

Harmonisation of Energy Evaluation Systems for Pigs (Version 2)

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Introduction

During the recent Energy Metabolism Symposium held in Warnemünde/Rostock (2003), harmonization of energy evaluation systems for pigs was discussed in a special workshop. The main initiative came from Aimé Aumaitre, president of the European Association of Animal Production (EAAP). Markus Rodehutscord (Halle) took over the moderation. During this workshop, speakers from several European countries presented their evaluation systems in use. A broad variation ranging from digestible energy to highly sophisticated net energy or even ATP systems were presented. In the United Kingdom and Denmark, new systems have been introduced recently. Some other countries decided to use their approved systems also in the near future (Germany and Switzerland). Others are looking for better evaluation systems.

There was general agreement that net energy systems allow a better prediction of energy requirements of pigs and also of the feeding value of feedstuffs than systems based on digestible or metabolisable energy.

After an intensive discussion on technical arguments as well as a possible strategy for the unification of energy evaluation, Caspar Wenk was asked to chair a working group under the hospice of EAAP in which requirements and necessities for a uniform system in Europe should be evaluated. For the better planning of the further work, a questionnaire was developed. The aim is to describe the present situation in each country involved and to estimate advantages and disadvantages connected with the present and eventual future systems. Finally the future expectations should be signalized for your country.

It is acknowledged that within a country different systems may exist. The survey should be filled out from a perspective on how you (i.e. your institution) perceive the situation in your country and it refers to the techniques you use. Please indicate therefore the contribution of your system to the total pig feed market in your country and send us addresses of further relevant organizations (governmental or private) that should also be accounted for in this survey.

Thanks a lot for your highly appreciated contribution
Caspar Wenk / Hans Peter Pfrirer
Jaap van Milgen
Markus Rodehutscord

Harmonisation of Energy Evaluation Systems (EES) for Pigs

Name:

Organisation:

Address:

e-mail:

Tel:

Function (research institute, control laboratory, government, industry, etc.):

What is the estimated use (in %) of the described EES in your country?

Please name further institutions that use different EES:

Are you interested to get the comprehensive questionnaire?

1. Short description of the basis of your energy system

General description:

In what units are your energy values and requirements expressed (e.g., kJ, kcal).

Is there a national committee that proposes nutrient and energy evaluation systems?

Is there a national database of nutrient content and energy values?

Is there one single system in your country or do users (e.g., the feed industry) develop, apply and/or adapt systems to their needs?

1.1. Energy requirements

Briefly describe the basis of the system for energy requirements:

Growing pigs:

Pregnant sows:

Lactating sows:

1.2. Feed evaluation

Briefly describe the basis on how feed energy values are determined. Do you use the same approach for raw material and for complete rations?

How do you consider feed additives in your EES (enzymes etc.), grinding and thermic treatments of diets (pelleting, expansion etc.):

2. Determination of the energy and nutrient content

2.1. Gross energy (heat of combustion)

Do you determine the gross energy (heat of combustion) of feedstuffs? If so, what analytical method do you use?

If you calculate the gross energy content of feed from its chemical composition, what information do you require in your equation (e.g., starch, sugar, lipids) and what are the coefficients that you use. Briefly indicate the methods that are used to determine the chemical composition. Is the equation the same for raw materials and for rations?

2.2. Use of “digestible nutrients” in your EES:

Do you require digestible nutrients as input in your EES?

Do you routinely determine “digestible nutrients” in digestibility trials?

Do you calculate “digestible nutrients” by regression equations from the chemical composition? If so, with what equations?

Are tables for “digestible nutrients” or digestibility of nutrients available and commonly used in your country? If so, which tables?

3. Experiments with animals

Digestibility trials

Do you regularly perform digestibility trials for the determination of the nutritive value of feedstuffs?

3.2. N-, C- and Energy balance studies

Do you perform balance studies for feed evaluation purposes? If so, what type of balance study (N, C, energy) and what technique do you use (e.g., respiration, comparative slaughter)?

Growing animals:

Sows:

4. Your expectations in a harmonization of EES in Europe