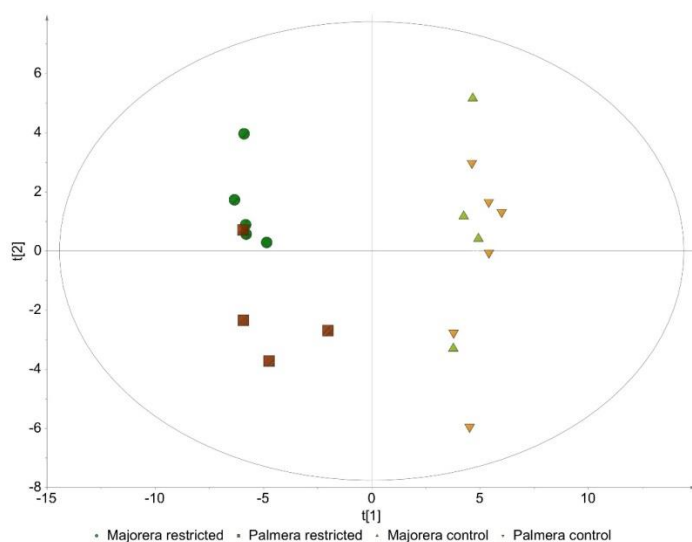


Fatty acids profile of mammary gland and milk of Palmera and Majorera goat breeds subjected to weight loss

Mariana Palma¹, Susana P. Alves², Lorenzo Hernandez-Castellano^{3,4}, Juan Capote⁵, Noemí Castro⁴, Anastasio Argüello⁴, Manolis Matzapetakis¹, Rui J. B. Bessa², André M. de Almeida^{2,6,7}

¹Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa, Oeiras, Portugal. ²CIISA, Faculdade de Medicina Veterinária da Universidade de Lisboa, Lisboa, Portugal. ³ Veterinary Physiology, Vetsuisse Faculty, University of Bern, Switzerland. ⁴Universidad de Las Palmas de Gran Canaria, Arucas, 35413 Canary Islands, Spain. ⁵ICIA, Valle Guerra, Tenerife, Spain. ⁶Instituto de Biologia Experimental e Tecnológica, Oeiras, Portugal. ⁷Ross University School of Veterinary Medicine, PO box 334, St. Kitts, West Indies
mpalma@itqb.unl.pt

Goat dairy products are an important source of animal protein in the Mediterranean and the tropics. During the long dry seasons, pastures scarcity lead animals to lose up to 40% of their body weight, a condition known as Seasonal Weight Loss (SWL), that is one of the major limitations in ruminant production. Some breeds show higher tolerance to SWL and have therefore relevance to understand the physiological aspects of SWL. In the Canary Islands there are two dairy goat breeds differently adapted to SWL: the Palmera, evolved in a rainy climate and susceptible to SWL; and the Majorera, well adapted to arid environments showing tolerance to SWL. Fat is the milk component most affected by environmental and physiological conditions, and with major influence in its organoleptic qualities. Herein, we aimed to study the influence of feed-restriction in the fatty acid profile of the mammary gland and milk of the Palmera and Majorera goat breeds. Goats in mid-lactation from each breed were divided in a control group and a restricted-fed group. Milk and mammary gland biopsies were collected at the end of the experimental period (23 days) and the fatty acid profiles were established. The most representative fatty acids in mammary gland were oleic acid, palmitic acid and stearic acid. Most of the differences observed in this tissue were due to the treatment-effect and no differences were observed due to breed-effect. In milk, the four more abundant fatty acids were palmitic acid, oleic acid, capric acid and myristic acid. However, considering the total fatty acid composition, saturated fatty acids were the most representative. Most of the differences found in both breeds were caused by the treatment-effect. The treatment-effect on the fatty acid profiles was more marked in the milk samples than in the mammary gland biopsies. However, most of the fatty acids affected by the treatment-effect were observed in both samples (milk and mammary gland). Milk seems to be more susceptible to external changes, such as SWL. These results demonstrate the effects of feed-restriction in the milk fatty acids profile of the studied breeds and consequently its nutritional properties.



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