

# Showtime

## 2016 Asian show heading for a sell-out



With less than six months before the doors open at the BITEC exhibition halls in Bangkok the indications are that the show will once again be a sell-out. Companies from all over the world, both old exhibitors and new, have signed up for the Pan Asian show that opens on the 29th March through to 31st March.

Once again senior industry executives will flood from all over the world to attend what is now the largest dedicated animal feed and grain processing event in South and South East Asia.

What will they see, what will they be able to touch and examine, how does it work, would it save my company money?

All of these questions and more can be answered by industry experts who will be

available on many of the exhibitor stands.

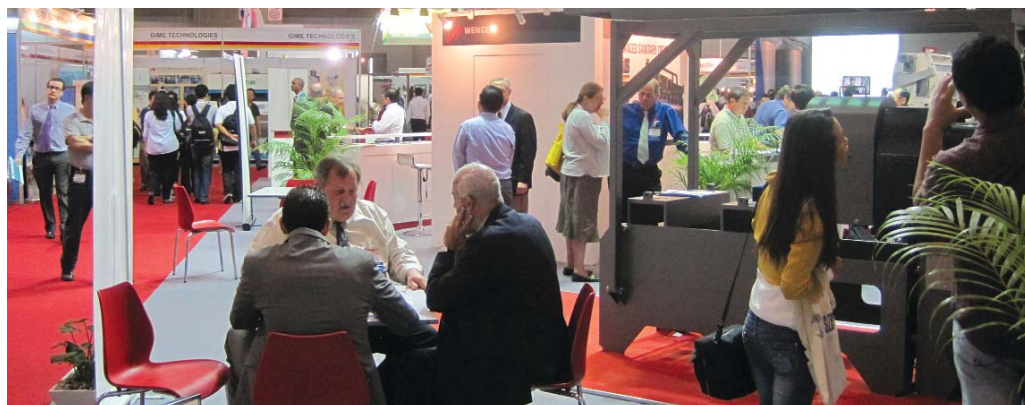
*Showtime* asked Henk van de Bunt, Victam's General Manager about the continuing success and expansion of the Asian shows in Bangkok.

"Basically the strategy of holding three

related shows under one roof is proving extremely successful. Having a focused animal feed show (FIAAP) alongside the animal feed processing show (VICTAM) has proved to be very popular with both exhibitors and visitors alike. *continued on page 3* ▶

### Inside your Autumn issue

- 3 About the shows
- 3 New event announcement
- 4 Details of conferences
- 13 Innovation awards
- 15 2015 event show report
- 20 Industry news
- 38 2016 event registration details
- 38 Contact information



**DIARY  
DATES**

29 – 31 March 2016 · BITEC · Bangkok

# FAMSUN

*Integrated Solution Provider*



## Integrated Solution Provider

- Knowledge and expertise sharing
- Feed equipment and processing line
- Turnkey project
- Customer training and service

### Maxipet

Welcome to  
our booth at  
**Victam**  
**Asia2016**



**Muyang Holdings**

Add: No.1 Huasheng Road, Yangzhou, Jiangsu, China 225127

T: +86-514-87848880 F: +86-514-85826059

E-mail: [mypublic@muyang.com](mailto:mypublic@muyang.com)

[muyang.com](http://muyang.com)

► *continued from page 1* The exhibitors favour it because the visitor profile is feed and the level of those visitors is very high, over 40% of ALL the visitors are CEO's/ Directors. This is of course far better for these exhibitors as they do not have thousands of wasted visitors and students distracting them that you so often find at other less focused shows.

Exhibitors are able to have serious, substantial discussions with their clients that have specifically come from throughout Asia and beyond to visit the event. Visitors also benefit from this strategy. They are able to visit stands/booths without having to wait for a member of staff from the exhibitor you wish to meet.

Also the exhibitors are displaying technology and ingredients that the visitor is actually interested in and so he/she doesn't have to waste a lot of time trying to find the relevant stands".

"Even the third related exhibition – GRAPAS can be of interest to the visitors as this is an exhibition for grain processing and rice milling/processing. Obviously this will be interesting for processors, rice millers/processors, flour millers etc. as they will find the latest technology being

displayed for the important industry sectors. Again with such highly targeted senior industry executives visiting this specialist show it is imperative that the exhibitors are able to discuss and explain their products in depth, this they are able to do".

