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The Kielanowski Institute of Animal Physiology and Nutrition PAS Jabłonna

Editorial news and events

Book review

Proceedings of the Society of Nutrition Physiology The 67th Annual Meeting of the Society of Nutrition Physiology of Germany Goettingen, March 19 - 21, 2013, vol. 22

Society of Nutrition Physiology (Ed.) DLG-Verlag Frankfurt (Main) (2013). 196 pp., Price: 29.90 € plus postage, Softcover, ISBN: 978-3-7690-4106-4

The proceedings of the meeting comprise a review lecture entitled "Oxidative stress: Development and physiological consequences in farm animals" by Klaus Eder from the Justus-Liebig-University of Giessen, Germany, and 156 abstracts about various topics of animal nutrition and animal physiology.

The author of the invited paper provided a review of the development and physiological consequences of oxidative stress in farm animals. Oxidative stress is defined as the imbalance between the formation of oxidants and the detoxification of oxidants by the antioxidant system. There are some target molecules in the body which are highly susceptible against oxidants, such as:

- Lipids containing polyunsaturated fatty acids including membrane phospholipids
- DNA
- Proteins
- Specific carbohydrates including hyaluronic acid.

An excessive oxidative modification of such molecules leads to cell death by apoptosis or necrosis, as well as structural tissue damage, which may enhance the development of "free radical diseases".

The sections of the paper deal with

- Oxidants
- The antioxidant defense system
- Interactions between oxidative stress and in flammation – "Free radical disease"
- Physiologic role of oxidants
- Does dietary oxidative stress affect the performance in farm animals? and finally
- An example on the complex network between inflammation, oxidants, cellulardefense mecha-nisms and antoxidants The dairy cow in the transition period.

The sections give an overview about oxidants occurring in the body and their routes of development, the antioxidant system and its components and the consequences of oxidative stress with particular reference to farm animals, esp. to the dairy cow.

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

- Digestion (15 contributions)
- Minerals (19 contributions)
- Fatty acids (14 contributions)
- Energy (18 contributions)
- Free topics (6 contributions).
- Amino acids and nitrogen (15 contributions)
- Feedstuff evaluation and feeding (20 contributions)
- Environment (6 contributions)
- Undesirable substances (6 contributions)
- Transport and epithelial physiology (11 contributions)
- Feed additives (26 contributions)

The sequence of the topics is surprising in some cases (e.g., "Free topics" are between main topics; "Transport and epithelial physiology" is nearly at the end). Vitamins seem to have no research relevance in Germany.

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 large differences in the numbers of contributions per section (between 6 and 26) show the present scientific interests in the Institutes.

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 covers also 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 68th) will be held in Goettingen from March 18th til 20th, 2014.

Gerhard Flachowsky
Institute of Animal Nutrition
Friedrich-Loeffler-Institute (FLI)
Federal Research Institute of Animal Health
Bundesallee 50, D-38116 Braunschweig,
Germany
Tel.: +49-531-596-3102; Fax: +49-531-596-3299
e-mail address: gerhard.flachowsky@fli.bund.de