

Bones and meat quality of pork from early and late immunocastrated male pigs

Ivana Božičković, Radomir Savić, Dragan Radojković, Núria
Panella-Riera, Albert Brun, **Maria Font-i-Furnols**

The 75th EAAP Annual Meeting, Florence, Italy, September 4th, 2024



This work is part of a project that has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004770.



"Agreement on the Implementation and Financing of Scientific Research in 2024 between the Ministry of Science, Technological Development, and Innovation of the Republic of Serbia and the Faculty of Agriculture, University of Belgrade", contract number 451-03-65/2024-03/200116.



INTRODUCTION

- Boar taint is a problem in pork from entire male pigs
- Immunocastration is an alternative to surgical castration → increases fatness, but there is poor information on bones and histological properties effect.
- Different immunocastration strategies can be applied.



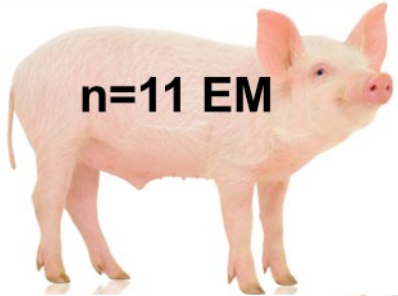
OBJECTIVE

The **aim** of the project was to characterize the **bones, carcass** and **meat quality** of pork from **entire male (EM)** pigs compared to **early (EIC)** and **late immunocastrated (LIC)** pigs.