#### **Benefits for exhibitors and visitors**

Another great benefit for many of the exhibitors is that they are marketing equipment and systems that can be used in an animal feed mill, a rice mill, a flour mill and also a biomass pelleting plant. These exhibitors will be displaying such technology as driers, de-humidifiers, conveying systems, silos, pumps, elevators, trucks, bagging and much more.

This is also great for the visitors as they have such a wide choice of exhibitors to compare products, prices, delivery, power consumption, etc."

I briefly mentioned biomass. Many of the world's leading manufacturers and suppliers of pellet mills will be at the show because they supply the feed industry. However these same companies also market their technology to the biomass industry for the production of biomass

pellets. Here again the exhibitors are able to talk to these clients as this expanding industry sector in Asia is included in our marketing programmes".

#### **Technical conferences**

"The event is not just exhibitions we have many other attractions going on during the show's three days. We have for instance a series of technical conferences and these complement the trade shows. The following conferences will be held at BITEC:

1. Aquafeed Horizons Asia 2016
2. FIAAP Animal Nutrition Conference
3. Petfood Forum Asia
4. Global Milling Conference with GRAPAS Asia
5. Biomass Asia
6. GMP+ Feed Safety Assurance

I am pleased that once again there will be an ASEAN Feed Summit and that there will also be the ASEAN Feed & Rice Symposium; during the symposium, which incidentally is free to all registered visitors, respected industry experts will address the assembled delegates on a wide variety of subjects.

We will also be having our Innovation Awards ceremony where it is announced who are the winning exhibitors of these prestigious awards. There are three categories, these will be explained in greater detail by the sponsors later in this edition of *Showtime*.

#### **25th Anniversary**

Lastly, we will be celebrating our 25th Anniversary of working in Asia as our first show was held in Bangkok in 1991 in an hotel car park. Very different from what you will see in Bangkok next March. We will be marking this occasion during the event."



*A series of technical conferences will complement the trade shows*

# VICTAM to launch new event

VICTAM, in conjunction with some of our conference organizers, will shortly be launching an exciting new venture.

It is our intention to organize a series of industry conferences spread over a number of days at a venue, probably near Cologne in early summer of 2017.

This will be a self-contained event where industry delegates will only be admitted after paying a fee. The typical delegate will be in the upper management of a feed mill, flour mill, grain processing or biomass pelleting plant. Industry

executives will comprise CEO's, mill & plant directors and managers, nutritionists, feed/food formulators, etc.

The conference organizers will bring together acknowledged industry experts to produce a programme of papers on each of the following subjects:

- **Animal feed ingredients and additives**
- **Aqua feed ingredients and production**
- **Biomass pelleting technology**
- **Petfood ingredients and production**
- **Flour milling & grain processing**
- **Feed production technology**

There will be an additional area where companies will be able to have a small booth.

An evening of dinner and entertainment will be organized on the first day for the conference delegates, the conference speakers and exhibitors.

A small admission fee will be charged to the industry delegates to visit the exhibition and a separate fee will be charged for the conferences.

● **Further details regarding this venture will follow in the near future.**



# Opportunities and double-digit growth in aquafeed

When **Aquafeed Horizons Asia** took place in 2012, the global aquafeed market was valued at US\$57.7 billion. New reports suggest it could reach a market value of US\$122.6 billion by 2019 – and more than three-quarters of that demand is expected to come from the Asia Pacific region.

The prime driver for growth in aquafeed globally, is the rapid expansion of the aquaculture industry in response to increasing consumer demand for fish and seafood – and in Asia Pacific, soaring domestic consumption is a significant factor, particularly for carp and shrimp feeds.

