

## Retrospective by sex of the new EU lean meat content of pig carcasses

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### Application

The provided inputs on carcass composition should allow to better assess the technical and economical balance between entire and castrated males. Moreover, when the carcass grading methods will be updated, it seems worthwhile to consider separate slopes for entire males, females and castrated males.

### Introduction

A new EU regulation on carcass classification applies from July 2018 (European Commission, 2017). This regulation changes the definition of the reference lean meat percentage (LMP) which becomes the LMP in the carcass (from total dissection). Nevertheless, each Member State can choose when he will update its grading methods. Sex is registered online in France during pig classification conversely to most of European countries. The production of entire males started in France in 2013 (13% of the males), increased quickly and is now stable (27% of the males in 2017), around 2.5 million a year. More than 95% of entire males are classified with the grading method CSB Image-Meater® (IM) approved by the EU in 2013 (European Commission, 2013). The aim of this work is to simulate the LMP change over the last five years in France for each sex.

### Material and methods

A sample of 180 pigs was uniformly stratified on sex: 60 entire males, 60 females and 60 castrated males. Carcasses were measured online by the IM and the two fat depths (G3 and G4) and two muscle depths (M3 and M4) were collected. After overnight chilling, the left sides were cut and all the cuts were scanned by computed tomography (CT). The new LMP was calculated according to the unbiased pan-European CT procedure developed by Daumas and Monziols (2018). A prediction equation was calculated by a general linear model including the four IM depths as well as the interactions with sex. Model was selected with the stepwise procedure by using BIC. This equation was then applied on the annual classification averages from 2013 to 2017 (Uniporc Ouest, 2014-2018).

### Results

The selected model included one fat depth (G3) and two muscle depths (M3 and M4), G3 and M3 coefficients depending on sex. The RMSE was 2.15. Removal of M4 only decreased the RMSE of 0.01. The fat coefficient of entire males was more than twice that of females, while that of castrates was in the middle. Differences on M3 coefficient had lower impact on LMP. Table 1 gathers the LMP by sex over the years 2013 to 2017. In 4 years LMP increased, but differently according to sex: +0.11 for entire males, +0.25 for females and +0.35 for castrated males. In the same period the difference between entire and castrated males decreased from 4.02 to 3.78, while the difference between entire males and females decreased from 1.37 to 1.23; the difference between females and castrated males reduced from 2.65 to 2.55.

**Table 1** Changes in LMP by sex over time

Sexual type	Year				
	2013	2014	2015	2016	2017
Entire males	62.13	62.28	62.25	62.19	62.24
Females	60.76	60.83	60.89	60.99	61.01
Castrated males	58.11	58.15	58.22	58.39	58.46

### Conclusion

The prediction equation of the lean meat content in pig carcass from splitline measurements is sex-dependent. The slopes of both fat and muscle depth are affected. In four years the differences of lean meat content between sexes have slightly been reduced.

### References

- Daumas G and Monziols M 2018. Towards a pan-European computed tomography procedure for determining the new EU lean meat content of pigs. Proceedings of the 64th International Congress of Meat Science and Technology, 12-17 August 2017, Melbourne, Victoria, Australia, article 6550.
- European Commission 2017. Commission delegated Regulation (EU) 2017/1182 of 20 April 2017 supplementing Regulation (EU) No 1308/2013 of the European Parliament and of the Council as regards the Union scales for the classification of beef, pig and sheep carcasses and as regards the reporting of market prices of certain categories of carcasses and live animals. Retrieved on 23<sup>rd</sup> August 2018 from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1182&from=frf>
- European Commission 2013. Commission implementing decision of 11 June 2013 amending Decision 2006/784/EC as regards the formula of an authorised method for grading pig carcasses in France. Retrieved on 23<sup>rd</sup> August 2018 from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013D0282&rid=1>
- Uniporc Ouest 2014-2018. Activity 2013, 2014, 2015, 2016, 2017. Retrieved on 2<sup>nd</sup> March 2018 from <http://www.uniporc-ouest.com/informations-filieres/plaquette-activite.html>