

Editorial news and events

Book review

Proceedings of the Society of Nutrition Physiology, Vol. 21; Society of Nutrition Physiology (Editor), DLG-Verlag Frankfurt (Main, 2012). 208 pp., Price: 29,90 € plus postage, Softcover, ISBN: 978-3-7690-4105-7

The 66th Annual Meeting of the Society of Nutrition Physiology of Germany was held in Goettingen from March 20-22, 2012.

The proceedings of the meeting include a review paper entitled “Principles and application of systems biology in improving efficiency of dairy cattle” by J.P. McNamara from Washington State University, Pullman (USA); 147 abstracts, and five contributions to the workshop “Metabolism and efficiency of fermentation in biogas plants”.

The author of the review paper provides some background and philosophy on systems biology in dairy cattle research. He focuses on the transition period and early lactation. The most important aim, and the challenge as animal scientists, is in the view of the author, to ensure a safe and sustainable high quality worldwide protein supply for future generations. This objective may, in the Western view, be the most important one, but there are some other objectives for cattle from a global perspective, such as to provide power, manure, clothes, etc., for people. The headlines of the chapters in his presentation include ‘Systems biology’, ‘Purpose of animal agricultural research’, ‘Systems biology in early lactating dairy cows’, and ‘Adipose tissue as an example of a sub-systems’. McNamara concludes that the dairy cow and the dairy industry are systems from the cell level to international markets and food needs. Scientists need a re-invigorated, multi-investigator, multi-disciplinary, integrated approach to solve the present and future problems of productive efficiency including milk production and reproduction. This research effort will require the construction and testing of mechanistic bio-mathematical models. Finally, trained students, scientists and professionals in the

importance of using integrative and bio-mathematical models to help improve the overall efficiency of the dairy industry are needed.

The peer reviewed abstracts (one page each) are devoted to the following topics:

1. Amino acids and nitrogen (11 contributions)
2. Environment (5 contributions)
3. Transport, epithelial and cell physiology (10 contributions)
4. Minerals (7 contributions)
5. Undesirable substances (5 contributions).
6. Fatty acids (9 contributions)
7. Energy (19 contributions)
8. Digestion (14 contributions)
9. Feed additives (26 contributions)
10. Feedstuff evaluation and feeding (30 contributions)
11. Free topics (11 contributions)

Most of the papers presented are from scientists at German institutes of animal nutrition and animal physiology, but contributions are also included by scientists from other European countries as well as from overseas.

The five contributions of the workshop dealt with metabolism and efficiency of fermentation in biogas plants. There are similar conditions in the rumen and in the biogas plants, but the objectives are different. On the one hand, the methane emissions should be minimized in the rumen, and on the other hand, the methane yield in the biogas plants should be maximized. The speakers analysed the following topics in their contributions:

- Efficiency of biogas fermentation as a function of microbial population;
- Microbiological and epidemiological aspects of hygienic conduct of biogas plants and agricultural utilization of digestate;
- Fermentability of fibre-rich substrate as a base of new biogas technologies;
- Production of biogas in Lower Saxony;
- Anaerobic substrate utilization and efficiency of biogas plants.

Special attention should be directed at microbiological and epidemiological aspects during mesophile fermentation (37-42°C). Higher temperatures (>50°C; thermophile conditions) reduce and inactivate many, but not all, microbes. Higher temperatures (about 70°C) or long term storage (more than 4 months) of fermentation solids could be alternatives to the hygienization of digestate from biogas plants. Further studies are necessary for clarification of these topics.

The proceedings review current research activities in animal physiology and animal nutrition in Central Europe and are recommended to all those working in animal nutrition and animal physiology, but also in feed science. The workshop also covers the present knowledge in the field of biogas fermentation. The Proceedings of the 66th Meeting (Vol. 21, 2012) are available from the DLG-Verlag, Eschborner Landstraße 122, D-60489 Frankfurt am Main, Germany.

The next meeting of the Society of Nutrition Physiology of Germany (the 67th) will be held in Goettingen from March 19-21, 2013.

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