In 2012, the shrimp farming sector was reeling from the effects of early mortality syndrome (EMS) but was already seeing recovery by the time the next Aquafeed Horizons Asia came around in 2014. Since EMS was first reported in China in 2009, it spread to Vietnam, Malaysia and Thailand, causing annual losses of more than U.S. \$1 billion. Technically known as acute hepatopancreatic necrosis syndrome (AHPNS), the elusive pathogen causing the disease was identified by Dr. Donald Lightner and his team at the University of Arizona, in 2013. While this devastating disease was disastrous for shrimp farmers, the feed industry responded quickly. Functional feed additives proved efficacious and opened up new opportunities for feed manufacturers and

ingredient suppliers. The industry is now rebounding quickly and in the period 2013-2015 annual growth is projected at 6.9%.

Yet another challenge facing the aquafeed sector is the ongoing move away from dependence on fishmeal and oil. Greater use is being made of novel proteins, such as insect meal as well as algae, grains and oilseeds and their processing by-products and concentrates. Plants provide protein alternatives as well as carbohydrate sources, functional additives, such as phytobiotics, and can act as binders in aquafeeds. But they can also require challenging processing and formulation changes.

Aquaculture feed production is highly complex and ever evolving. Aquafeed Horizons brings the commercial industry together to learn about latest advances in processing technology and techniques and new ingredients and nutritional findings. Organized by the sector's information provider, Aquafeed.com, leading international experts are hand-picked and the program designed to focus on practical application.

"We understand the industry and are in constant dialogue with feed manufacturers, ingredient and equipment suppliers, farmers and all other stakeholders in this specialized sector", Aquafeed.com's publisher, Suzi Dominy said. "We listen and design the conference accordingly".

Some 140 delegates from all over the world attended Aquafeed Horizons Asia in 2014, and the organisers hope to see an even better turnout in 2016. "We are fortunate that the industry supports us, so we can keep costs down for delegates. So far Bühler, Olmix, Nutriad and Wenger have come forward to sponsor the meeting, which will allow us to keep delegate fees affordable and once again to honour our host nation by providing Thai interpretation and very special rates for Thai delegates, as well as students", Suzi Dominy said.

In 2016 the 9th Aquafeed Horizons Asia will again be held at the BITEC on



March 29, 2016, the opening day of the exhibition, from 09:00 to 17:00 hrs. For registration and full details, visit [www.feedconferences.com](http://www.feedconferences.com)

