

Process technology and nutrition at VICTAM's Feed Conference

The technology that is used in the compound feed production has changed over the past years. Principles for size reduction on the example of roller milling of wheat have not changed but applications have.

In the early times we were told that so-called hammer mills and pellet presses were used for size reduction and size enlargement in the animal compound feed industry. At that time, at the University, we wanted to know the effects on animal performances but we were not taught that even the pelleting process itself had a size reduction effect, that could be responsible for differences in nutrient utilization and thus for animal performances.

Nowadays, domesticated livestock, fish in aquaculture and pet animals generally consume feeds that are processed. The processing operations applied include physical, chemical and thermal treatments and vary from a single step such as grinding to a series of steps including grinding, proportioning, mixing, conditioning, pelleting, coating, vacuum coating and cooling. Both pelleting and extrusion are used to shape mash mixtures into pellets and extrudates (kibbles) and are with mixing/coating the main feed processing technologies. As feed processing adds to the costs of feed, the processing operations are designed to increase the value of the final product in terms of nutrition, hygiene, safety, handling and waste.

Feed Processing Conference

In its afternoon program, The VICTAM Feed Processing Conference will focus on the effects of processing but always in relation with the utilization of the processed feed materials in the animal. Both new, promising ingredients will be discussed as effects of processes with respect to lysine utilization and formulation of animal diets.

The aim of this conference afternoon is to provide the conference participant with an overview of the most important unit feed processing operations in terms of their function but also with an overview on their impact on the chemical and physical

properties of the feed that potentially impact the nutritional value and the animals' performance. Feed processing entails various areas from factory lay-out and management, to chemical changes on molecular level and we are able to bring the audience only a part of this interesting field of research.

Technological processes are used for different objectives. We know the fixation

of the mix ratio's (mixing process), improvement of handling properties (flow ability e.g.) and influencing the feed efficiency. The improvement of feed efficiency is especially important, but also a complex matter. Not only we talk about different processes and different feed materials, also the target animal is important. We also know that for one nutrient processing effects can be positive,

Program and speakers

08:00 – 09:00	Registration and badge pick-up
08:30 – 09:00	Welcome coffee
09:00 – 09:10	Introduction by Stefan Hoh, Bühler
09:10 – 09:50	Globalisation: blessing or curse for the feed industry? Dr. Antje Eckel, Dr. Eckel Animal Nutrition GmbH & Co. KG
09:50 – 10:30	Energy Efficiency Dr. V. Bösch, IFF
10:30 – 11:00	Coffee break in hall 11.3
11:00 – 11:45	A new way to gentle coating Mr. Arian Issel, Amandus Kahl GmbH & Co. KG
11:45 – 12:30	Grinding fineness and hydrothermal treatment of pig feed: Effects on health, performance and nutrient utilization Prof. S. Dänicke, FLI (Friedrich-Loeffler-Institut)
12:30 – 13:30	Lunch break in hall 11.3
13:30 – 14:15	Characterization, processing and use by swine of canola co-products Prof. dr. R. Zijlstra, Dept Agric. Food, Nutr. Sci., Alberta, Edmonton, Canada
14:15 – 15:00	Potential and challenges in production and use of alternative protein sources Dr. J.V. Nørgaard, Aarhus University, Denmark
15:00 – 15:30	Coffee break in hall 11.3
15:30 – 16:15	Effects of toasting of soybean meal and rapeseed meal on protein quality of pig diets Dr. T. Hulshof, Trouw & Co, Amersfoort, Netherlands
16:15 – 17:00	Technological challenges for diet formulation Prof. dr. W.H. Hendriks, Wageningen University, Netherlands
17:15 – 19:00	Network reception for all speakers, delegates, visitors and exhibitors in hall 11.3

whereas for others it may be the opposite. So, costs have to be weighed against the improvement of feed efficiency in the animal. A recent issue is the interaction of ingredients with processing: should we choose the expander process prior to pelleting or some other form of pre-compaction? Items in research of the last decade.

Anno 2017, we are facing the fact that we want 'technology to be seen as a nutrient'. If so, we are interested in all kinds of processing techniques for diet ingredients and its relation with feeding value. Where feed additives do have a matrix value in diet formulation, process effects could have a similar approach in adding value to feeds.

Even today, we should have a good idea about the effects of processing on feed efficiency, especially when exploring alternative protein sources or where relatively new issues on nutrient utilization are published. Over-processing, e.g. in pet food during pelleting/extrusion, has been indicated to be important in view of protein/lysine utilization with respect to results of the Maillard reaction.

By controlling our processes and better knowing its effects we will know, how product development in the animal

compound feed should proceed creating functional feeds/nutrients based on ingredients and feed additives via processing.

After the VICTAM Feed Processing Conference, the audience will remember, that the physical quality of animal feeds is important but that processing in practice should not be done at the expense of nutritional quality.

Globalisation

This year's conference will focus on globalisation of markets and its possible effects on the feed industry, sustainability, issues of energy efficiency, animal welfare and new technical solutions. Especially the part of alternative protein sources will be treated comprehensively during the afternoon session.

What are the pros and cons of the globalisation of the feed industry? How will the disposal and material flows change in the future? Are the origins of raw materials always traceable and how can the feed industry enter new markets? These questions and many more will be put forward to discussion. Also questions on animal welfare come to the fore more and more and will be included within the lectures. Which technical solutions can be

worked out and implemented? How far can the digitalisation under industry 4.0 support and accompany the globalisation?

For a long time, the topics energy efficiency and sustainability are of high relevance in social discussions. The European Union raises the bar in so far.

With the climate and energy package from the year 2009, the share of renewable energies shall be raised by 20 % until 2020 or e.g. the primary energy demand shall be reduced by 20 %.

Each country of the EU had to adopt targets in national action plans and give an account of the target achievement rates towards EU.

With reference to the reduction of the primary energy demand, legal measures must be stipulated Europe-wide in order to reach this aim. The general discussion deals with for example with the obligatory energy audits according to DIN EN 16247 or the implementation of the management system DIN EN ISO 50001. In Germany, for example, these measures are also linked to financial benefits and constant adaptation and amendment of the EEG gives reasons for discussion every year.

On behalf of WUR, Dr. Ir. Thomas van der Poel and IFF, Mr. Rolf-Michael Blume we hope to welcome you all on June 13th.

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