = 3.3 g/kg; Vitamin C = 0.4 g/kg; Pectin = 28.3 g/kg). The trial lasted 4 weeks during which the dogs were used to train hunting twice a week for 1 h. Blood samples were withdrawn from the cephalic vein at the beginning (Day 0) and at the end of the trial (Day 28). All samples were taken from fasting dogs, in the morning, to evaluate: total cholesterol and triglycerides by a chemistry analyser Catalyst Dx (IDEXX Laboratories), d-ROM, OXY and BAP tests using reagents from Diacron International s.r.l. (Grosseto, Italy) and some cytokines expression (IL-1 β and IL-10) were detected using Elisa kits (Genorise, Philadelphia, USA). Data were analyzed using a mixed model with covariates of XLSTAT statistical package (Addinsoft, v. 2014.4.03). The model included the fixed effect of the dietary treatment (MOL vs. CTR), of the time (Day 0 vs. Day 28) and their interaction (Diet \times Time); the individual animal was considered as a random effect in the model. Diet significantly increased ($p = .010$) the biological antioxidant potential (BAP) and reduced triglycerides ($p = .05$) and lymphocytes ($p < .001$), indicating a possible role of citrus molasses in plasmatic antioxidant, lipid-lowering and anti-inflammatory capacity. Time lowered significantly the IL10 levels ($p < .001$) and IL-1 β ($p = .05$) levels and the interaction Diet \times Time reduced significantly the lymphocytes ($p = .005$). Data confirm the positive role of functional compounds of citrus fruits to counteract the oxidative stress in working dogs.