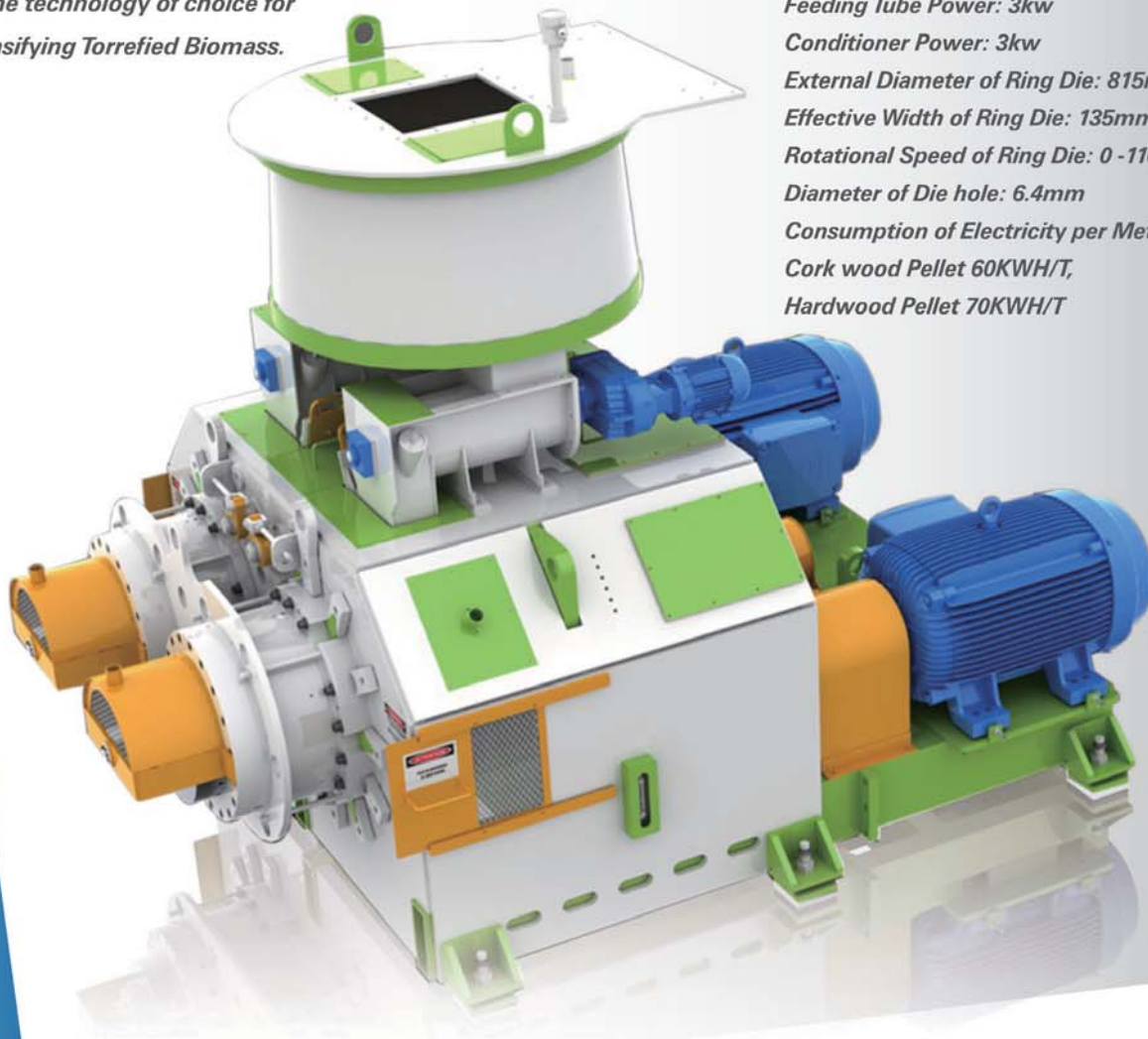


*25 per cent of all aquafeed is now designed for carp*

# DOUBLE DIE PELLETIZER

## NEW BIOMASS PELLETIZING TECHNOLOGY

*The DOUBLE DIE PELLETIZER  
is the technology of choice for  
Densifying Torrefied Biomass.*



Main Power: 185kw\*2  
Screw Feeder Power: 0.75kw\*2  
Feeding Tube Power: 3kw  
Conditioner Power: 3kw  
External Diameter of Ring Die: 815mm  
Effective Width of Ring Die: 135mm  
Rotational Speed of Ring Die: 0 -110rpm  
Diameter of Die hole: 6.4mm  
Consumption of Electricity per Metric Ton:  
Cork wood Pellet 60KWH/T,  
Hardwood Pellet 70KWH/T



Bamboo Pellets



Softwood Pellets



Hardwood Pellets



Torrefied Wood Pellets



Tel: +86 21-64188282 Fax: +86 21-64163299  
E-mail: info@zcme.com www.zhengchang.com  
Floor 25, Friendship Building No. 159, Zhao Jia Bang  
Road Shanghai P.R. China PC: 200032



**ZHENG CHANG**



# Petfood Forum Asia 2016 focuses on growing pet food market

This exclusive conference for pet food professionals in Southeast Asia provides the latest research on the market, pet nutrition, pet food safety, processing and more.

Pets have become increasingly important in the Asia-Pacific region, resulting in slow but steady growth in that market. Pet care retail sales increased from about US\$8.94 billion in 2009 to about US\$9.83 billion in 2014, according to Euromonitor International data. Specifically, dog and cat food made up US\$6.12 billion of the Asia-Pacific pet care retail sales market in 2014 (compared to US\$5.7 billion in 2009), with other pet products accounting for US\$3.39 billion (compared to US\$2.92 billion in 2009).

At Petfood Forum Asia, scheduled for March 30, 2016, pet food professionals from throughout Southeast Asia can learn about this exciting market, as well as the latest research on companion animal nutrition, pet food ingredients, safety, processing and more. All will be presented by leading industry experts at this exclusive conference, now in its fifth edition. Petfood Forum Asia will once again be co-located with FIAAP/VICTAM/GRAPAS Asia 2016.

