

Growth potential of Krškopolje pigs in different production systems

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The interest for Slovenian autochthonous pig breed– the Krškopolje pig is increasing, while knowledge about its nutritional needs is limited. Because Krškopolje pigs are reared in diverse production systems, from extensive backyard to intensive indoor system, their phenotype is more complex. In order to estimate their nutritional needs, trials were conducted to obtain the data on body weight, backfat thickness, cumulative feed intake, feed (ingredients and chemical) composition in traditional (TRAD; indoor housing in pens with full floor, straw bedding, and access to an outdoor area; n=6), indoor (IND; partly slatted floors; n=14), and outdoor (OUT; n=12) system. Data were used to generate animal profiles with InraPorc® software following the methodology described in Brossard *et al.* (2019). Growth performance on *ad libitum* feeding regime was simulated for the entire growing-fattening period typical for Krškopolje pigs (30 to 160 kg body weight). As expected, the results of performance simulation with different animal profiles showed the highest growth potential of Krškopolje pigs in the IND system (average daily gain (ADG) of 734 g, with an average daily NE intake (NE intake) of 31.43 MJ NE). Compared to IND system, pigs in TRAD and OUT systems had approximately 8% and 14 % lower ADG, respectively, at 15% higher and 4% lower NE intake, respectively. Due to approximately 19% and 23% lower average daily protein deposition they exhibited approximately 16% and 19% lower SID lysine requirements per day compared to IND system, respectively. As expected for fatty type pigs, the proportion of NE intake retained as lipid was high, regardless of the rearing system (40.2%, 39.7 and 43.6% in IND, TRAD and OUT, respectively), and NE intake retained as protein quite low (7.6%, 5.2% and 6.1% in IND, TRAD, and OUT, respectively). In conclusion, the

present study confirms that the production system in which Krškopolje pigs are kept influences their growth potential and nutritional needs. To formulate feeding recommendations for different production systems, further simulations for different growth and fattening phases, and with different animal profiles are needed.

Keywords: fatty pig, modelling, protein deposition, nutritional requirements, production system

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