MATERIALS & METHODS

n=11 EM



n=12 EIC
Improvac®

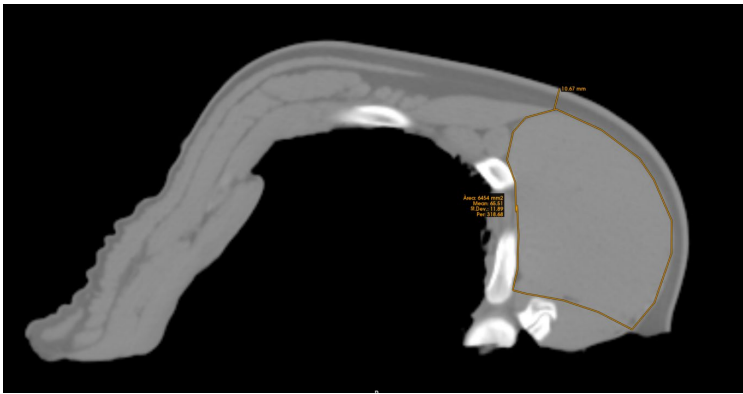
V1, 13 -V2, 8 weeks
before slaughter



n=14 LIC
Improvac®

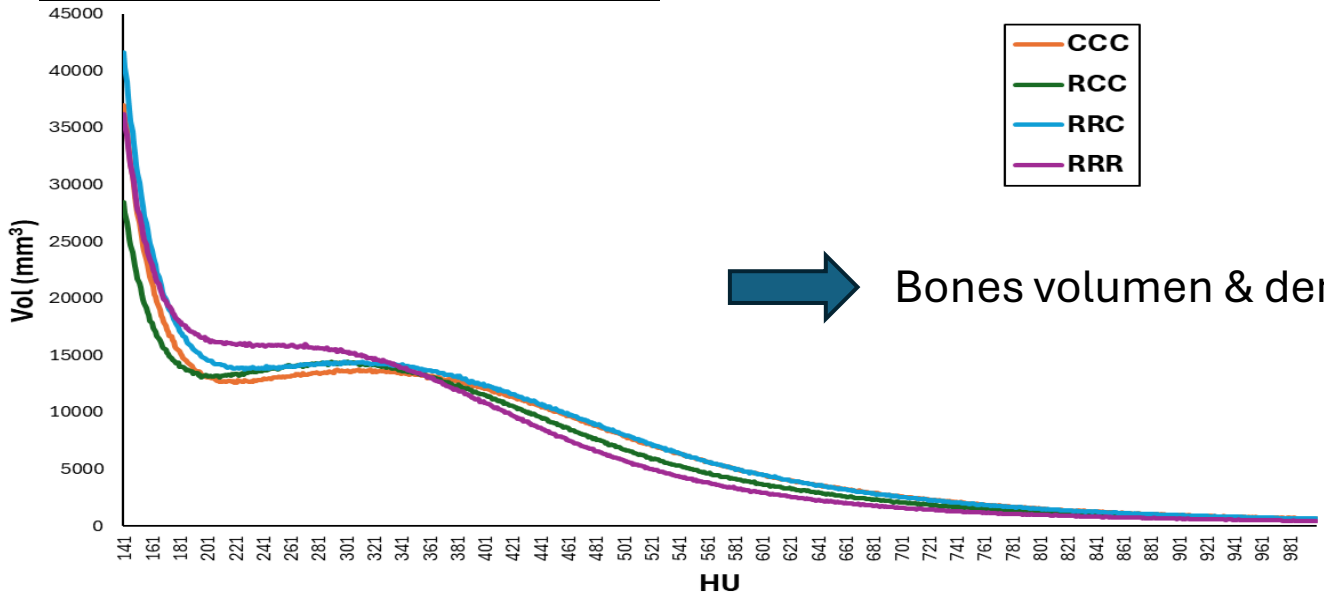
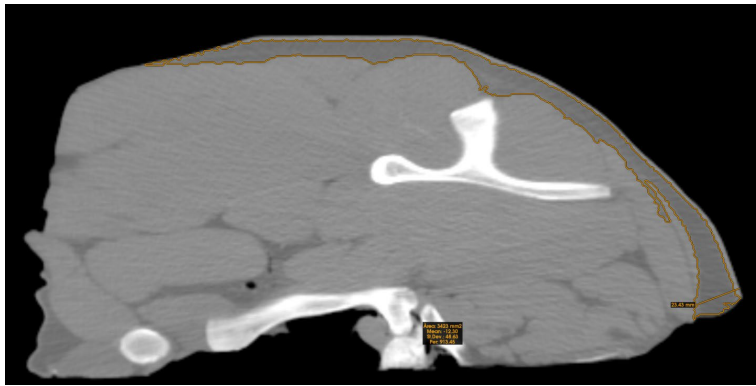
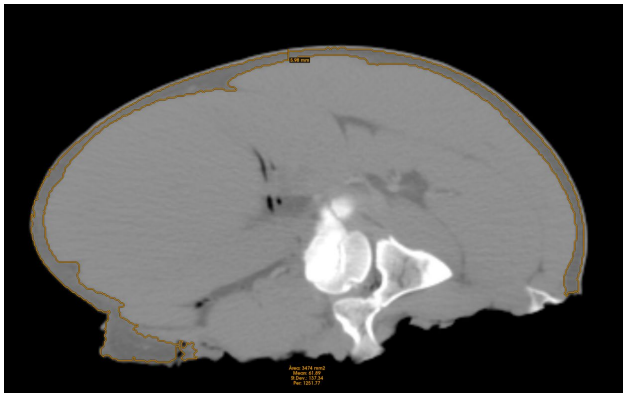
V1, 8 -V2, 4 weeks
before slaughter



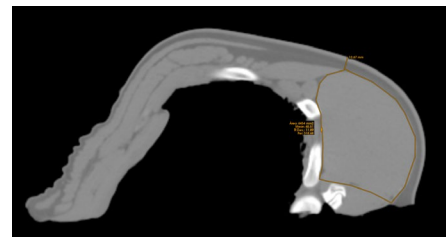
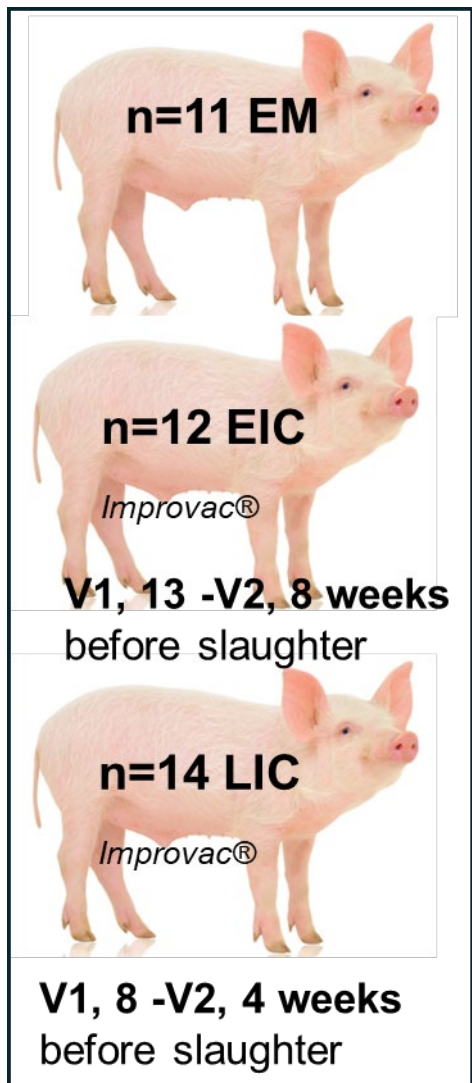