## Strong growth outlook for Southeast Asia

Japan and China enjoyed the largest shares of the Asia-Pacific pet care market in 2014, with US\$5.24 billion and US\$1.56 billion, respectively, in overall retail sales. Other countries such as South Korea (US\$839



million in pet care in 2014), Taiwan (US\$782 million) and Thailand (US\$665 million) have seen plenty of growth since 2009 and are making their own strides, according to Euromonitor data (see Figure 1). Still other countries, such as Singapore (US\$93 million in 2014 pet care sales) and Vietnam (US\$19.1 million), remain the smallest contributors to the Asia-Pacific market, though they, too, continue to grow rapidly – up from US\$76.6 million in pet care retail sales in 2009 for Singapore and just US\$7.4 million for Vietnam.

The Southeast Asia (SEA) market, which includes Thailand, Malaysia, Indonesia, Singapore, Philippines and Vietnam, has significant growth to look forward to, according to a report by Future Market Insights. “Pet Care Market: Southeast Asia Industry Analysis and Opportunity Assessment 2014–2020” says that SEA growth will hit 6.8% by 2020, driven largely

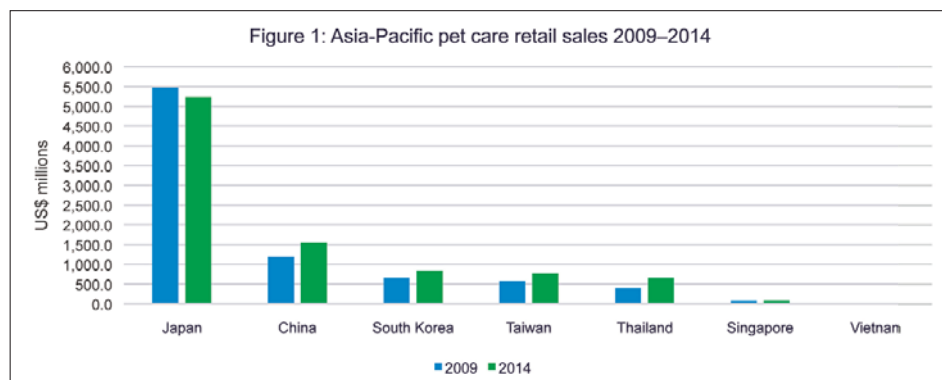
by an increasing concern toward pet health and growing demand for luxury products.

Improving consumer lifestyles and increasing disposable income in Southeast Asian countries has resulted in a growing acceptance of pets, not only among the high-income population but also the middle-income group, according to Future Market Insights. In 2014, Thailand was the dominant country in the overall SEA pet care market with a 43.62% share, followed by Malaysia and Indonesia, which accounted for 21.74% and 15.47% of the market, respectively. The pet care market in the Philippines is projected to register a robust compound annual growth rate (CAGR) of 8.4% through 2020. This is expected to be followed by Vietnam, with a CAGR of 8% during the forecast period.

Dog food is currently the primary product segment in the region, accounting for 51.6% of the market in 2014. In terms of pet food distribution channels, consumers in SEA look mostly to supermarkets; however, veterinary clinics are anticipated to exhibit the fastest CAGR at 7.1%, followed by supermarkets at 6.8%. This growth is attributed to a shift in consumer buying habits and an increasing inclination of pet owners to purchase health and wellness products from sources seen as knowledgeable and reliable, such as veterinarians, says the report.

## Asia-Pacific pet food market

See [www.petfoodindustry.com/articles/5079](http://www.petfoodindustry.com/articles/5079)



**Figure 1:** Japan holds the top spot in Asia-Pacific pet care sales, but as a mature market, its numbers declined slightly between 2009 and 2014. Developing markets such as South Korea, China, Thailand and Taiwan are expected to continue growing.



Make plans to attend **Petfood Forum Asia** on 30 March, 2016.

Visit [www.PetfoodForumEvents.com](http://www.PetfoodForumEvents.com) for information on topics, speakers, early bird registration and more.

# The GRAPAS triumvirate: The Exhibition, the Innovation Awards and the One-day Conference

GRAPAS has a three-pronged approach for the Asian milling industry in 2016: An exhibition; a conference and innovation awards. All aimed at meeting the needs of flour rice and oilseed millers of the region.

