

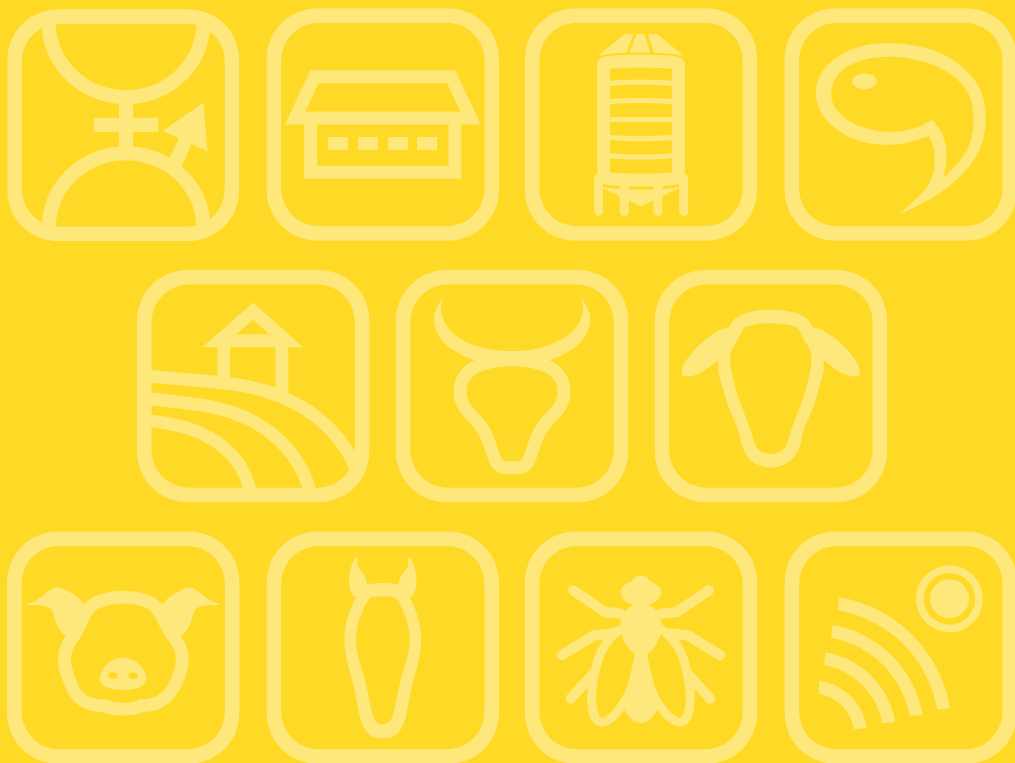
Adaptive capacity of Mediterranean sheep over morphological traits at different physiological status

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Small ruminants represent a major livestock resource throughout the Mediterranean area. However, most of them are raised under low nutritional quantitative and qualitative inputs. In such conditions, the use of animal's body reserves (BR) is inevitable to cover their energy requirements. In this context, we studied, in the Adapt-Herd PRIMA Project, the productive performance of some Mediterranean sheep breeds from France, Egypt, Spain, and Tunisia. For this, and during two years, the body weight (BW) and body condition score (BCS) of ewes were recorded at different physiological stages (mating, middle and late pregnancy, lambing, during suckling and lamb's weaning). The intra and inter flock's variabilities in BW and BCS and related reproductive and productive parameters were recorded. A direct relationship between reproduction performance and ewes' BW, BCS was confirmed in Egyptian, French and Tunisian breeds. During pregnancy all flocks decreased the BCS, showing BR mobilization since mid-pregnancy. The decrease was more noticeable for Tunisian and Egyptian ewes, to face shortage nutrition during pregnancy which occurred in summer, and French Romane breed when ewes are reared on Mediterranean rangeland. All ewes mobilized their BR from late pregnancy to the end of suckling periods, to cover the lamb growth's requirements. However, when the lambs were weaned and/or their nutritional condition was improved, ewes were able to restore BRs, reaching higher BW and BCS. The lambs' BW at birth was affected by the prolificacy (single > twins > triple litters) for all breeds. During suckling, the growth rate was similar regardless the birth mode, which may be partially explained by high nutritional supply for the breeds with high prolificacy and the low prolificacy for other breeds. In conclusion, we confirm the essential role of BR mobilization and accretion in the expression of adaptive capacities in the current context of climate change in the Mediterranean region.

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