





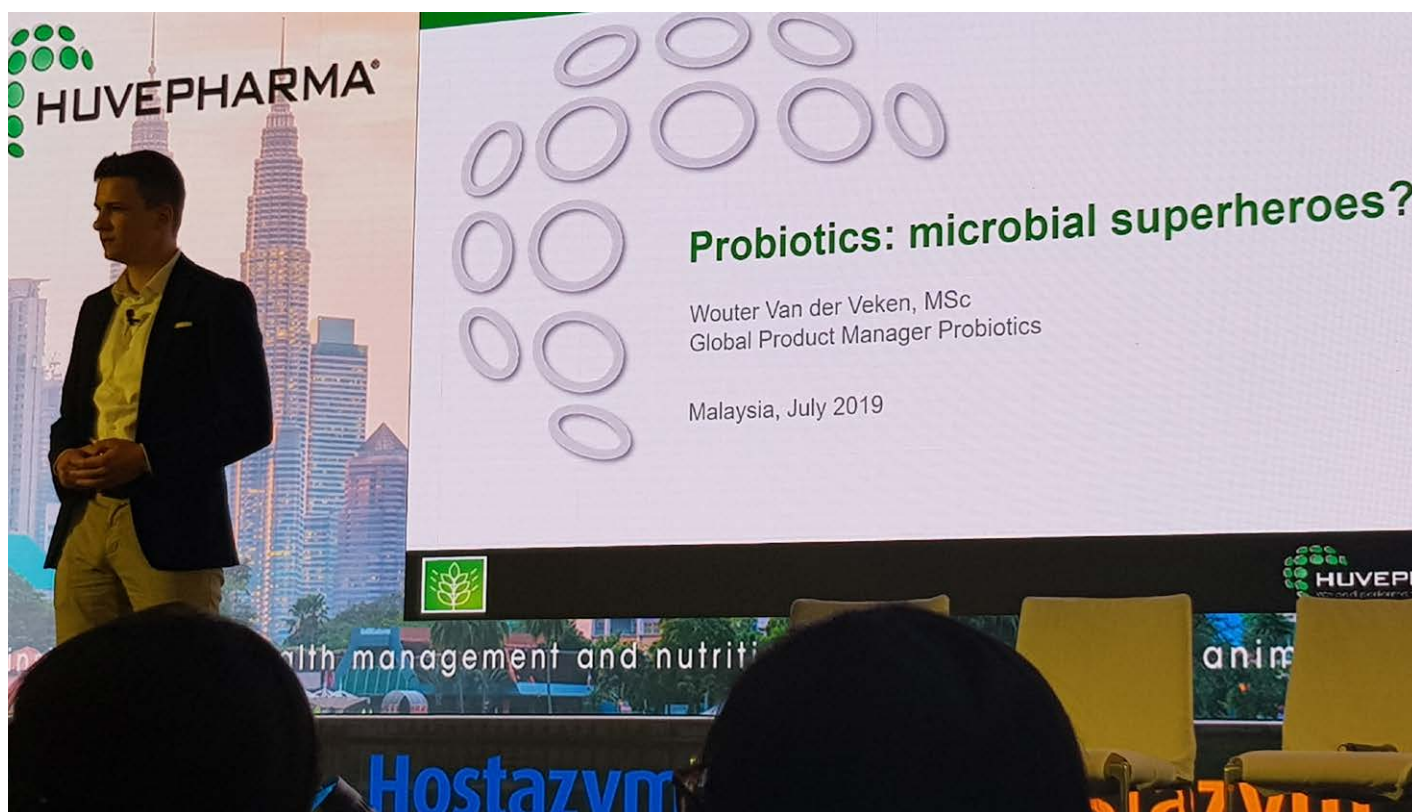


species and situation of concern. B-Act and Top Gut/Miya Gold products were reviewed for poultry and swine applications. The spore form and compatibility with other feed additives and ability to exert their effects under a wide range of animal gut temperature and chemical conditions that each product possesses make them ideal candidates for consideration for use in pelleted feeds and in poultry and swine. Mr. van Der Veken discussed research showing the beneficial effect of B-Act supplementation in necrotic enteritis and leg health (BCO) challenge models in broilers, and the benefits of using Miya Gold in swine and in piglets in particular.