The co-located GRAPAS Exhibition – which is now a central part of the FIAAP/ VICTAM/GRAPAS exhibition offering – has become an essential destination for all visitors planning to visit the BITEC, Bangkok from March 29–31, 2016.

## Exhibition and Innovation Awards

The GRAPAS Exhibition is hosting the widest display of milling equipment, for food production, in the Asian region and will draw more millers to the event in 2016 than ever before, says Roger Gilbert of *Milling and Grain* magazine.

“It was very clear at the co-located event in Köln, Germany earlier this year, that companies displaying their equipment for feed manufacturers also produce a range of equipment for flour and rice millers.”

“Right from transportation and handling to storage and processing, much of the equipment is made to the same high standards today.”

“Food-grade surfaces and HACCP controls are just two of the aspects that manufacturers can readily address in order to offer equipment to both sectors.”

“While some equipment is unique to flour and rice milling – namely roller mills and other specialist processes – many other aspects of grain and rice processing are the same.”

“For example, control systems, packaging and bagging systems, traceability systems are also familiar to both sectors not to mention weighing and measuring, he adds.”

“The exhibition will be supported with an award ceremony that will identify the most innovative milling developments on show and a one-day conference, which takes place on Wednesday, March 30, 2016”



## The Conference

The program for the 2016 one-day GRAPAS Asia Conference, in conjunction with the Global Milling Conference, is under preparation and for the first time will reflect the conference topics and sessions offered in Cologne during the FIAAP/ VICTAM/GRAPAS exhibition in June, 2015.

“For the first time we will be introducing a registration fee for delegates to help offset the cost of bringing a range of specialist speakers to the event,” says Mr Gilbert who is the organiser of the conference. The registration fee is set at €130.

“We know there are a lot of experts in the milling industry who do not get an opportunity to have their areas of expertise discussed at conferences that attract an international audience.”

“We want to address this and provide speakers and a range of topics that will interest millers from throughout Asia.”

For example, the Thai rice milling industry will again participate in the event.

“We have growing support from the Thai rice industry and have visited Thai rice millers and research centres to ensure we are providing a program that will interest them.”

“The same for flour millers. We want to take the opportunity of the triumvirate of exhibitions, of which GRAPAS is one, to offer the best conference line-up in the region for our milling industry delegates,” he concluded.

## Registration

Registration for The Global Milling Conference with GRAPAS Asia 2016 opens on November 1, 2015 and can be accessed at: [www.bit.ly/grapas](http://www.bit.ly/grapas). The registration fee is €130/person and an ‘early-bird’ discount will be offered for those registering early.





**Bangkok International  
Trade & Exhibition Centre**



**SAVE THE DATE - MARCH 29, 2016**

# **JOIN US FOR THE FIAAP Animal Nutrition Conference**

**The leading networking and educational conference  
for the animal feed ingredients and additives industries**

**Co-located with the VICTAM/ FIAAP/ GRAPAS  
Asia 2016 Exhibitions.**

Mark your calendar for the FIAAP Animal Nutrition Conference to reconnect with colleagues, network and generate new ideas to help grow your business.

**FIAAP Animal Nutrition Conference  
March 29, 2016**

**Bangkok International Trade  
& Exhibition Center (BITEC)  
Bangkok, Thailand**

**Visit our website for more information:**

**[www.FIAAP-conferences.com](http://www.FIAAP-conferences.com)**

**Presented by**

**FeedInternational**  
Leader in Technology, Nutrition and Marketing

**WATT** GLOBAL  
MEDIA



# FIAAP Animal Nutrition Conference focuses on additive technologies for improved productivity, animal health

One-day event highlights innovative research, technologies. By Jackie Roembke, editor, *Feed International* magazine.

Everyone working in animal agriculture or related sectors is well aware of the major challenge looming on the horizon: feeding more than 9 billion people by 2050 – a population increase of 38 percent<sup>1</sup>. Coupled with a growing middle class in emerging markets, the demand for animal protein production is expected to increase by 73 percent during the same timeframe, the FAO states.

Tracking with increased animal protein consumption, global compound feed production hit 846.5 million metric tons in 2014 and will continue to rise in the years to come.

