The influence of grazing time on *Angelica archangelica* on volatile compounds and sensory quality of meat from pasture lambs

G. Thorkelsson, R. Jonsdottir, O.T.Hilmarsson,
A. Olafsdottir and E.Martinsdottir

55th International Congress of Meat Science and Technology, Meat - Muscle, Manufacturing and Meals, 19th August 2009

Introduction

Introduction

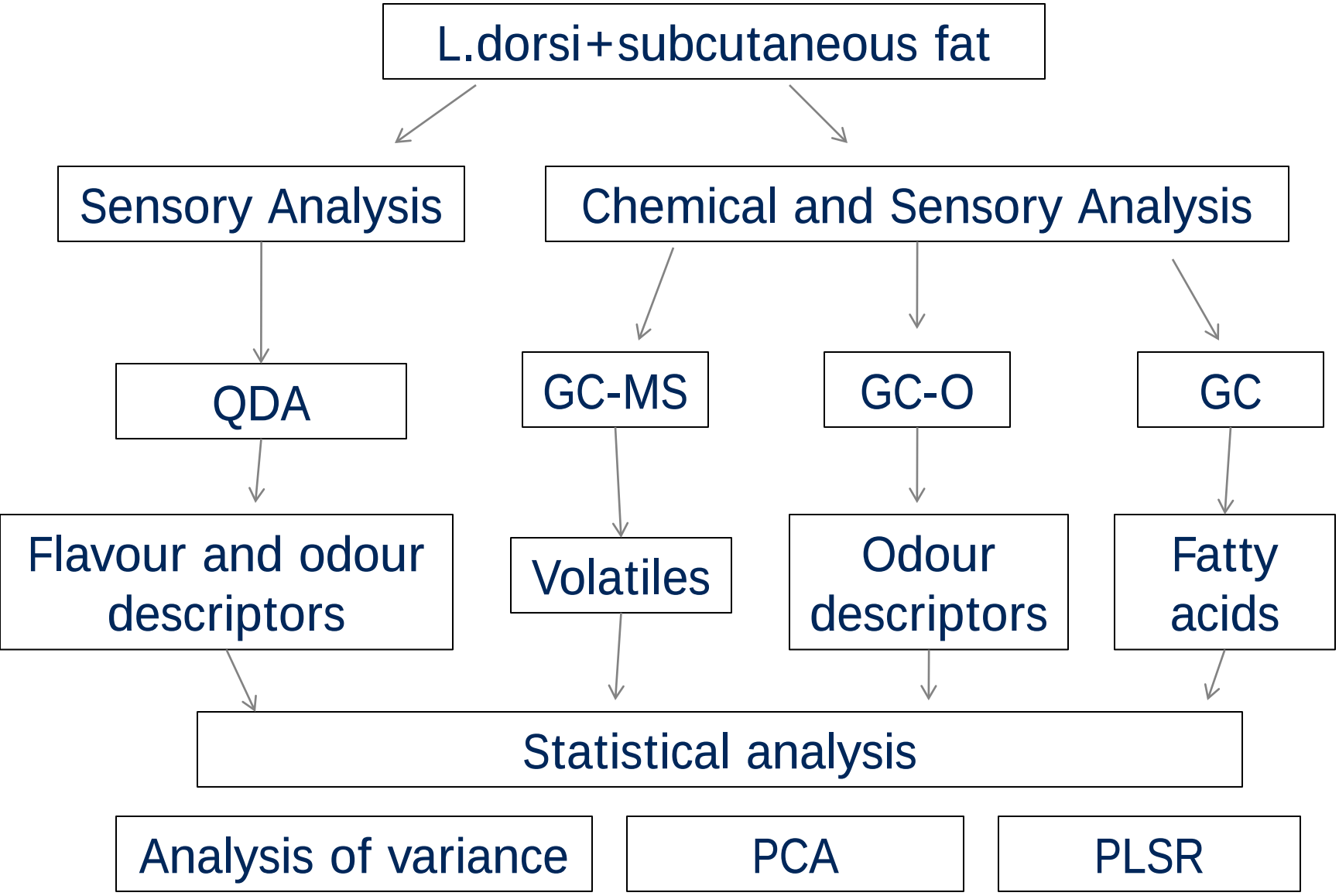
Objective

The aim of this study was to determine the influence of finishing traditional grazing lambs on a field of *Angelica archangelica* on volatile compounds, fatty acids and odour and flavour of cooked meat.