Loin area & fat thickness

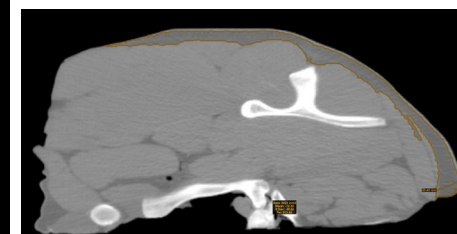
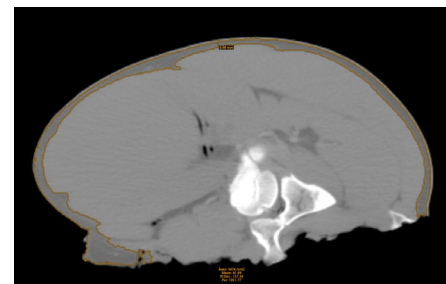
Fat area & thickness



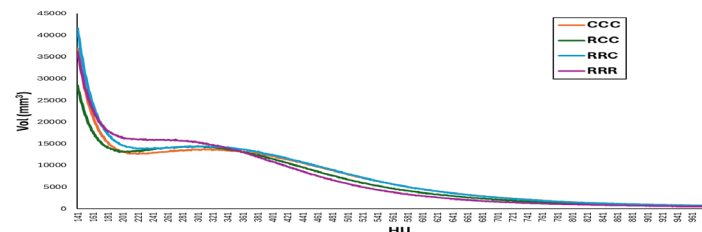
MATERIALS & METHODS



Loin area & fat thickness



Fat area & thickness



Bones volumen & density

