

91 Effect of birth weight and feeding strategies during the growing-finishing period on growth performance, carcass characteristics, and meat quality in pigs. G. Bee*, C. Biolley, B. Dougoud, W. Herzog, and G. Guex, *Agroscope Liebefeld-Posieux, Swiss Federal Research Station for Animal Production and Dairy Products (ALP), Posieux, Fribourg, Switzerland.*

Compared to heavier littermates, low-birth-weight pigs tend to exhibit slower growth, increased fat deposition, and impaired meat quality such as tenderness. Feeding strategies aiming to reduce large intra-litter variations in muscle growth will benefit production economy and improve quality uniformity of pork. Thus, the effects of 3 feeding regimes applied during the growing-finishing period on growth performance, carcass characteristics, and meat quality traits of the LM and dark (STD) portion of the semitendinosus were assessed in low- (LW = 1.12 kg) and high-birth-weight barrows (HW = 1.94 kg). From 21 litters the lightest and heaviest barrow was selected and randomly assigned to one of 3 dietary treatments; AA: ad libitum feed access from 27 to 102 kg BW, RA: restricted feeding from 27 to 63 kg and ad libitum feed access from 63 to 102 kg BW, and RR: restricted feeding from 27 to 102 kg BW. Regardless of the birth weight, AA- and RA-barrows grew faster ($P < 0.01$) than RR-barrows (0.76 vs. 0.66 kg/d). The ADFI was highest ($P < 0.01$) in AA- (2.11 kg), intermediate in RA- (1.99 kg), and lowest in RR-barrows (1.77 kg). In the 3 treatment groups LW-barrows consumed more feed (204 vs. 193 kg; $P < 0.01$) and were less efficient (G/F: 367 vs. 380 g/kg; $P = 0.01$) than HW-barrows. Carcasses of the LW-barrows had lower ($P = 0.02$) lean percentage (55.0 vs. 56.5%) and higher ($P = 0.03$) percentages of subcutaneous (14.9 vs. 13.4%) and omental fat (1.8 vs. 1.5%) than HW-barrows. The LM of RA-barrows was lighter (L*: 52.6 vs. 50.6; $P = 0.03$) than the LM of AA- and RR-barrows. Shear force values tended to be higher ($P = 0.08$) in the LM (4.0 vs. 4.3 kg) and STD (4.2 vs. 4.7 kg) of RR- than of AA- and RA-barrows. The LM of LW-barrows was more yellow (b*: 3.2 vs. 2.8; $P = 0.05$) and redder (a*: 6.4 vs. 5.9; $P = 0.08$) than the LM of HW-barrows. The present findings revealed that independent of the feeding regime low birth weight was associated with impaired carcass quality. Furthermore, compensatory growth positively affected meat tenderness also in low birth weight pigs.

Key Words: Birth weight, Compensatory growth, Meat quality