Accepted Manuscript

Title: Use of metabolic profile in short-term studies for estimating optimum dietary isoleucine, leucine, and valine for pigs

Authors: J.V. Nørgaard, E.A. Soumeh, M. Curtasu, E. Corrent, J. van Milgen, M.S. Hedemann

PII: \$0377-8401(16)31090-2

DOI: http://dx.doi.org/doi:10.1016/j.anifeedsci.2017.04.002

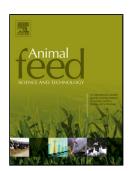
Reference: ANIFEE 13754

To appear in: Animal Feed Science and Technology

Received date: 6-12-2016 Revised date: 31-3-2017 Accepted date: 3-4-2017

Please cite this article as: Nørgaard, J.V., Soumeh, E.A., Curtasu, M., Corrent, E., van Milgen, J., Hedemann, M.S., Use of metabolic profile in short-term studies for estimating optimum dietary isoleucine, leucine, and valine for pigs. Animal Feed Science and Technology http://dx.doi.org/10.1016/j.anifeedsci.2017.04.002

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



ACCEPTED MANUSCRIPT

Use of metabolic profile in short-term studies for estimating optimum dietary isoleucine, leucine, and valine for pigs

J.V. Nørgaard^{a,*}, E.A. Soumeh^a, M. Curtasu^a, E. Corrent^b, J. van Milgen^c, and M.S. Hedemann^a

^a Dept. of Animal Science, Aarhus University, Foulum, DK-8830 Tjele, Denmark

^b Ajinomoto Eurolysine S.A.S., F-75817 Paris Cedex 17, France

^c INRA, UMR1348 PEGASE, F-35590 Rennes, France

* Corresponding author. E-mail address: JanVNoergaard@anis.au.dk (J.V. Nørgaard).

Highlights

- Increasing levels of isoleucine, leucine or valine affected the metabolic profiles
- Modelling plasma metabolites could estimate optimum amino acid requirement in piglets
- Two days of feeding may be sufficient to mediate relevant biological changes in blood

ABSTRACT

Traditional AA dose-response studies utilize many animals for evaluation of growth performance, and it is hypothesized that a new experimental design based on modern analytical techniques can reduce the number of used animals. The objective was to evaluate a short-term approach with a low number of pigs based on plasma metabolites as a method to determine the dietary Ile, Leu, and Val requirements. Three separate 6 x 6 Latin square experiments having 6 replicates per treatment were conducted with 6 diets containing increasing concentrations of Ile, Leu, and Val which were fed to 6 pigs (BW 8 to 9 kg) for 2 days, each without a wash-out period for a period of 12 days. The diets were prepared and used in 3 previous traditional-design dose-response studies and had been stored at -20 °C. Blood samples were collected at the end of each 2-day

Download English Version:

https://daneshyari.com/en/article/5538919

Download Persian Version:

https://daneshyari.com/article/5538919

<u>Daneshyari.com</u>