**Dr. Robert Hoste**, from Wageningen University, Netherlands, joined the Seminar via video link from China, and spoke about **worldwide competition in pig meat production: trends and developments**. He stated that although swine production methods and efficiency varies greatly across the world, performance continues to improve (finishing pig FCR has reduced by 30% in the last 60 years). Profitability however, is most highly dependent on technical and management competence, labour efficiency, genetics and housing. Health status has increased and use of therapeutic antibiotics has reduced over the last 20 years, however African swine fever is of acute concern globally.

He estimates that ASF has caused a 20-30% reduction in pig meat availability in China to date. Piglet prices have risen by 130% and pig meat is expected to increase in price by 70%. The international pig meat trade is 8 million t/annum, and Chinese domestic consumption is 15 million t/annum, and soon there may not be enough traded pig meat to meet Chinese demand alone.

On Thursday morning, **Dr. Knud Bach Knudsen**, Aarhus University, Denmark, gave a presentation on **the role of fibre in animal nutrition and intestinal health**. He provided a comprehensive definition of what fibre is and the different fractions with the fibre classification. He explained that the chemical effects of fibres in the gut are microbially dependant as there is no direct hydrolysis of fibre by the animal, and that some specific fibres (carbohydrate fractions) can act as very effective prebiotics for specific purposes such as inulin and fructans to reduce the impact of *Brachyspira* infections in swine.



As mentioned previously, resistant starch may act as a prebiotic, however Dr. Bach Knudsen highlighted that the concentration of this substance in the diet must be in the order of 10-15% before it exerts significant prebiotic benefits in the gut. Use of Non starch polysaccharide degrading enzymes such as Hostazym X may be used to convert non-prebiotic fibre fractions into prebiotic fractions such as arabinoxylan oligosaccharides (AXOS), which in turn are fermented by specific bacteria in the lower intestine or caecum to produce butyrate. Butyrate production is higher when diets containing AXOS are fed compared with diets containing resistant starch.

**Dr. Markus Rodehutscord** from Hohenheim University, Denmark spoke about **phytate degradation in pigs and poultry**. He reviewed the different forms of phytate in feed raw materials and also the different phytases. 3-phytase is derived from fungi, 6-phytase is derived from bacteria, and 4-phytase is derived from plants. In the absence of added phytase (in any form), and where diets are deficient in phosphorus, there is a marked difference in the ability of poultry and pigs to degrade phytate in a diet. The range of phytate degradation under these conditions in poultry is 60-80%, but much lower (8-40%) in swine. Most of the phytase activity under these dietary conditions is due to brush border phytase activity, though some microbial phytase activity does occur. The inherent ability of the animal to degrade phytase is reduced with increasing calcium supplementation and even more so with added phosphorus and exogenous phytase. As calcium supplementation increases, phytase activity (of all origins) decreases. He also stated that amino acid digestibility improvements from phytase were modest, regardless of the product, and roughly equivalent to that of a commercial feed protease.

**Dr. Lode Nollet**, Huvepharma Global Product Manager Enzymes, presented on **enzymes for performance and economic return**. Dr. Nollet gave a compelling talk on the modes of action for Hostazym X and Optiphos and demonstrated that producers could achieve significant economic returns in poultry and swine diets compared to diets with no enzyme added. It was demonstrated that both products have significant advantages over other products on the market to ensure that they are fit for purpose, are capable of ensuring consistent feed performance and corresponding response in the animal to which they are provided.