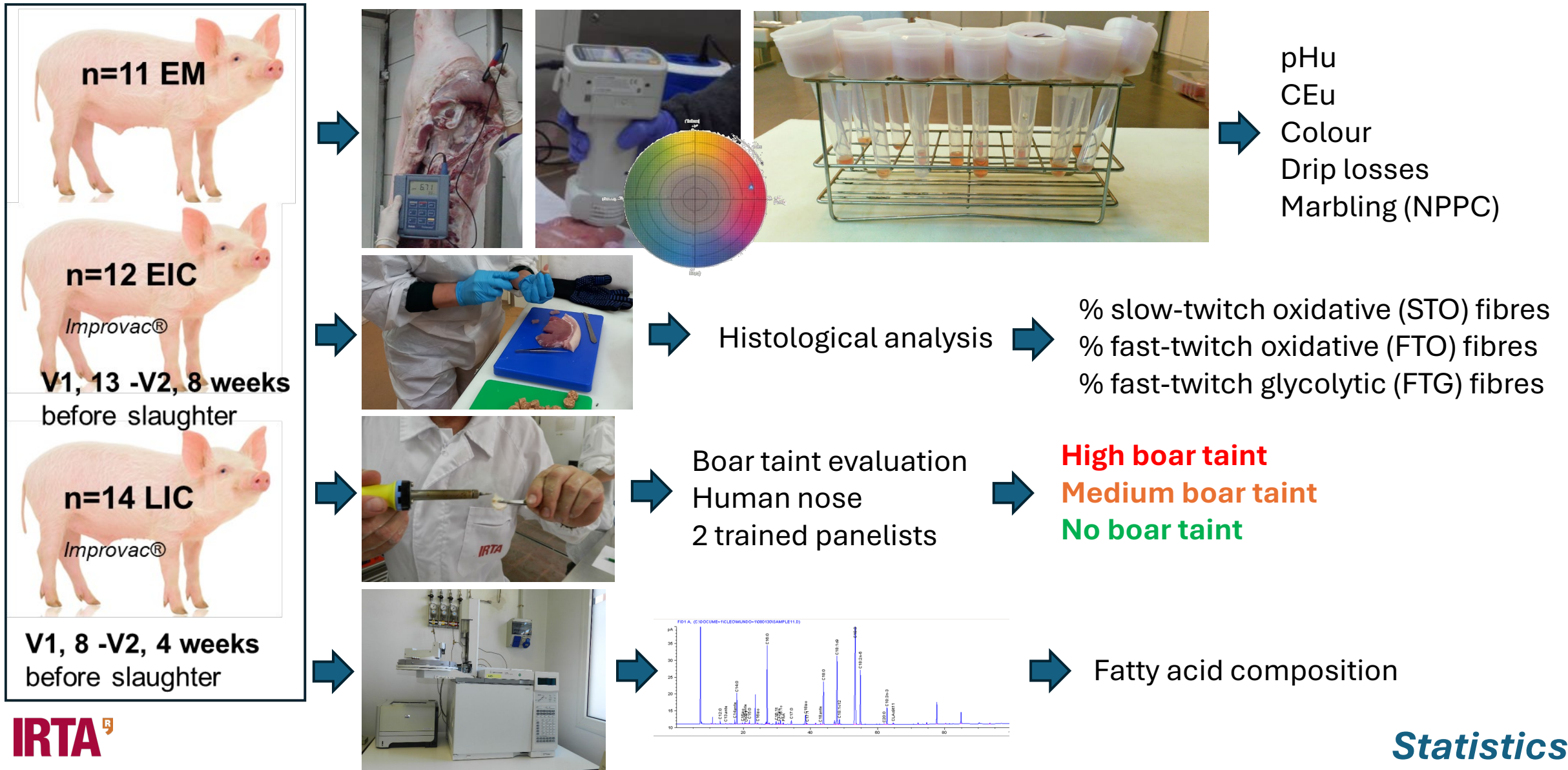


Testes (with and without epididymus) length and weight

Bulbourethral glands length and weight



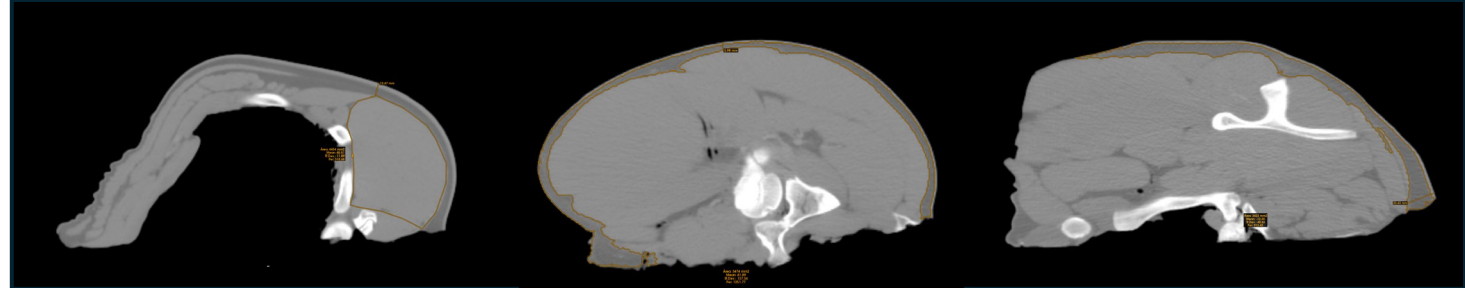
MATERIALS & METHODS





RESULTS

CARCASS CHARACTERISTICS



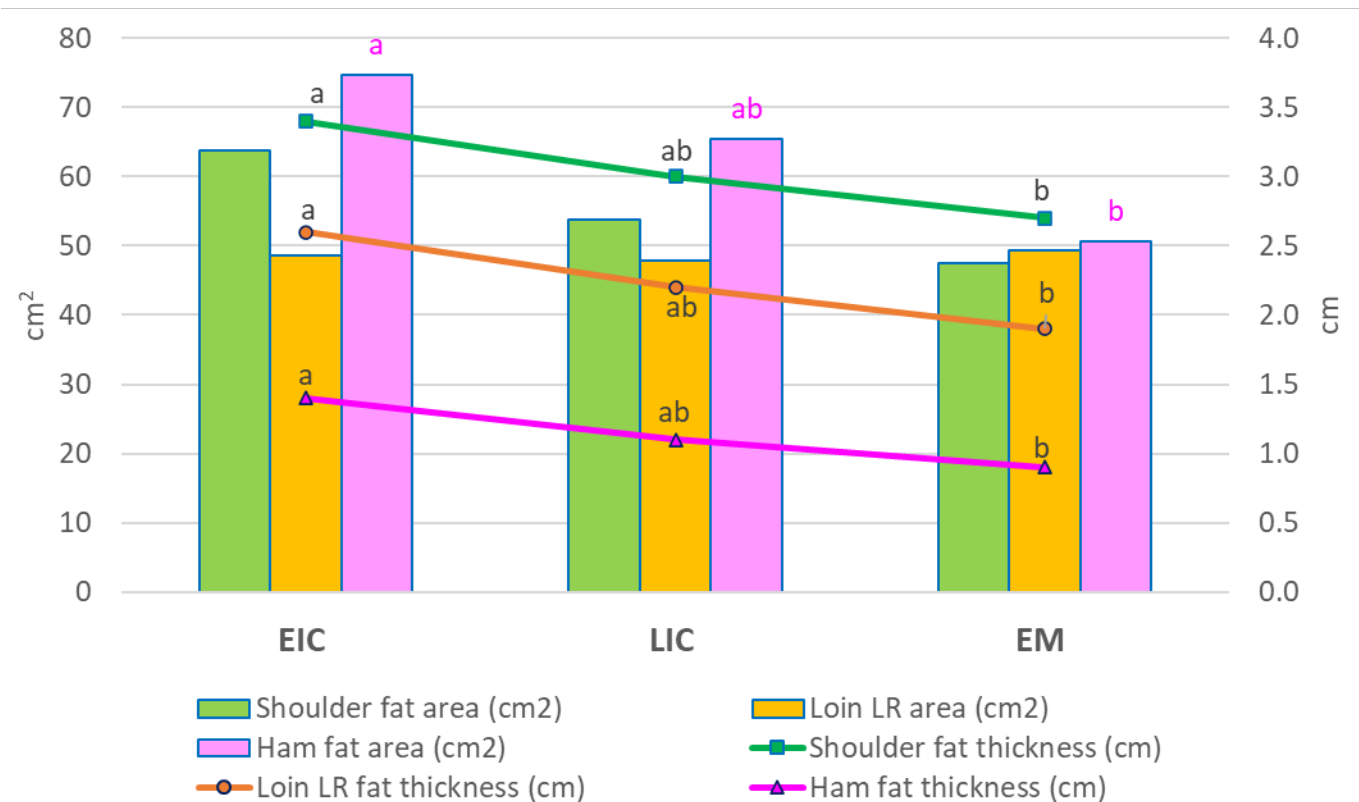
Slaughter weight:

