Immunocastration in heavy pig production: growth performance and carcass characteristics

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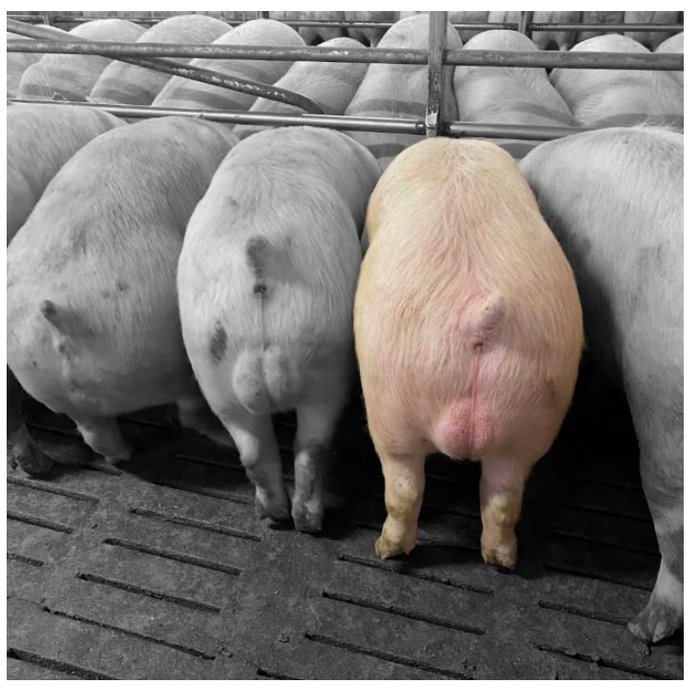


1. Introduction

Immunocastration, through a process of active immunization which ends with the suppression of testicular function, is an effective method to prevent the presence of boar taint, avoiding pain and stress associated to surgical castration [1].

Several studies have evaluated its impact on productive traits and carcass characteristics in light pig production, whereas these aspects were less studied in heavy pig production [2-4].

Our aim is to compare growth performance and carcass characteristics in immunocastrated and surgically castrated pigs, raised for heavy pig production.

2. Materials and Methods

166 commercial-hybrid male pigs were randomly allocated to two treatment groups:

- Immunocastration (IC; n=83), pigs receiving Improvac® at 15, 22-24, 32, and 36 weeks of age
- Surgical Castration (SC; n=83), pigs surgically castrated at 4 days of age

Animals were kept under the same feed and housing conditions, in compliance with Dir. 2008/120/EC.

- IC and SC pigs were slaughtered respectively at 40 and 41 weeks of age.
- Animals were weighed across the experimental period and average daily gain was calculated.
- At slaughter, carcasses were weighed and classification was made accordingly to Decision 38/2014/EC using the Fat-O-Meter system.

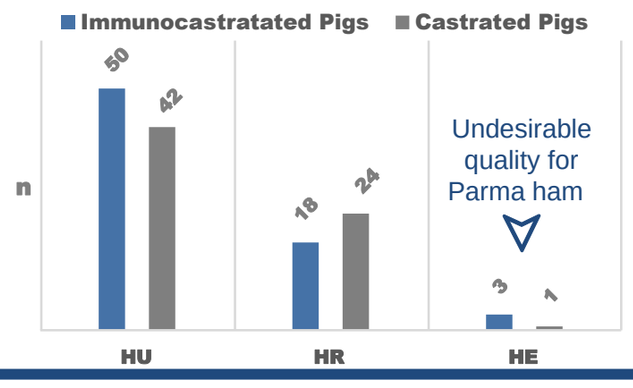
3. Results

Productive performance and carcass traits are reported below.

	Immunocastrated Pigs	Surgically Castrated Pigs	T-test
Average Daily Gain *(fattening phase_ 5-9 months of life) (g)*	820	710	
Average Daily Gain *(fattening phase_ last 2 weeks of life) (g)*	1020	770	
Live weight at slaughter *(kg)*	180.99±14.54	171.32±12.52	*p*=0.007
Hot carcass weight *(kg)*	150.54±12.48	145.10±10.75	*p*=0.007
Fat thickness *(mm)*	30.38±4.94	32.31±4.72	*p*=0.022
Muscle thickness *(mm)*	55.34±8.94	58.47±6.48	*p*=0.022
Lean meat content *(%)*	51.67%	50.86%	

- Immunocastrated pigs showed faster growth rate, reaching a higher slaughter weight than barrows.
- Hot carcass weight was also superior in these animals.
- Both fat and muscle thickness were lower in immunocastrated pigs, and as a result they showed higher percentage of lean meat.

Carcasses were classified as follows:



4. Discussion

Our results confirm that immunocastration is an interesting alternative to surgical castration in heavy pigs, as neither performance nor productive quality are negatively influenced. Further studies are required to evaluate sustainability in terms of animal welfare and economic impact in this production system.

References

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Acknowledgements

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Ethic statement

The protocol was approved by the Animal Welfare Committee of the University of Milan (OPBA_26_2020), according to the Directive 2010/63/EU.