

# Characterisation of pigs' testicles



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## AIM

This study determines the chemical composition of the testicles and fat tissue for further use and investigates the weight variation in testicles from intact males and immunocastrates ready for slaughter to find more protein sources at the slaughterhouse.

## METHOD

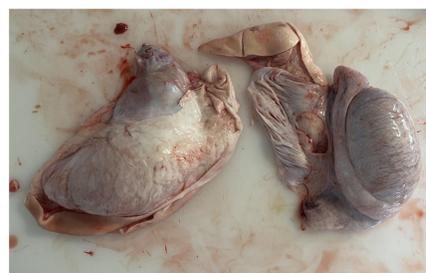
At the slaughter line, the testicles, along with the surrounding fat and skin, were removed prior to the opening of the carcass. Both fat and testicles were collected.

**Study 1)** The chemical composition (protein, fat, skatole, androstenone) were analysed from 14 intact male carcasses.

**Study 2)** The weight, length and circumference were measured of trimmed testicles from 381 male pigs coming from 15 farms with either intact males (IM) or immuno-castrates (IC). Data on slaughter weight and lean meat content was also collected.

## CONCLUSION

In the production of male pigs without the use of surgical castration, a 'new' raw material – in a larger volume than before – is to be handled at the slaughterhouses. Although immunocastration (Improvac®) reduces the total weight of the testicles by at least 20%, the cleaned testicles still amount to approximately 400 grams and >500 g from IM. The chemical composition of the testicles makes them interesting to utilise together with other tissue (by-products) e.g. in enzymatic hydrolysis for better utilisation of the protein. Furthermore, the low content of skatole and androstenone means there is no risk of off-flavour.



## RESULTS

**Study 1)** Skatole was only found in the fat fraction and was detected in 5 out of the 14 male pigs, while the rest were below the detection limit. Androstenone was not detected in 4 of the testicle samples, whereas androstenone was present in the fat tissue of all 14 samples.

Table 1. Selected chemical composition (n=14)

	Protein	Fat	Skatole	Androstenone
Testicle	12.98	2.37	0	0.17
Fat tissue	13.57	25.73	0.08	1.31

**Study 2)** Immunocastration (Improvac®) has no significant influence on the slaughter weight and meat content, but there was some effect of farms. Immunocastration (Improvac®) reduced the weight of the testicles with a large effect of the individual farm, from an average of 250 gram up to 500 gram, Table 2. The testicle weight from IM was normally distributed, while IC was more uneven, Figure 1.

Table 2. Slaughter and testicle weight from IM (n=240) or IC (n=141)

	IM	IC	Significance
Meat content	60.8	60.7	ns
Slaughter weight (kg)	91.5	94.2	ns
Testicle weight (gram)	519	421	P<=0.05

The trimmed testicles are a good protein source free from skatole, and with a low level of androstenone.

## ACKNOWLEDGEMENTS

The research was financially supported by the Danish Pig Levy Fund.

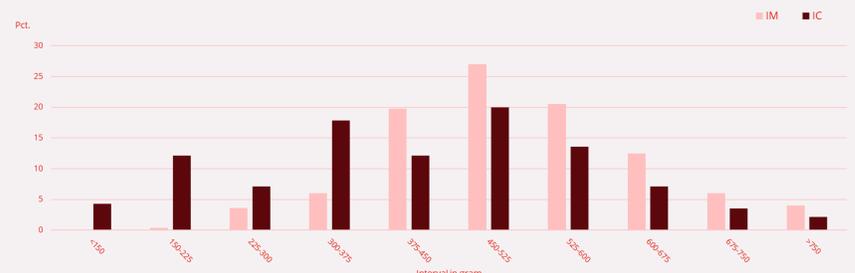


Figure 1. Distribution of testicle weight IM (n=240) and IC (n=140) males



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