EIC: 124.63 kg

LIC: 124.37 kg

EM: 119.40 kg

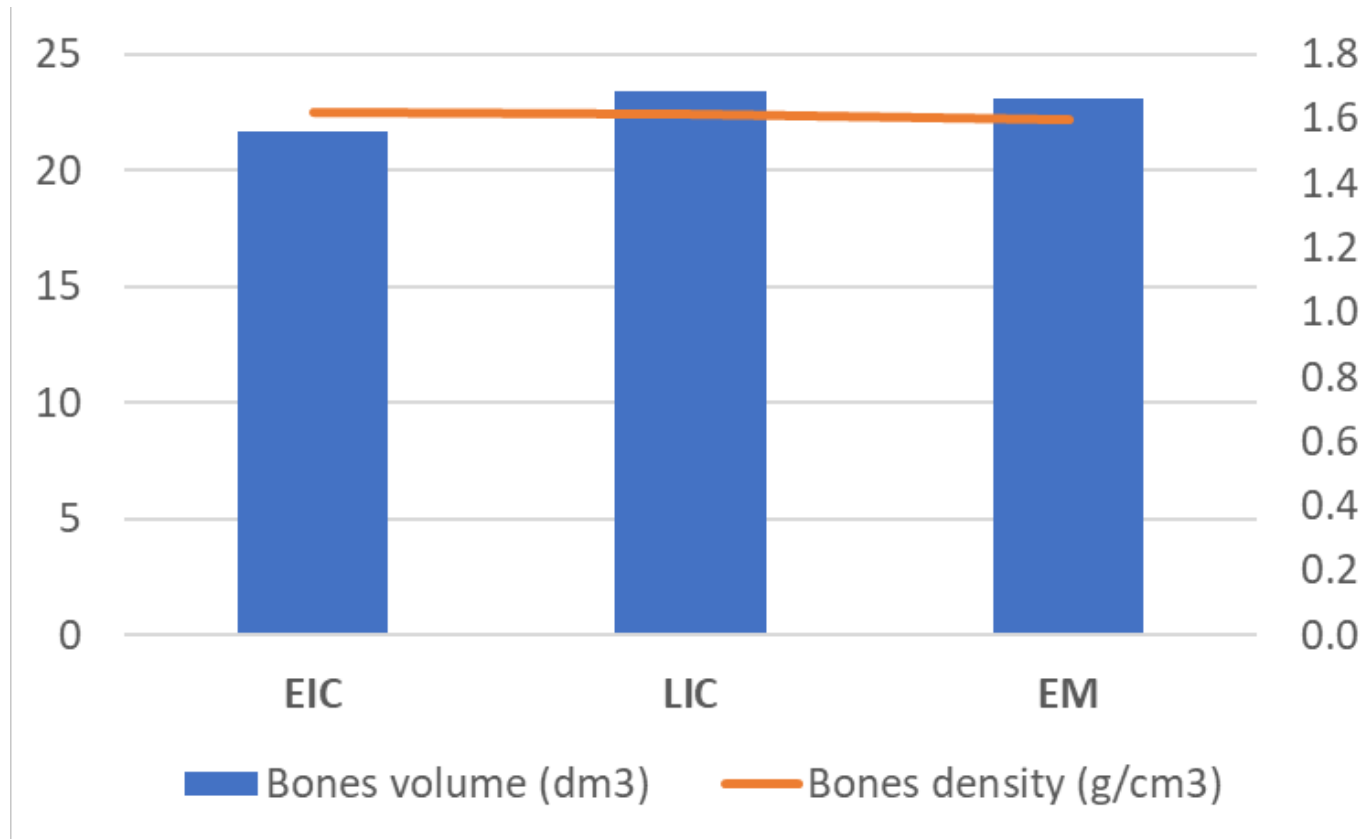
n.s.



