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## Modelling study with InraPorc® to evaluate nutritional requirements of growing pigs in local breeds

Ludovic Brossard, Rosa Nieto, José Pedro Araujo, Carolina Pugliese

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**Modelling study with InraPorc® to evaluate nutritional requirements of growing pigs in local breeds**L. Brossard<sup>1</sup>, R. Nieto<sup>2</sup>, J.P. Araujo<sup>3</sup>, C. Pugliese<sup>4</sup>, Č. Radović<sup>5</sup> and M. Čandek-Potokar<sup>6</sup><sup>1</sup>PEGASE, INRA, Agrocampus-Ouest, 35042 Rennes, France, <sup>2</sup>EEZ, CSIC, Camino de Jueves s/n, 18100 Granada, Spain, <sup>3</sup>IPVC, Praça General Barbosa, 4900 Viana de Castelo, Portugal, <sup>4</sup>UNIFI, Via delle Cascine 5, 50144 Firenze, Italy, <sup>5</sup>IAH, Autoput za Zagreb 16, 11080 Belgrade-Zemun, Serbia, <sup>6</sup>KIS, Hacquetovaulica 17, 1000 Ljubljana, Slovenia; ludovic.brossard@inra.fr

Models as InraPorc® have been developed to simulate pig growth and to determine nutrient requirements. They are largely applied to conventional breeds but so far not to local breeds. Our study aimed to use InraPorc® to determine nutrient requirements of growing pigs from local breeds in H2020 EU project TREASURE. Data on feed composition, allowance and intake, and body weight (BW) were extracted from literature reports or experiments conducted within the project. They were used to calibrate parameters defining a growth and intake profile in InraPorc®. We obtained 15 profiles from 9 breeds (Alentejano, Basque, Bisaro, Calabrese, Cinta Senese, Iberico, Krškopolje, Mangalitsa Swallow Bellied and Moravka). Breeds had 1 to 3 profiles depending on experimental conditions or data sources. Conditions of the study affected calibration results. The mean protein deposition (PD) was low for all breeds from 39.9 to 91.0 g PD/day vs over 110 g/d in conventional breeds. For 40-100 kg BW range, the age of the pigs at 40 kg BW was between 110 and 206 days, denoting different feeding management in addition to genetic differences. Average daily gain (ADG) and feed intake curves showed similar shape. Protein deposition rate was the highest in breeds with the highest ADG. Lysine requirements were largely covered in all studies and breeds, the highest requirements being observed with the highest ADG. In all breeds a low part of total body energy retention was dedicated to protein, conversely to lipids. Despite some methodological limitations, this study provides a first insight on nutrient requirements for some local breeds. Funded by European Union's Horizon 2020 RIA program (grant agreement no. 634476).

**An alternative to restricted feeding in Iberian pigs using an agro-industrial by-product of olive oil**J.M. García-Casco<sup>1</sup>, M. Muñoz<sup>1</sup>, M.A. Fernández-Barroso<sup>1</sup>, A. López-García<sup>1</sup>, C. Caraballo<sup>1</sup>, J.M. Martínez-Torres<sup>2</sup> and E. González-Sánchez<sup>2</sup><sup>1</sup>INIA, Centro Cerdo Ibérico – Dpto. Mejora Genética Animal, Ctra EX101, km 4.7, 06300 Zafra, Spain, <sup>2</sup>Universidad de Extremadura, Escuela de Ingenierías Agrarias, Avda. Adolfo Suárez, s/n, 06007 Badajoz, Spain; garcia.juan@inia.es

Traditional Iberian pig production is characterized for having a fattening period with a feeding based on acorn and pastures. During the previous growing period, the feeding is restricted to avoid undesirable weight gains. However, this procedure could cause feeding stress. The use of *ad libitum* diets based on olive by-products during the growing period may be an alternative to avoid this stress. Two diets based on olive by-products, one incorporating dry olive pulp in the feed (DD) and the other one incorporating olive cake in wet form (WD) were compared with a control standard diet group (CD). CD and DD diets were supplied once a day and WD diet was supplied *ad libitum* and supplemented with a specific feed given once a day. Comparisons were performed using ANOVA for: growth, backfat fatty acid profile, carcass composition, percentage of intramuscular fat (%IMF) and other quality meat traits (thaw, cook and centrifuge force losses, shear force, marbling, Minolta colours and myoglobin concentration). No significant differences between the treatment groups were observed for most of the traits. Although animals fed with DD and WD diets grew slower than those fed with CD during the growing period, no differences in the total average daily gain were observed. DD animals showed a higher carcass yield and less %IMF in loin. Olive-cake diets caused higher levels of unsaturation than CD one after the growing period. Lower centrifuge force losses were observed in WD than in CD. DD samples were paler and less red-coloured and has lower myoglobin content than CD and WD ones. Results (of this study within project TREASURE) suggest that WD diet could be a suitable feeding for growing period in traditional Iberian pig production since negative effects on growth, carcass and quality traits were not observed in the current study. Funded by European Union's H2020 RIA program (Grant agreement no. 634476).