

phenotypically similar, were investigated: Podenco Valenciano (PV), Podenco Ibicenco (PI), Podenco Canario (PC), Podenco Andalus (PA), Podenco Portugais (PP), Kelb tal-Fenek (KF), Egyptian Baladi dog (EG), and Cirneco dell'Etna (CI), with a total of 223 samples (ranged from 17 to 32 individuals per breed). The median-joining network defines four major haplogroups (Hg), with high prevalence of Hg A (55.2%) and B (40.8%). Four breeds (CI, KF, PI, and PC) showed only Hg A and B with almost homogeneous frequency. The other breeds (EG, PA, PP, and PV) showed the presence of Hg C with only one haplotype (Ht) per breed: EG and PP shared one Ht, while PA and PV both have unique Ht. EG was the only breed with Hg D, and only in one dog. Indeed, the principal component analysis showed the outlier position of EG breed. In order to verify possible genetic continuity since ancient times we compared our sequences to the ancient European dog mtDNAs and constructed the schematic phylogenetic tree encompassing modern (223 + one KF sequence from database) and ancient (56) mitogenomes. Even if ancient data showed an over-representation of Hg C and D, seven sequences fall in Hg A and one in Hg B and some Ht shared within ancient populations and extant dog breeds was also detected. Precisely, within Hg A one of EG sample shows identity with a sample from East France. Moreover, the Italian canid PIC-5 dated to the recent Bronze Age showed Ht identity with CI, PV and EG sequences. Finally, within Hg C, the shared clade was encompassed by EG, PV, PP, PA and eleven ancient sequences suggesting the conservation of ancient European mitotypes over several millennia in the Mediterranean native houndlike breeds. EG is the breed that shares more Ht and seems to be a stronger connection with the past mitogenomes.

SUSTAINABLE INTENSIFICATION

P031

Hemp cakes composition and ruminal degradability as influenced by the cold-pressing parameters

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The growing consumers interest in the oil has made available several hemp by-products for animal feeding. The main of them are the cakes resulting from mechanical extraction of oil which may contain remarkable levels of protein, but also varying amounts of fibre and fat in relation to both seeds' composition and extraction process. The aim of this study was to investigate

the influence of the pressure and the botanical variety on hemp cakes composition. Seeds from Futura75 and Uso31 cultivars with rather similar composition (respectively, in percent of dry matter, Crude protein, CP, 20.9 vs. 19.9, fat 23.6 vs. 23.3, NDF 48.8 vs. 49.6) were pressed in an experimental mechanical screw press powered by 2.2 kW electric motor and equipped with temperature sensors to control the oil extraction temperature. Each hemp variety was pressed at growing extraction pressures gained by fitting four different nozzle diameters on the screw press (14, 12, 8, 6 mm). For each pressure level, the seeds were pressed twice for a total of 16 cake samples which were analysed for chemical composition and in vitro digestibility of DM (IVDMD) and NDF (IVNDFD), determined based on a 48-h incubation in a Daisy II system. A two-way analysis of variance (proc GLM) was performed with variety ($n=2$), pressure ($n=4$), and their interaction as factors. Statistical significance was attained only between the extreme values of pressure (14 vs. 6 mm) and resulted in an increment of the concentration of NDF, ADF and lignin ($p < .05$) as an effect of the reduction of the fat content ($p < .05$). Despite the small differences between the whole seed compositions, the Uso31 and Futura75 cakes diverged for the CP, ADF ($p < .05$), NDF and lignin ($p < .001$), whereas no differences were observed for fat. It is self-evident that the pressure worked differently on the two varieties, though no significant interactions pressure*variety were highlighted. The IVDMD and IVNDFD were affected by both pressure and variety ($p < .001$) with the higher values observed for pressure at 14 mm and the variety Uso31. Overall, the nutritional characteristics of hemp cakes can be strongly influenced by the botanical variety even regardless of the chemical composition whereas they can be significantly modified only by more than doubling the pressure applied to seeds.

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P032

Feed insects for aquaculture: use of *Hermetia illucens* L. meal for *Sparus aurata* L.: chemical and microbiological characterization of the diets

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The use of the *Hermetia illucens* meal (HIM), as an ingredient in feed, represents a way to achieve more sustainable production