IC increases fat content. EIC higher increase than LIC compared to EM.



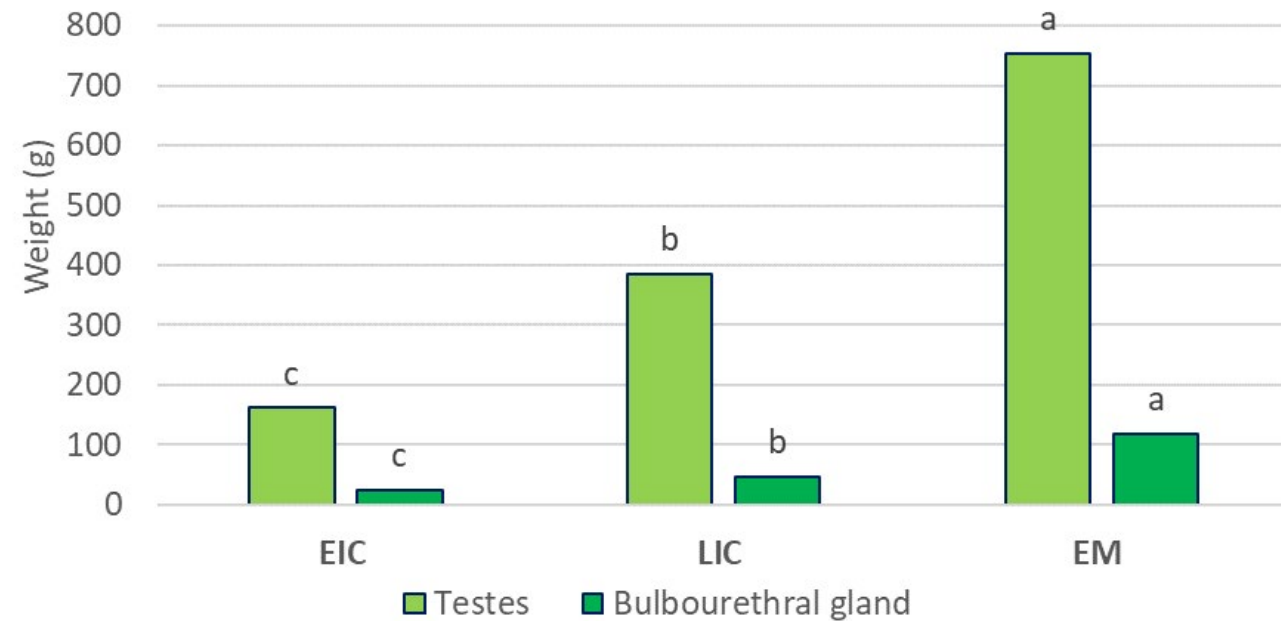
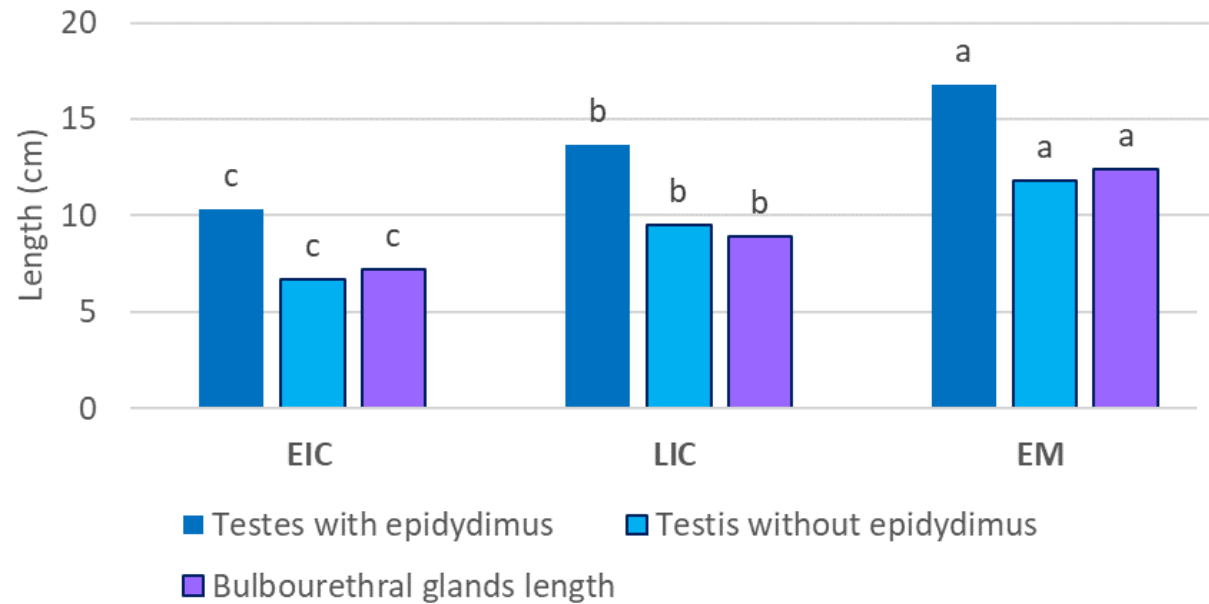
BONES CHARACTERISTICS



