Bentoli®
CONNECT
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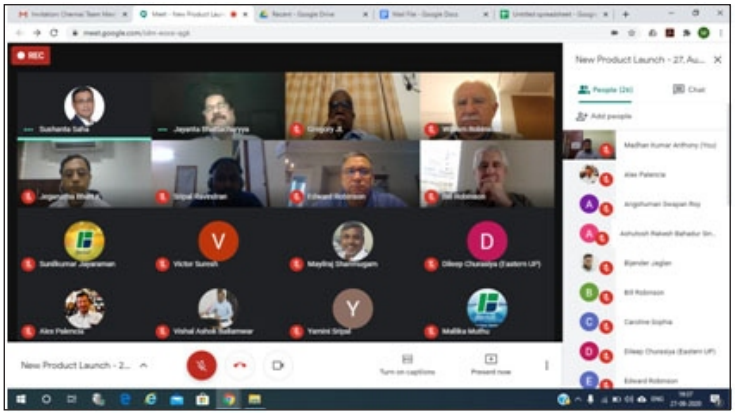
Inside News

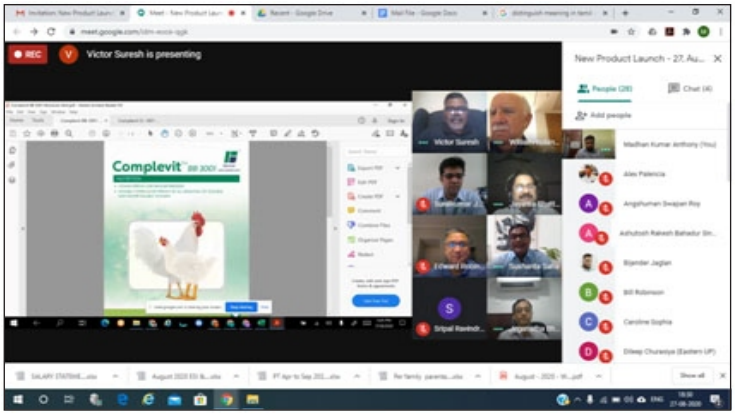
Bentoli introduces Complevit® - vitamin premix in the Indian market

Even the unprecedented global pandemic COVID-19 could not stop Bentolians in introducing new products in the market. In spite of constraints in the traditional launch program, Bentoli India organized a virtual launch meet in August 2020 for its Complevit®- a vitamin premix brand of Bentoli in India. Complevit® offers an augmented micronutrients program that was conceptualized, developed and manufactured as per global manufacturing standards and processes. Complevit® is first introduced in the Indian market to leverage longstanding knowledge and capabilities of global best manufacturing practices and standards. Apart from augmented nutritional assurances, Complevit® ensures the best homogeneity, flowability, granulometry and stable form of vitamins supplementation.

We are delighted to share some candid moments of the Complevit® online launch programme.



Global leadership as well as local team attending launch programme online



Dr. Victor suresh, Managing Director, Bentoli Agrinutrition unveiling Complevit® brochure

Mycotoxins - a serious problem in swine farming

Dr.Winai Thongmak, *Swine nutrition & Farm management Expert;*
Live Informatics Co.,Ltd, Thailand

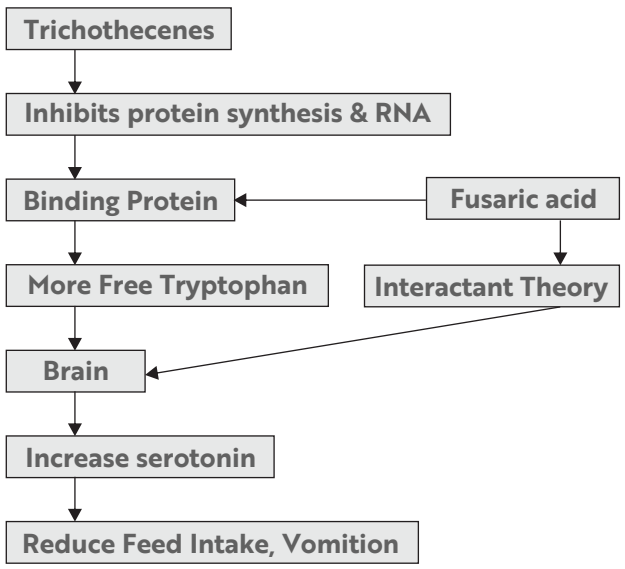
At present, reducing loss in swine farming is a challenge to veterinarians. Though laboratories or equipment for identifying the disease problems are available, sometimes solving the root cause remains unidentified. Frequent infection and degree of severity of the infection are major challenges. In spite of using the best medicines, hygiene and immunization protocol, sometimes infections related to the respiratory system and reduced reproductive performance remain unsolved and repetitive. "Immunosuppression and impact on reproductive performance in swine due to mycotoxin contamination is a major concern to all field veterinarians" Many times though level of mycotoxin is low, problems remain persistent in swine farm which is really a concern for field veterinarians and farmers as well. We'll try to understand mycotoxins and related issues in swine farming in two parts. Let's see how the farmers and veterinarians can understand the problems and continue their best efforts to resolve the issues.

