

171. A cross-sectional study of foot diseases and lesions in intensive dairy sheep farms in Greece

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Application: Foot diseases and lesions thereof constitute main causes of lameness in high-yielding, intensively reared dairy sheep, leading to remarkable production losses.

Introduction: In intensive dairy sheep farms, foot-related lameness has emerged as a significant health and welfare challenge. The objective of the present study was to assess and compare the prevalence of footrot, white line disease (WLD), hoof overgrowth and the resulting lameness, under various intensive dairy sheep farming systems in Greece.

Materials and methods: Thirty intensive dairy sheep farms were initially involved in the study (n = 10,630 ewes). Farmers were interviewed on-site using a structured questionnaire, and general information regarding farm characteristics were recorded. A multivariate statistical approach was used to produce the most representative typology of intensive farming systems and assign the farms into the ideal number of clusters. For this reason, principal component analysis was used with the retained principal components explaining ca. 86.5% of the observed variation. Afterwards, hierarchical cluster analysis was applied to determine the ideal number of clusters that the farms should be allocated into during k-means cluster analysis. From each cluster, three farms and 100 milking ewes per farm were randomly selected and enrolled in the study (n = 600 ewes). Occurrence of hoof wall overgrowth, foot lesions and lameness were recorded during routine foot-trimming, and the prevalence of foot lesions at the animal, the foot and the claw level were estimated. Comparisons between the clusters regarding the occurrence of foot lesions were made in SPSS v23 using the chi-square test.

Table 1

Prevalence of WLD and Footrot at the foot (n = 2400) and the claw (n = 4800) level, in the examined ewe population and the two clusters.

	Foot disease	Prevalence at the foot level (Number of feet affected)	Prevalence at the claw level (Number of claws affected)
Cluster 1	WLD ¹	12.5% (150)	7.1% (171)
	Footrot	2.8% (33)	1.5% (36)
Cluster 2	WLD	14.7% (176)	8.6% (206)
	Footrot	1.6% (19)	0.8% (20)
Overall	WLD	13.6% (326)	7.9% (377)
	Footrot	2.2% (52)	1.2% (56)

¹WLD: White Line Disease

Results: Farms were classified into two clusters (15 farms each), with the major assignment factor being annual milk production per ewe (mean ± standard deviation was 398.7 ± 40.55 and 300.7 ± 59.91 kg for cluster 1 and 2, respectively). Overall, 9.0% (54/600) of the examined ewes were lame, whereas, prevalence of footrot and WLD at the animal level were 8.0% (48/600) and 37.7% (226/600), respectively. Prevalence of WLD and footrot at the foot and the claw level are presented in Table 1. Hoof overgrowth and cracks on the hoof wall were observed in 99.3% (596/600) and 15.3% (92/600) of the ewes, respectively. At the animal level, prevalence of lameness was significantly higher in cluster 1 (11.3%, 34/300) compared to cluster 2 (6.7%, 20/300) [χ^2 (1, n = 600) = 3.99, P < 0.05]. Similarly, both at the foot and at the claw level, hoof overgrowth was significantly higher in cluster 1 compared to cluster 2 [χ^2 (1, n = 2400) = 15.39, P < 0.001] and [χ^2 (1, n = 4800) = 16.01, P < 0.001, respectively].

Conclusion: In intensively reared dairy sheep, milk production seems to be a challenging factor for the foot health. Prospective studies to assess the long-term effects of foot diseases and lesions are crucial to better understand the epizootiology of foot-related lameness.

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