IC (LIC and EIC) does not affect bones characteristics.



REPRODUCTIVE ORGANS CHARACTERISTICS



IC decreases reproductive organs length and weight (EIC more than LIC)

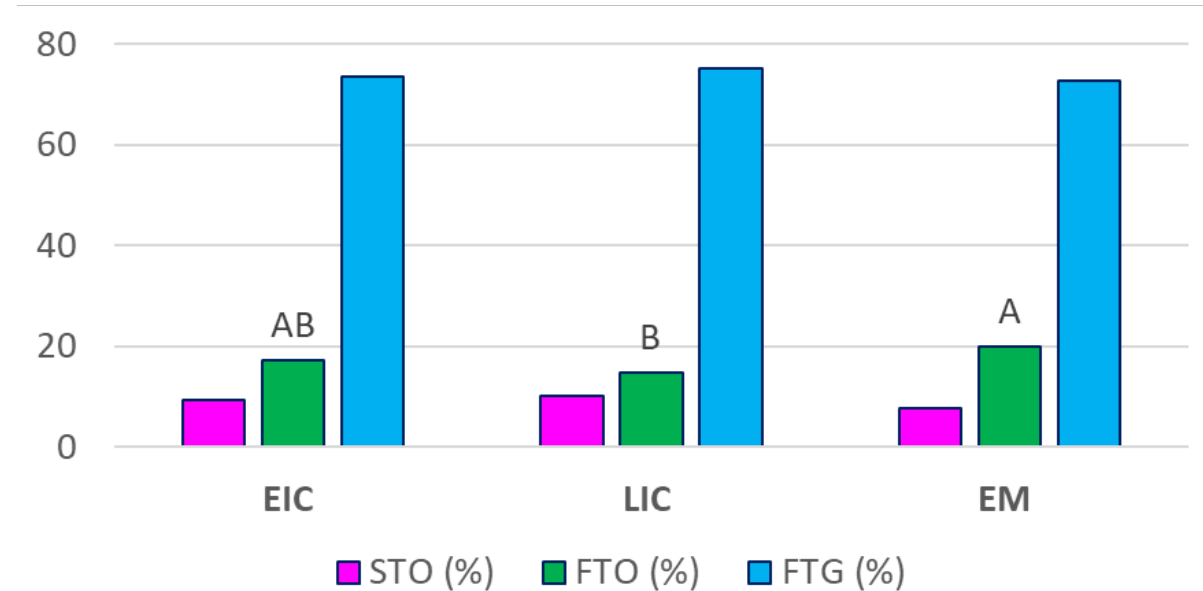


LOIN QUALITY CHARACTERISTICS

Meat quality

	EIC	LIC	EM	RMSE	P-value
pHu	5.8 ^B	5.9 ^A	5.9 ^{AB}	0.2	0.070
ECu (mS)	3.7 ^b	3.6 ^b	4.4 ^a	0.5	0.002
L*	49.9 ^a	46.7 ^b	46.8 ^{ab}	2.9	0.018
a*	0.0	0.1	-0.7	0.9	0.141
b*	10.6 ^a	9.8 ^{ab}	9.1 ^b	1.2	0.014
Marbling	1.7	1.7	1.4	0.6	0.468
Drip losses (%)	1.2 ^b	1.3 ^{ab}	2.2 ^a	0.9	0.034

