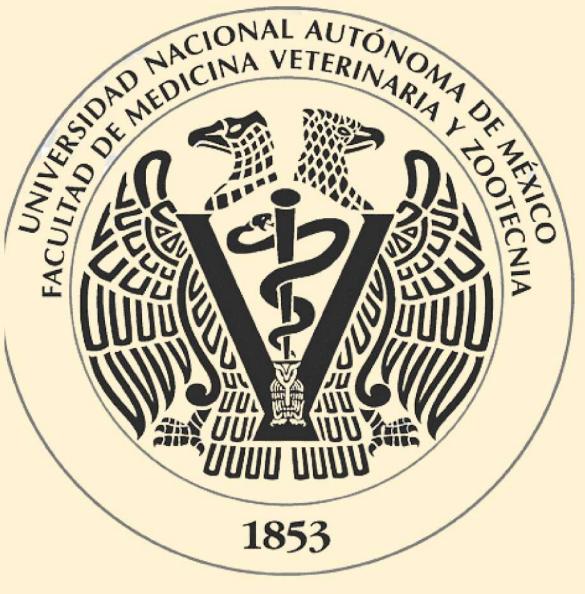


RELATION OF DAIRY GOAT CHRONIC DISEASES AND HAIR CORTISOL IN AN INTENSIVE GRAZING PRODUCTION SYSTEM

J.I. Ortega Cortés*, Y.M. Domínguez Hernández*, A.M. Terrazas García†, L. Cobos Marín‡, J.G. Perera Marín§ and I.E. Candanosa Aranda*



*Faculty of Veterinary Medicine and Zootechnics, Center for Teaching, Research and Extension in Animal Production in Highlands, National Autonomous University of Mexico, Tequisquiapan, Querétaro, MX, †Faculty of Superior Studies Cuautitlán, Department of Livestock Sciences., National Autonomous University of Mexico, Cuautitlán, Estado de México, MX and ‡Faculty of Veterinary Medicine and Zootechnics, Department of Microbiology and Immunology and §Faculty of Veterinary Medicine and Zootechnics, Department of Reproduction, National Autonomous University of Mexico, Mexico City, MX

INTRODUCTION

There is evidence of the relation between animal welfare and the presence of chronic diseases (1, 2). Most of dairy goat herds, deal with at least one chronic disease such as caprine arthritis encephalitis (CAE), paratuberculosis (PTB), toxoplasmosis, caseous lymphadenitis, among others (3). Hair cortisol concentration has been proved as a reliable chronic stress indicator in goats (4).

MATERIALS AND METHODS

A group of 70 grazing dairy goats were oestrus-synchronized, 43 pregnant were selected. Blood samples were taken for leptospirosis diagnosis by Microscopic Agglutination Test (MAT), while CAE, PTB and brucellosis via Luminex multiplex. Hair samples were taken (3 d before mating, 7 d postpartum, 60 and 150 d of lactation) for cortisol determination via ELISA assay. SAS® software for statistical analysis with Proc Univariate, Shapiro Wilk, ANOVA with repeated measurements and Tukey tests. Significance level P<0.05.

RESULTS AND DISCUSION

	FIG 1			
Frequency, prevalence and number of diseases diagnosed in dairy goats.				
Number of				
diseases	Diseases	Frequency	Prevalence	
0		6	14	
1	CAE	8	18.5	
	Lepto	6	14	
	Total	14	32.5	
2	CAE+Lepto	10	23.5	
	CAE+PTB	8	18.5	
	Total	18	42	
3	CAE+Lepto+Par	3	7	
	AEC+PTB+Par	1	2.25	
	AEC+Lepto+PTB	1	2.25	
	Total	5	11.5	
	ne Arthritis Encephalit			
PTB=	paratuberculosisPa	ar= parasites. r	า=43	

Previous studies of leptospirosis in the Mexican highlands report prevalence of 37.9%, the prevalence observed in the present study is higher than previously reported (41.43%)(5). CAE prevalence of 11% was reported for serological studies conducted in Mexican goats, contrasting with prevalence observed in the present study (72.09%)(6). PTB prevalences are similar to the ones reported for the region and productive system (46.5%)(7) (Fig 1). Previous studies showed the relation of the administration of *S. aureus* with febrile response, disease behavior and cortisol concentrations (8). A recent identified that the administration of LPS is related to the increase in cortisol concentrations in saliva and plasma of goats (9) (Fig 2).

Variable	Mating	Postpartum	60d	150d	Р
Hair cortisol (pg/ml)	11.02 ±0.84 a	10.49 ± 0.32 a	12.86 ± 0.88 ab	14.71 ± 0.95 b	0.008

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CONCLUSIONS

Association beetween number of diseases and higher cortisol concentrations was demostrated. In other words, goats showed more chronic stress if more diseases were positive. It is necessary to study other stimuli that raise cortisol concentrations, such as pain.

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