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Management practices and welfare of dairy goats in Greece

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The objective was to assess management practices related to animal welfare in dairy goat farms in Greece. A random sample of 18 dairy goat farms located in Northern and Central Greece was used. The average farm comprised 390±448 goats with an average milk yield of 230±143.9 kg/milking period. The prevailing farming system was semi-extensive. The average grazing time and walking distance of goats was 5.9±2.35 hours and 5.5±2.88 km, respectively. There was also one intensive and one semi-intensive farm. Reared goats belonged to six indigenous Greek breeds (Eghoria, Skopelos, Chalkidikis, Paggaiou, Aridaias, Serres; n=11 farms) and three foreign breeds (Damascus, Anglo-Nubian, Murciano-Granadina; n=5 farms) whereas two farms had composite populations of crossbred goats. Housing and management practices were recorded by a group of veterinarians using a designated questionnaire. Records included information on flock size, housing conditions and shed dimensions, milking procedures, vaccinations, and antiparasitic treatments; available space per goat was calculated. Descriptive statistical analysis was performed. Results showed that in 39 and 16% of farms, available space per goat was less than 2 and 1.5 m^2, respectively. In most farms (68%), machine-milking was performed; use of gloves by milkers and post-dipping were reported in 28 and 5% of cases, respectively. Moreover, 21, 42 and 84% of farmers did not vaccinate against *Clostridium perfringens*, *Mycoplasma agalactiae* and *Chlamydophila abortus*, respectively. Routine treatments for endoparasites and ectoparasites were performed in 79 and 84% of farms, respectively. Overall, results indicate that milking procedures, lack of vaccination against common diseases and limited space availability are management practices associated with the welfare status of dairy goats in Greece. Further improvement of those practices is needed to increase animal productivity and welfare. This research has been co-financed by the European Regional Development Fund of the European Union and Greek National Funds through the Operational Program Central Macedonia 2014-2020 (KMP6-0083632; GRAEGA CHEESE).

Risk factors for navigation ability of laying hens at housing in an aviary system

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To evaluate the risk factors for navigation ability of two genotypes of laying hens at housing in an aviary system, 1,800 pullets, half Lohmann White-LSL and half Hy-line Brown, were randomly allocated at 17 weeks of age in 8 pens of an experimental aviary (3 tiers), according to a bi-factorial arrangement, 2 genotypes (brown vs white hens) × 2 types of pens (enriched or not enriched with additional perches). Data collected by video-recording at 17 and 20 weeks of age were used to assess the number of successful and unsuccessful landings from any part/equipment of the aviary to the floor. Risk factors related to failed landings were evaluated by multivariate logistic regression analysis through a forward stepwise selection using the PROC LOGISTIC of SAS. The regression coefficients were expressed as odds ratio (OR) with 95% confidence interval (CI). Compared to brown hens, white hens performed a significantly higher number of landings per hour in the observation interval (80.7 vs 35.4; $P<0.001$) with a higher success rate (94.8 vs 88.6%; $P<001$). Brown hens had higher odds of failed landings compared with white hens (OR: 6.65; 95% CI: 4.36-10.1). The logistic regression analysis showed significantly higher odds (OR: 1.90; $P<0.001$) of experiencing failed landings at 17 weeks compared to 20 weeks. No significant difference in the number or in the rate of success of landings was recorded between enriched and not enriched pens, where the logistic regression analysis only measured a trend (OR: 1.29; $P=0.09$). The odds of failed landings were greatly higher when comparing long with medium flight distance to floor (i.e. hens starting from the third vs the second tiers of the aviary) (OR: 31.1; $P<0.001$) and lower comparing short (i.e. hens starting from the first tiers of the aviary) with medium flight distance (OR: 0.17; $P<0.001$). In conclusion, under the condition of the present study, white hens exhibited higher navigation activity and ability compared to brown hens since the first week after housing; the navigation ability improved four after housing weeks; the enrichment with additional perches played a minor role. Long-term effects on space use should be evaluated over the laying period.