Fiber type



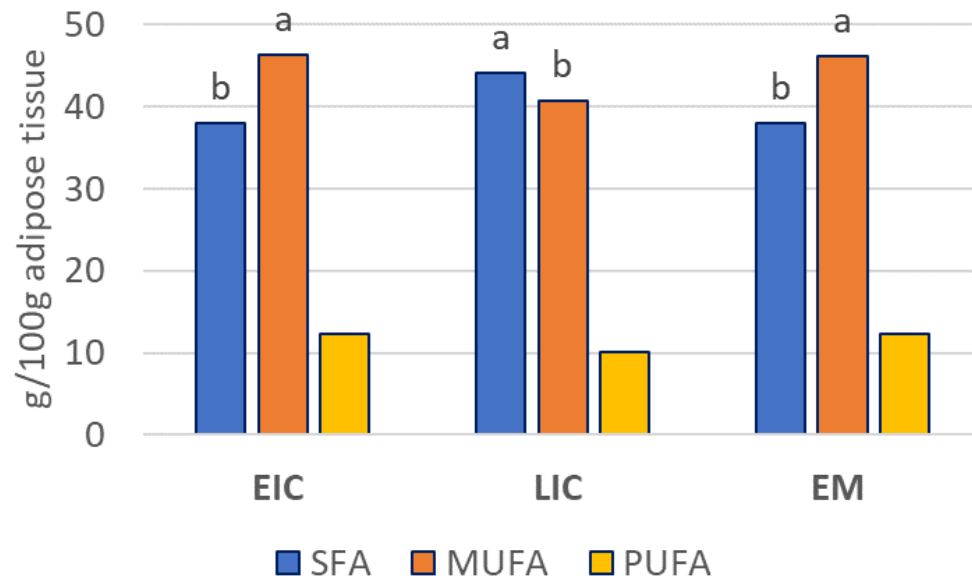
IC pattern not relevant effect on most of meat quality traits
IC lower EC and drip losses than EM

a,b P<0.05
A,B P<0.10

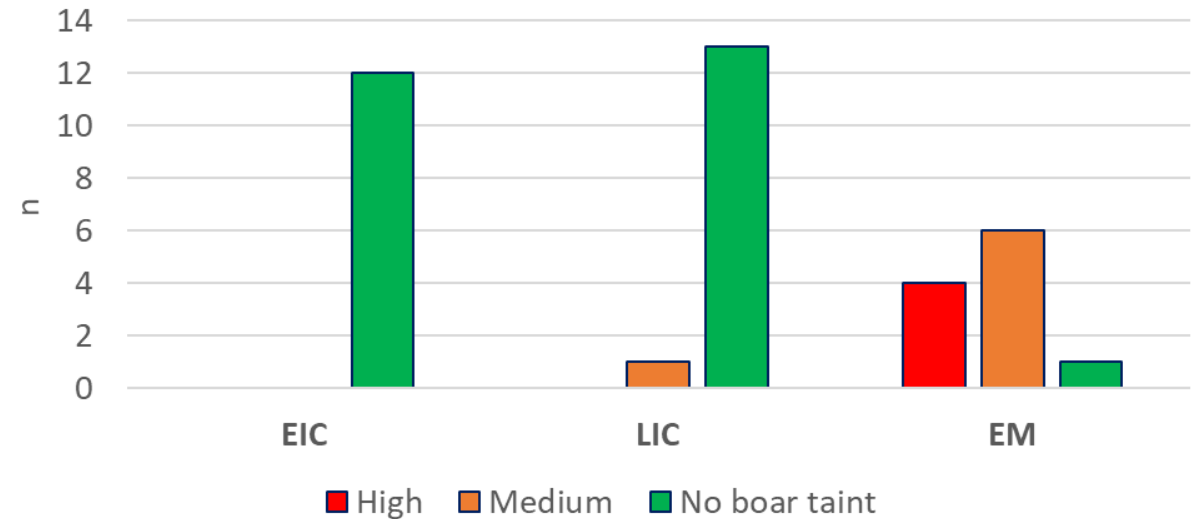


FAT QUALITY

Fatty acids



Boar taint



EIC decreases SFA and increases MUFA compared with LIC
IC practically eliminates boar taint



CONCLUSIONS

Under the conditions of the present experiment, immunocastration, both EIC and LIC, are good strategies to **increase fatness** and **reduce boar taint**, without having a relevant effect on **meat quality** and **bone characteristics**.





Maria Font i Furnols
maria.font@irta.cat