

**Meat and fat quality of pigs intended for Spanish cured ham: effect of male castration and feeding**L. Pérez-Ciria<sup>1</sup>, F.J. Miana-Mena<sup>1</sup>, G. Ripoll<sup>2</sup> and M.A. Latorre<sup>1</sup><sup>1</sup>IA2- Universidad de Zaragoza, C/ Miguel Servet 177, 50013, Spain, <sup>2</sup>IA2-CITA de Aragón, Av. Montañana 930, 50059, Spain; leticiapcgm@gmail.com

Currently, the castration is necessary in heavy male pigs such as those intended for dry-cured ham elaboration. Immunocastration could be an alternative to surgical castration, considering the animal welfare, but the maintenance of the product quality should be also guaranteed. A total of 90 Duroc × (Landrace × Large White) male pigs was used to assess the impact of the type of castration (surgical castration vs immunocastration) and of different diets on meat and fat quality of pigs intended for Teruel ham, which is a Spanish label of high quality dry-cured hams. Surgical castration was carried out at the first week of age and immunocastration consisted of three injections of Improvac<sup>®</sup> at 56, 101 and 122 days of age. The diets tested were: A=control, B=high net energy level (NE) and C=low standardized ileal digestible Lysine level (Lys SID). During the growing period (80 to 109 kg body weight-BW), the diet A contained 2,330 kcal NE/kg and 0.77% Lys SID, the diet B included 2,480 kcal NE/kg and 0.77% Lys SID and the diet C provided 2,330 kcal NE/kg and 0.67% Lys SID. During the finishing period (109 to 137 kg BW), the diet A contained 2,330 kcal NE/kg and 0.63% Lys SID, the diet B included 2,480 kcal NE/kg and 0.63% Lys SID and the diet C provided 2,330 kcal NE/kg and 0.54% Lys SID. A sample of meat from each carcass (n=15) and 48 samples of subcutaneous fat chosen at random (n=8) were taken to be analysed. Meat from immunocastrated males (ICM) showed lower intramuscular fat content and lightness, but higher moisture than that from surgical castrated males (SCM) (P<0.05). The diet C carried out the highest cooking losses (P=0.003). Fat from ICM presented a lower proportion of total monounsaturated fatty acids than that from SCM (P=0.028). Besides, in ICM, diets B and C decreased the total polyunsaturated fatty acids (P=0.012). We can conclude that immunocastration of male pigs provides lower intramuscular fat content and fat less monounsaturated than surgical castration. Also, the diet has to be considered in ICM, because those with high energy content or low Lys level can affect the fat composition and therefore the product quality.

**Modelling growth performance of pigs and within-room thermal balance in different local conditions**N. Quiniou<sup>1</sup>, A. Cadero<sup>1,2</sup>, M. Marcon<sup>1</sup>, A.C. Olsson<sup>3</sup>, K.H. Jeppsson<sup>3</sup> and L. Brossard<sup>2</sup><sup>1</sup>IFIP-Institut du Porc, BP 35, 35650 Le Rheu, France, <sup>2</sup>Pegase, INRA, Agrocampus Ouest, 35590 Saint-Gilles, France,<sup>3</sup>Swedish University of Agricultural Sciences, Biosystems and Technology, P.O. Box 103, 23053 Alnarp, Sweden; nathalie.quiniou@ifip.asso.fr

A model has been used to assess both direct and indirect consumption of energy by growing pigs fed *ad libitum*, housed in fattening rooms with various insulation characteristics, and under different outdoor temperatures. This model combines a growth model and a bioclimatic model. It simulates thermal exchanges at the room level, based on interactions between the insulation of the room, available equipment (fans, heaters...), the parameters of the climate control box, the characteristics of pigs, and the feeding strategy. Heat sources are the animals (sensible heat) and heaters when available. Heat losses are due to insulation characteristics of the room and air renewal. The model has been evaluated from data collected simultaneously on pigs, diets, indoor and outdoor temperature (T) during a trial, and the error of prediction of indoor T was below 0.5 °C on an hourly basis. Thereafter, simulation will be performed, based on the same population of pigs and feeding strategy under different outdoor T, different heater powers in the room combined with different insulation level of wall material. For this purpose, four time series of outdoor T have been collected over 12 months (one in France and three from South to North in Sweden), as well as building characteristics in both countries (heater power: from 0 to 26 Watt/fattening place; 1 or 3 insulated layers). For each combination of climate and building, indoor T and pig performance will be simulated as well as total energy consumption and its partition between direct and indirect components. This research was part of the Pigsys ERA-Net project, co-funded under European Union's Horizon 2020 RI program (from SuSan, [www.era-susan.eu](http://www.era-susan.eu), Grant Agreement n°696231) by the French ANR (grant n°ANR-16-SUSN-0003-02).