

BIOLOGICAL GROWTH MODEL AS A NEW SELECTION STRATEGY FOR IMPROVEMENT OF FEED EFFICIENCY IN SWINE

Sönke Landgraf^{1*}, Rainer Roehle¹, Andreas Susenbeth², Ulrich Baulain³, Pieter W. Knap⁴, Holger Looft⁴, Graham S. Plastow⁴ and Ernst Kalm¹

¹*Institut für Tierzucht und Tierhaltung, Christian-Albrechts-Universität zu Kiel, D-24118 Kiel*

²*Institut für Tierernährung und Stoffwechselfysiologie, Universität Kiel, D-24118 Kiel*

³*Institut für Tierzucht und Tierverhalten, Bundesforschungsanstalt für Landwirtschaft (FAL), D-31535 Neustadt-Mariensee*

⁴*PIC Deutschland, Ratsteich 31, D-24837 Schleswig*

* *Sönke Landgraf, Hermann-Rodewald-Str. 6*

D-24118 Kiel, Phone: +49-431-880-7315, Fax: +49-431-880-2588, E-mail: slandgraf@tierzucht.uni-kiel.de

Abstract. Biological growth models are of increasing interest in animal breeding. One possible application is their use to optimise selection for feed intake capacity. For this to be achieved the input parameters of maximum protein deposition rate and minimum lipid to protein deposition ratio have to be known. Different methods can be used for measuring protein and lipid deposition rate on live animals (e.g. deuterium dilution technique, magnetic resonance tomography (MRT)) or on slaughter animals in a serial slaughter trial with the entire body chemically analysed. All these techniques are very expensive and can be obtained only in an experimental trial. Therefore, a trial that addresses these needs and also allows a comparison of the methods will be of great value. Correlation between protein or lipid deposition and indicator carcass cuts varied substantially during growth. The combinations of carcass cuts to predict protein and lipid deposition generally provided higher values. The number and kind of predicted variable varied during the growth, so it is necessary to measure protein also by direct methods.

Keywords: protein deposition, indicator cuts, biological growth model, selection, pig