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**Czech Journal of Animal Science**

**Optimal slaughter weight of pigs assessed by means of the asymmetric S-curve**

Kusec G., Kralik G., Djurkin I., Baulain U., Kallweit E.:

**Czech J. Anim. Sci., 53 (2008): 98-105**

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The present study was carried out on 68 barrows equally distributed into two different feeding groups (intensive and restricted). MR tomography was used to obtain data needed for the calculation of

analyses and predictions were performed using an asymmetric S-function. The differences between the predicted and real time needed to achieve 100 kg live weight calculated for the two feeding groups of pigs were not statistically significant. The prediction was fairly accurate in 88% of the cases for the intensive group and 79% of the cases for the restrictively fed pigs. The point of muscle growth saturation ( $t_C = 51.31$  dm<sup>3</sup>) calculated for pigs from the intensive group occurred at 164 days of age. Restrictively fed pigs reached this point after 167 days. It was calculated that at 164 days of age intensively fed pigs reached about 126 kg; the pigs from the restricted group reached about 112 kg at 167 days. These weights can be regarded as optimal slaughter weights for pigs from the present study in the sense of maximum utilisation of muscle growth. Since both groups of pigs reach the same muscle volume of 51 dm<sup>3</sup> at the estimated times, the difference in live weights can be attributed to the volume of fat. This makes the intensive system of feeding undesirable in economical pig production. It is concluded that the

obtained parameters of the asymmetric S-function can be used for the growth analysis of other pigs, assuming that they are of the same genetic background and reared in the same conditions. It is suggested that the carcass values of pigs slaughtered at optimum live weights proposed here should be compared with the values of pigs slaughtered at other live weights in order to decide between maximum utilisation of muscle growth or achieving the most desirable lean percentage in carcass.

**Keywords:**

pigs; feeding regime; growth; prediction; non-linear models

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