

# **TENDERLOIN AND FAT QUALITY OF PORTUGUESE LOCAL ALENTEJANO PIGS SUBMITTED TO DIFFERENT IMMUNOCASTRATION PROTOCOLS**

J.M. Martins<sup>1</sup>, L. Malhadas<sup>2</sup>, A. Albuquerque<sup>2</sup>, J. Neves<sup>1</sup>, F. Hernández-García<sup>3</sup>;  
M. Izquierdo<sup>3</sup>; R. Charneca<sup>1</sup>

<sup>1</sup>MED - Mediterranean Institute for Agriculture, Environment and Development &  
CHANGE - Global Change and Sustainability Institute, Departamento de Zootecnia,  
ECT - Escola de Ciências e Tecnologia, Universidade de Évora, Pólo da Mitra, Ap. 94,  
7006-554 Évora, Portugal

<sup>2</sup>MED & CHANGE, Universidade de Évora, 7006-554 Évora, Portugal

Corresponding author: J.M. Martins ([jmartins@uevora.pt](mailto:jmartins@uevora.pt))

<sup>3</sup>CICYTEX (Center for Scientific & Technological Research of Extremadura), A-V, km  
372, 06187 Guadajira, Badajoz, Spain

Corresponding author: J.M. Martins ([jmartins@uevora.pt](mailto:jmartins@uevora.pt))

The Alentejano (AL) pig, a traditional Portuguese breed, is highly valued for its premium meat products bearing PDO and PGI labels. These animals are typically raised under extensive conditions, reaching advanced ages and high body weights at slaughter. Surgical castration of males has been a common practice to prevent boar taint, an undesirable trait affecting sensory meat quality. However, with the potential prohibition by the European Union of this method, alternative methods must be considered. Immunocastration (IMC) is a promising option, although its application in extensively reared Alentejano pigs and its impact on meat quality requires further clarification.

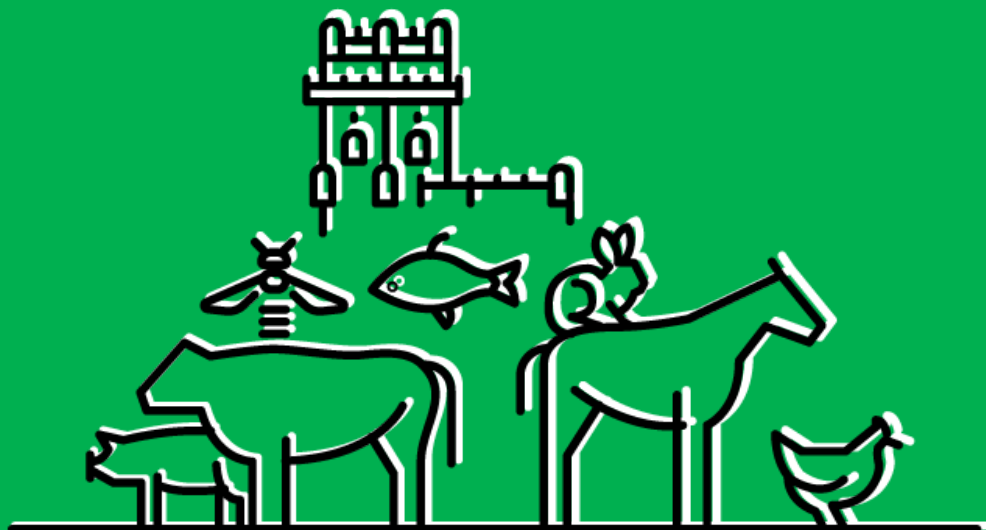
A trial was conducted under the scope of the SUMO project (Sustainability of the “Montado”) to assess how different immunocastration protocols influence meat quality in AL males. Thirty pigs, raised outdoors from 5 to 14 months of age (~52 to 191 kg body weight), were assigned to one of three groups (n=10/group): (1) a control group of surgically castrated animals (C); (2) an early immunocastration group (IMCP) receiving

four doses of Improvac® starting at 5 months; and (3) a late immunocastration group (IMCT) receiving three doses beginning at 10 months. The animals were housed in three parks, each offering over 100 m<sup>2</sup> per pig, with group shelters and individual feeding/drinking stations allowing controlled intake. The feeding strategy, based on commercial practices for pigs destined for the “Montanheira” finishing system, included a period of feed restriction prior to fattening.

Pigs were slaughtered at an average weight of 190.6 kg, and samples of the *Psoas major* (PM) and dorsal subcutaneous fat (DSF) were collected and analysed. In PM, moisture, total protein, total ashes, ultimate pH, total collagen and CIE colour values were not affected by treatments. However, IMCT pigs showed significantly lower intramuscular fat content compared to C ones, with IMCP pigs presenting intermediary values. In DSF, moisture and protein were significantly lower in C and IMCP when compared to IMCT pigs, while total lipid content was higher in C and IMCP groups. These results suggest that early immunocastration yields meat quality characteristics like those of surgically castrated pigs, while late immunocastration leads to a leaner meat and fat tissue with reduced lipid content, likely due to the delayed Improvac® administration in that group.

**Keywords:** Alentejano pig, immunocastration, tenderloin, fat, meat and fat quality

**Acknowledgements:** This work was funded by the SUMO Project: Montado Sustainability (PRR-C05-i03-I-000066), supported by the PRR - Recovery and Resilience Plan and European Funds NextGeneration EU, and by Portuguese national funds through FCT/MCTES under project UIDB/05183. MED  
(<https://doi.org/10.54499/UIDB/05183/2020>;  
<https://doi.org/10.54499/UIDP/05183/2020>); CHANGE  
(<https://doi.org/10.54499/LA/P/0121/2020>).



# **ZOOTEC 2025 PORTUGAL**

## XXV CONGRESSO DE ZOOTECNIA

### Livro de Comunicações

[www.zootec.apez.pt](http://www.zootec.apez.pt)

[geral@apez.pt](mailto:geral@apez.pt) | 912 239 527

