

Effect of feeding regime in early life on fatty acid profile of meat from intensively finished beef bulls



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- In extensive production systems, the use of grasslands by calves is conditioned by their age at weaning. Thereafter, most beef calves in Southern Europe are intensively finished on concentrates and straw.
- Grass-based diets can improve meat nutritional quality, but the persistence of this effect after finishing on concentrates needs to be determined.

OBJECTIVE

Determine the influence of feeding regime in early life on meat nutritive value, by comparing two diets associated to different weaning strategies.



Materials and Methods

15 Parada de Montaña spring-born calves

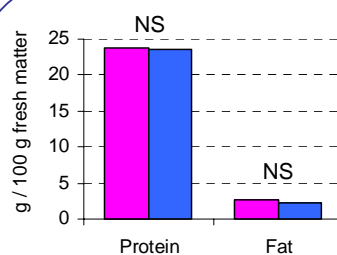
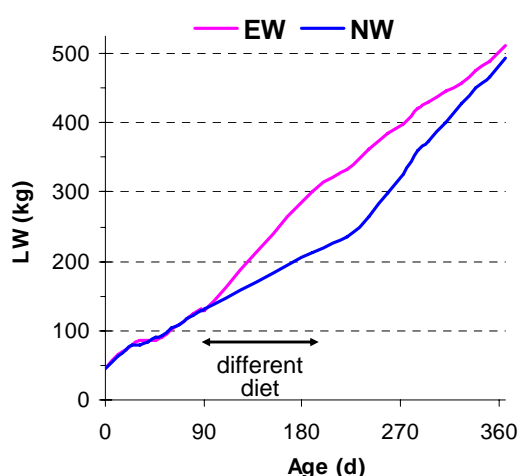
	Early-Weaned EW	Normally-Weaned NW
<i>Age at Weaning</i>	<i>90 d</i>	<i>180 d</i>
0 - 90 d	Lactation indoors	
90 - 180 d	Concentrate + straw ad lib.	vs. Lactation on high mountain pastures
180 - 365 d	Concentrate + straw ad lib.	
	<i>Slaughter at 365 d</i>	

Measurements:

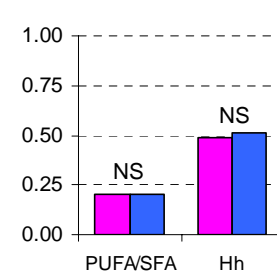
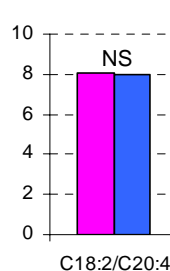
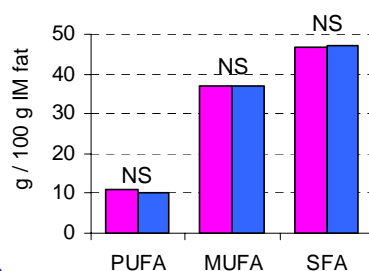
- Weekly weight, ADG by regression
- Meat composition (Longissimus thoracis)
 - chemical composition (AOAC procedures)
 - fatty acid profile of intramuscular fat samples by gas chromatography:
 - polyunsaturated (PUFA), monounsaturated (MUFA) and saturated (SFA) fatty acids
 - C18:2 / C20:4 fatty acids ratio
 - PUFA / SFA ratio
 - Hyper- / hypo-cholesterolaemic FA ratio (Hh)

Results

Weaning management resulted in different growth patterns



Weaning treatments and their associated diets did not influence meat composition or fatty acid profiles and ratios.



CONCLUSIONS

Despite the different feeding regimes of early- and normal-weaned calves from d90 to d180 (concentrates vs. milk and grass), a six-month period on the same fattening diet annulated at slaughter any difference in muscle chemical composition and fatty acid profile that may have arisen earlier.