Treatments

	Weeks						
	0-3	4-6	7-9	10-12	13-15	16-18	19-21
Control							
3 weeks							
6 weeks							

Methods


L.dorsi+subcutaneous fat
Sensory Analysis
Chemical and Sensory Analysis
QDA
GC-MS
GC-O
GC
Flavour and odour descriptors
Volatiles
Odour descriptors
Fatty acids
Statistical analysis
Analysis of variance
PCA
PLSR

Results of QDA

Odour	Pasture	3 weeks	6 weeks	
Of meat				
Spicy	27	37	35	*
Lamb meat	52	48	46	*
Wooly	26	15	16	***
Fatty				
Of fat				
Fatty	36	30	29	*
Sweet	29	28	29	

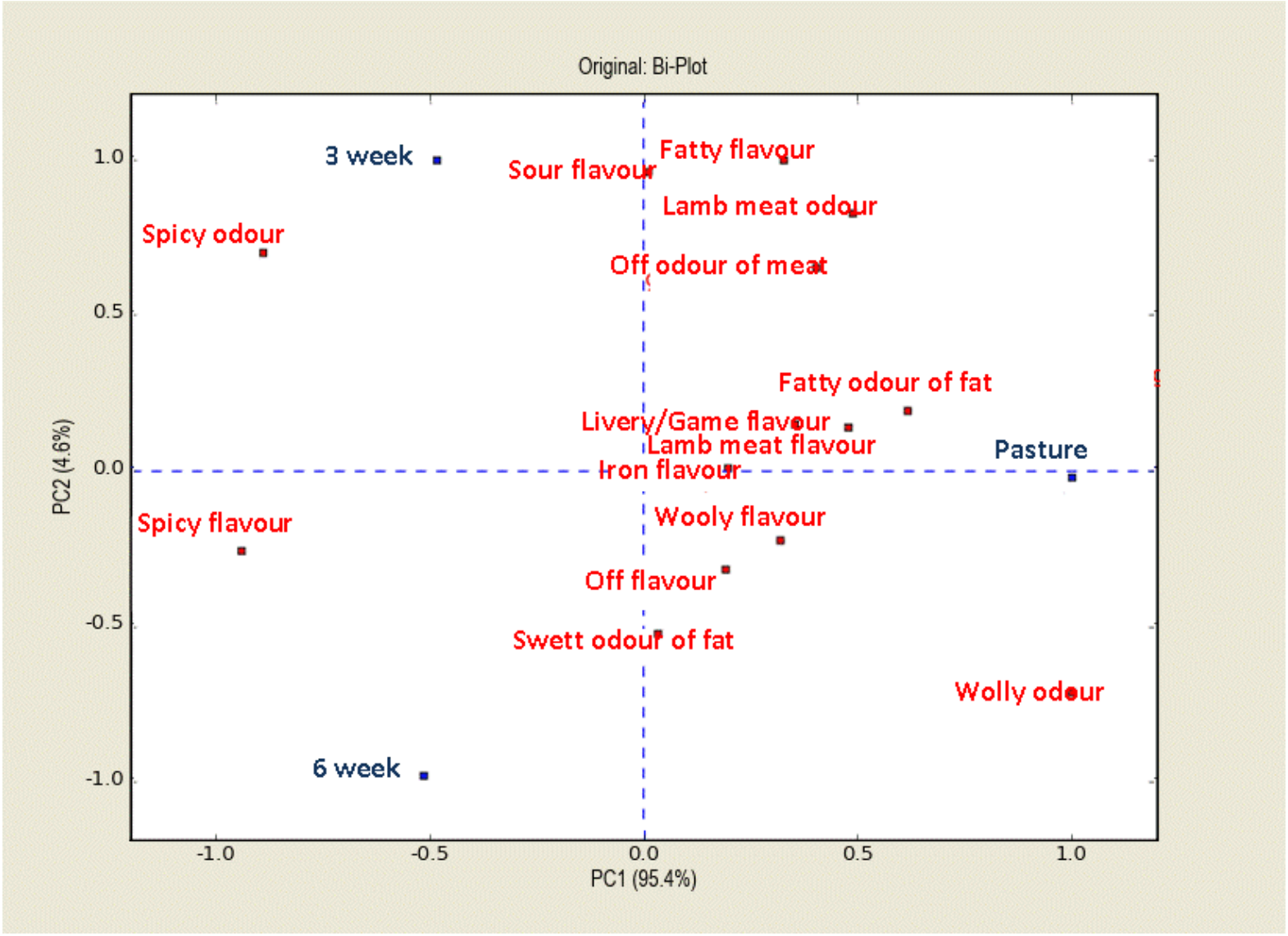
*(p<0.05), ** (p<0.01), *** (p<0.001)