What we should know about each mycotoxin?

Before discussing mycotoxicosis in pigs we should know more about each main mycotoxin and its effects on physiology and performances. We all are aware that mycotoxicosis is a complex and a fundamental cause of many problems. At the same time several mycotoxins may contaminate and exaggerate the health and can impact on performances. Hence understanding each mycotoxin and its impact on animal is quite important.

Mycotoxin	Causative Fungus	Source/ feed ingredients	How does it affect?	Impacts	Overview
Aflatoxin	*Aspergillus Flavus & A. parasiticus. These can produce many types of aflatoxins like* B1, B2, G1, G2, but the highest toxin is *Aflatoxin* B1.	Most commonly in corn, sorghum and peanuts	Inhibits protein synthesis and DNA in cells. The organs most affected are the liver	Immunosuppression through reduced lymphoid cells in thymus gland; Suppressed CMI; reduce the activity of phagocyte cells; reduced efficiency of the intracellular killing process. reduced B-cell and Antibody	Transmitted through milk and effects suckling pigs
Trichothecenes	*Fusarium spp.* produce a group of toxins : T-2 toxin, HT-2 toxin, DON, DAS & NIV but the highest one is T-2 toxin	found in soybean meal, corn	Stop protein synthesis, DNA, and RNA in cells. Therefore the cells affected are proliferating epithelial cells, white blood cells. This causes the pig to have symptoms in the intestine and digest system.	Immunosuppression through reduced lymphoid cells in thymus gland and lymph node, reduced production of IgM and IgA; suppressed cell mediated immunity and humoral immunity. T-2 toxin In combination of aflatoxins produces more severe immunosuppression	Concurrent infections of any kind and recurrences
Ochratoxins	*Aspergillus ochraceus*	soybean meal, sunflower seed meal, cottonseed meal	Causes liver damage, reduced DNA, RNA production, and gluconeogenesis in kidney cells. The kidneys are more damaged	Immunosuppression through reduced thymus gland, suppressed CMI, reduced antibody production specially IgM & IgA, reduced phagocytic activities	Immunosuppression and reduced kidney functions

Mycotoxin	Causative Fungus	Source/ feed ingredients	How does it affect?	Impacts	Overview
Fumonisins	*Fusarium Moniliforme* and *Fusarium spp.* Producing 6 major toxins Fumonisin A1, A2, B1, B2, B3, B4 but mostly Fb1.	Corn, soybean meal, rice bran meal, rice bran extraction	Effect on Sphingolipids metabolism which affects cell wall strength and communication between cells.	Immune suppression affect to reduce Thymus gland and pulmonary clearance	immunosuppression, frequent respiratory problems, cough symptoms
Zearalenone	*Fusarium spp*	corn, soybean meal, rice bran meal, fish meal	Mimics action of estrogen and causes pseudopregnancy	Increased repeat breeding and infertility in sows, boar, reduced libido, atrophied testis and accessory sex glands, reduced spermatogenesis	Poor reproductive index in farm
Fusaric acid	*80 types of fusarium spp*	Mostly found in soymeal	It has an effect on the nervous system that controls the appetite and sleep of swine.	Synergistically with trichothecenes specially with T2 toxin and vomitoxin suppresses immunity and reduces feed intake	The impact of damage is well evident in severely sick animals

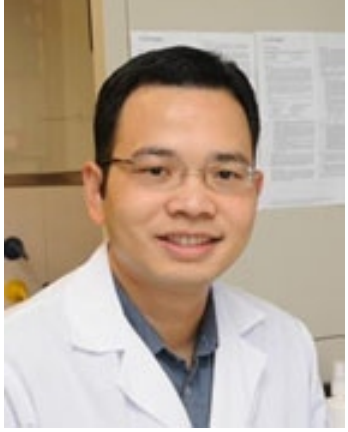


Major clinical symptoms in pigs received mycotoxin contaminated feed:

It is very important to clinically judge the cases so we can identify the root cause of mycotoxicosis. Sampling and testing of feed and feed ingredients should be routine to corroborate the clinical diagnosis. But sometimes feed sample test results may be non-conclusive and is more practical to go for a battery of clinical check points before concluding type of mycotoxicosis. So, we should know more details about clinical symptoms caused by each type of mycotoxin. Sometimes it is difficult but pertinent to understand type and level of contamination through clinical judgement and for the formulation of the best suitable **mycotoxin control programme** to implement.