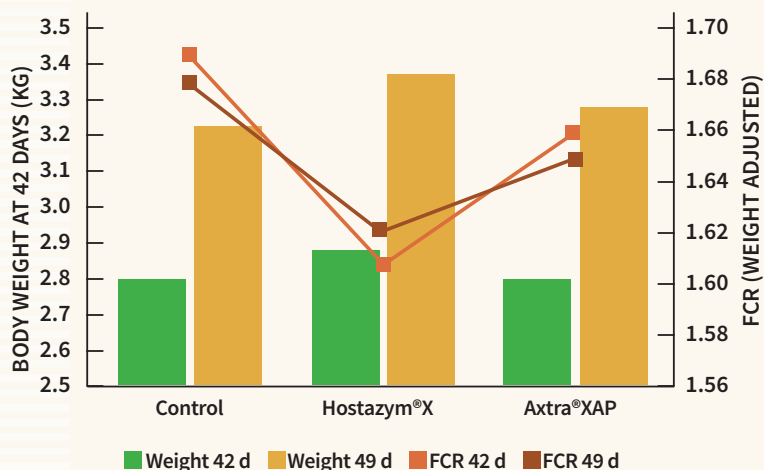
**Dr. Veerle Hautekiet**, Huvepharma Global Marketing Director reviewed the **benefits of vitamin D and its metabolites in animal nutrition** in her talk, 360° view on vitamin D benefits. Dr. Hautekiet covered the many functions of vitamins D and how it is produced and metabolised in the body to become active. The roles of the different metabolites and the differences between Bio D and other products on the market were discussed. The improved potency of Bio D per molecule of 25(OH)D<sub>3</sub> over the synthetic form was demonstrated, and the comparison of Bio D and vitamin D<sub>3</sub> was also made, where use of Bio D in combination with vitamin D<sub>3</sub> (1000 IU vit D from Bio D + 1000 IU vit D from vit D<sub>3</sub>) at only 25% of the dose of D<sub>3</sub> alone (8000 IU vit D from vit D<sub>3</sub>) was needed to achieve the same plasma 25(OH)D<sub>3</sub> concentration. The dangers of using some other commercially available products such as 1 $\alpha$ (OH)D<sub>3</sub> and 1,25(OH)<sub>2</sub>D<sub>3</sub> were also covered before recommendations on the use of Bio D were provided. When an animal has no access to sunlight, has impaired fat digestibility, or high demand for calcium absorption and resorption, Bio D is recommended. This corresponds to early life (1-14 d) and during cocci challenge periods in broilers, and from 6-12 weeks of rear and from onset of lay in laying/breeder hens. It is recommended that a minimum of 50% of the vitamin D requirement is met using Bio D (34.8 mg/t is equivalent to 2788 IU vitamin D).



## Huvepharma Technical Updates

### NSP enzymes:

Recent work conducted by Texas A&M University (USA) demonstrated that Hostazym X outperforms ( $P < 0.05$ ) Axtra XAP on live performance (below) and carcass yield. Without giblets yield when fed a diet supplemented with Hostazym X was 0.6% higher and breast meat yield was 1.0% higher than when birds received a diet supplemented with Axtra XAP.



### Direct fed microbials:

Over three broiler necrotic enteritis challenge trials conducted at Southern Poultry Research (USA), challenged birds receiving B-Act (at 500 g/t) maintained performance and mortality equivalent to a challenged bacitracin (BMD) control.

### Effect of B-Act or BMD alone or in combination on 28-day performance of broiler chickens challenged with *Clostridium perfringens*.

Treatment	Weight gain Day 0-28	Feed conversion Day 0-28	%NE Mortality
Positive control	0.946 a	1.601 d	0.0 c
Negative control	0.709 e	2.087 a	16.7 a
BMD® 50 g/t, CP	0.839 bc	1.696 c	0.0 c
B-Act 0.5 500g/T, CP	0.838 bc	1.728 bc	2.1 bc
B-Act 1.0 500g/T, CP	0.875 bc	1.669 c	2.1 bc
B-Act 1.0 500g/T, + BMD® 25 g/t, CP	0.879 b	1.677 c	0.0 c
B-Act 1.0 500g/T, + BMD® 50 g/t, CP	0.973 a	1.597 d	0.0 c