Results of QDA

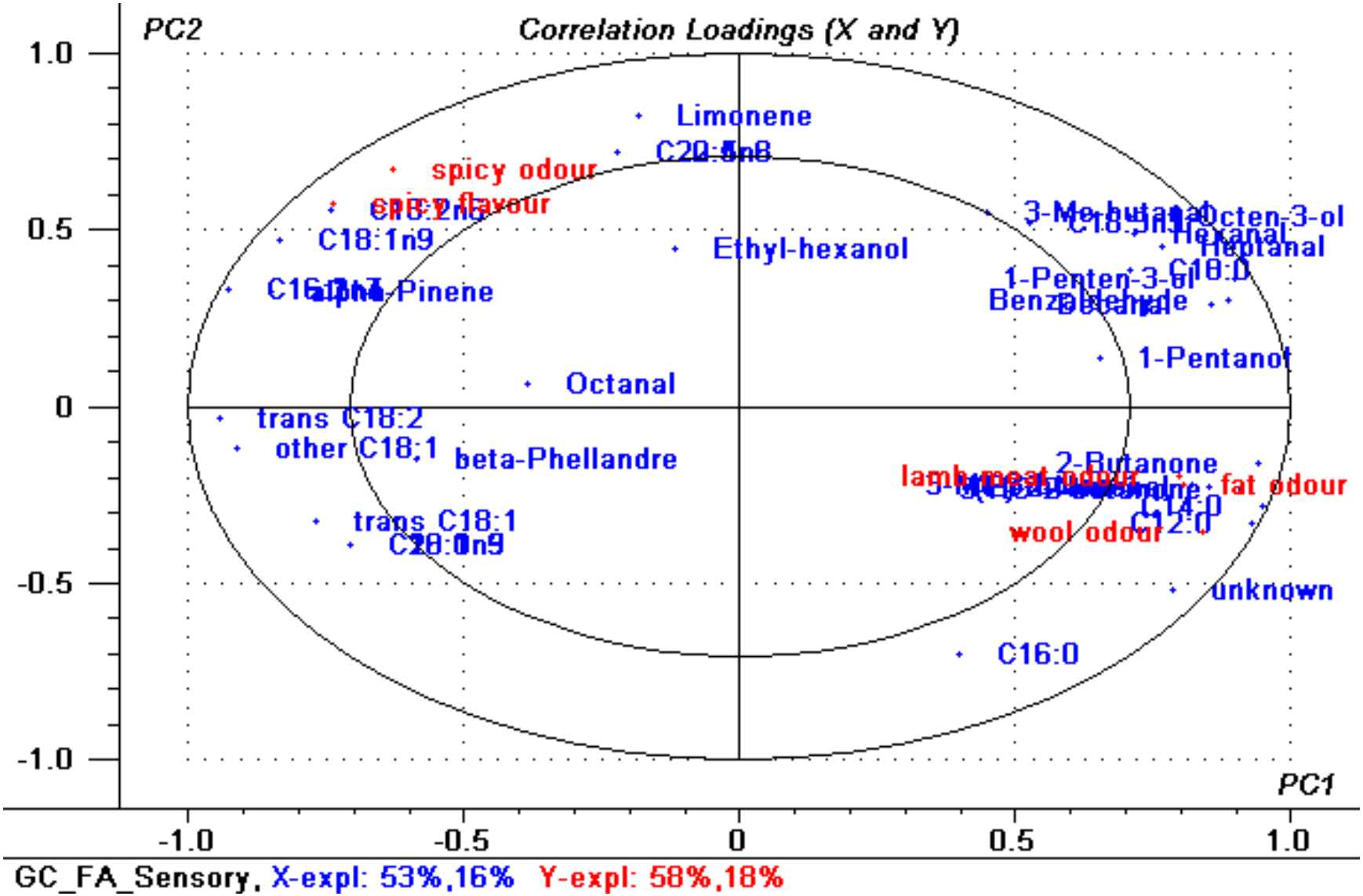
Taste	Pasture	3 weeks	6 weeks	
Spicy	25	35	36	**
Lamb meat	54	49	49	
Sour	22	23	20	
Livery/Game	43	40	39	
Wolly	14	10	11	
Iron	36	34	34	
Fatty	23	21	19	
Off flavour	6	4	5	

** ($p<0.01$)

Results of PCA



PLSR model plot



Conclusions

1.Grazing traditional grass pasture lambs on angelica fields changes the flavour of the meat

1.The time of grazing on angelica had some influence. It decreased lamb meat odour

1.The analysis of volatile compounds confirms the difference between the angelica lambs and the pasture lambs

Aknowledgements

The farmers Halla Steinólfsdóttir and Guðmundur Gíslason of Ytri Fagridalur, Skardstrond are thanked for providing the sheep and pastures for this trial. Sigridur Johannesdottir of Bunadarsamband Vesturlands is thanked for arranging the Angelica lamb meat project.

The Sheep Farmers Association of Iceland supported the project financially.