(to be continued...)

Viewpoint:
COVID-19 virus does not infect aquatic food animals



WIN SURACHETPONG, *Associate Professor, Department of Veterinary Microbiology and Immunology*
Faculty of Veterinary Medicine, Kasetsart University

Since December 2019, a new coronavirus (SAR-COV2) that causes COVID-19 has been reported in Wuhan, China and began to spread widely around the world. The new SAR-COV2 infects the human respiratory tract and leads to death from respiratory failure. To date, more than 27 million and 870,000 humans (as of 6 September 2020) have been infected and died from COVID-19. The number of new infections and deaths continues to increase in many countries because there is no vaccine or drug that is effective in controlling the diseases and prevention. Therefore, the control measures such as the limit of travel, social distancing, wearing a mask in the public area, washing hands and maintaining good hygiene are the strategies to reduce the spread of COVID-19. Recently, there are concerns about the SAR-COV2 contamination in various aquatic animal products. For example, SAR-COV2 genetic materials were detected on a package of shrimp imported from Ecuador to China. This news affected consumer confidence and impacted the import/export of aquatic products. According to current scientific information, there is no evidence of the infection and transmission of SAR-COV2 in aquatic animals (fish, crab, shrimp, mollusk, and frog) and their products. Reliable information supporting the fact that SAR-COV2 does not infect aquatic animals include:

1. There is no report of any aquatic virus causing the disease in humans.
2. SAR-COV2 prefers to multiply and replicate in the respiratory tract and lung of humans and mammals, while most fish and aquatic animals do not have lungs but they use their gills for breathing.
3. Aquatic animals are cold-blooded animals, making their body temperature unsuitable for the multiplication of SAR-COV2, which required proliferation in warm-blooded animals with an average body temperature of 370C4.
4. A comparison of the ACE2 receptor, which is the primary receptor for SAR-COV2 to enter human cells, showed that fish ACE2 receptor shares only 59% amino acid similarity with ACE2 of humans and other mammals, making it extremely difficult for the virus to mutate and enter the fish cells.
5. In addition, aquatic food animals do not have the required host conditions to support replication of SARS-CoV-2. For example, assuming the virus attached to and entered a fish cell, this virus is not optimised to use the machinery of fish cells (i.e. transcription and translation enzymes, factors, etc.)

However, there is also a possibility that the virus may contaminate through uncooked aquatic products such as raw fish. This contamination may be caused when handled by people who are infected and actively shedding the virus.

- Thus, persons that contact aquatic animal products should always wash their hands with soap, wear a mask and protective equipment during processing and preparation of food.
- Those involved in the aquaculture business, mostly aquaculture processing plants, must be strict to a good hygienic practice such as employees wear a mask during operations, daily health checks for employees.
- Employees who have symptoms of respiratory illness or having high fever or at risk of exposure to a risk person should stop working and monitor any symptoms relevant to COVID-19.
- Factories and aquaculture farms should have protocols to frequently disinfect equipment, surfaces, and objects that contact humans. Moreover, consumers are advised to eat food that is cooked above 70°C

In summary, there is no current report whether aquatic animals or aquatic animal products are the cause of COVID-19 transmission to humans. As such, we may conclude that aquatic animals do not contribute to the spread of SAR-COV2 and COVID-19 provided aquatic food products are handled, processed and prepared in hygienic ways.

Reference Asian Fisheries Science 33(2020):74-78. https://doi.org/10.33997/j.afs.2020.33.1.009

Sripal Ravindran completes seven years of commendable service in Bentoli India

Sripal Ravindran, AGM Operations, Bentoli Agrinutrition India Pvt. Ltd.

Sripal has successfully completed seven years in the Bentoli family. He joined Bentoli India in 2013 when the company was still importing products from other Bentoli operations and selling in India. He was assigned the task of setting up local manufacturing in India. He recruited a team of people and worked with equipment manufacturers and builders to put together the manufacturing facility as per Bentoli's global standard and practices. After the successful commissioning of the Indian facility, Sripal's consulting services were used in the commissioning, erection and standardization of some components of the manufacturing operations in Bentoli's Thailand and US facilities as well.

Sripal was recruited as Manager, Operations. He has been promoted twice in the last seven years as a Senior Manager, Operations and as the Assistant General Manager of Operations, the position he holds now. In this position, he supervises purchasing, production, and logistics.

> "I always strive for excellence. Meeting uncompromised global quality standards starting right from the selection of best vendors, managing manufacturing processes, complying FAMI-QS and ISO guidelines are key areas where I would like to keep tabs on always. Improving capacity utilization to reduce cost of production, meeting market demand and on time delivery are key challenging areas where I would like to bring more efficiencies"