When looking at the countries contributing to both the boost in population and feed production, Asia-Pacific takes the lead. For example, the region accounts for one-third of today's total global compound feed volume and 41 percent of projected 2050 population growth.

To successfully execute on the responsible production of animal proteins – and their potential implications on human health (i.e. antimicrobial resistance, environmental, etc.) – the Asian feed industry will need to increasingly rely on the benefits of feed additives to deliver improved animal welfare and productivity. The latter is especially important as Asian producers of animal products eye export markets.

## Curbing antibiotic usage in Asia

Despite the mounting evidence that overuse of antimicrobial drugs in livestock production and human medicine is contributing to resistance, a recent U.S. research study indicates that both therapeutic and sub-therapeutic antibiotic usage in animal husbandry may actually worsen in parts of the world as they

struggle to keep up with growing output demands.

According to a team of Princeton University researchers<sup>2</sup>, without regulatory action, world antibiotic use may increase by 67 percent by 2030. In the largest antibiotic consuming countries in Asia it may even double (30 percent in China and 4 percent in India). In fact, by 2020, they suggest Asian antimicrobial consumption on a whole may actually increase by nearly 130 percent in poultry and swine production – a trend driven in part by production models shifting toward “large-scale farms where antimicrobials are routinely used.”

While reductions in the use of antibiotics in animal production may be one of the major hurdles Asian producers will face in the years ahead, many operations are finding success by transitioning away from antibiotics for growth promotion (AGP) through the use of feed additives.

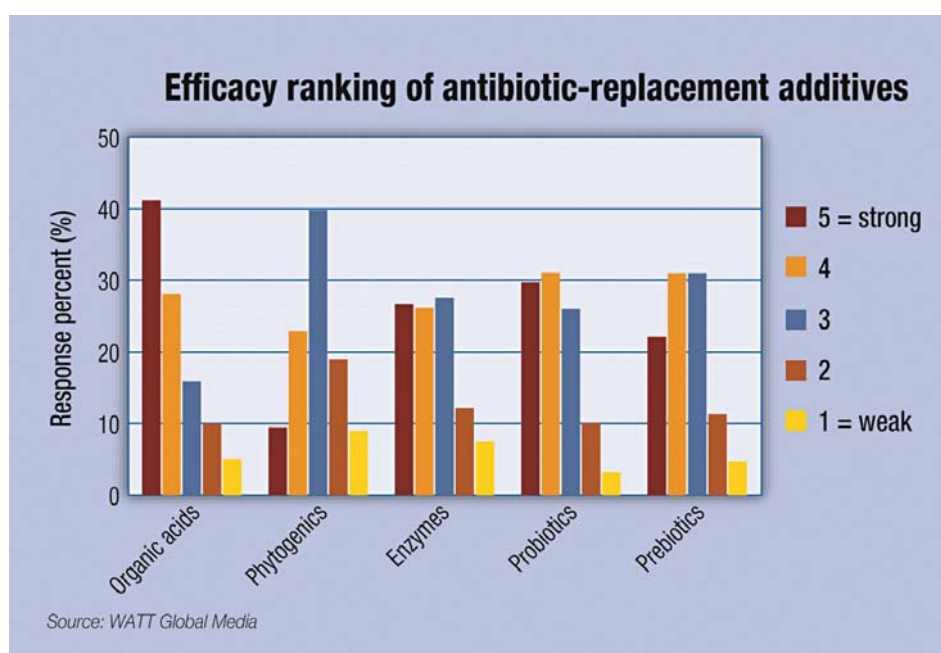
## Move away from antibiotics puts emphasis on feed additives

Eliminating the use of AGPs can pose unique management, production and health challenges for some producers; however, many are looking to enhance their feed formulation through the innovative use of animal feed additives.

To this effect, international respondents to WATT Global Media's 2015 Nutrition & Feeding Survey report seeing positive results when using organic acids to replace antibiotics (see figure 1 below). In addition, respondents also report increasing inclusions of probiotics and prebiotics due to their effectiveness. Compared to previous years, these results indicate an upward trend for these additives as AGP alternatives.

However, the additive suppliers admit there is no silver bullet that will produce the same performance gains as AGPs.

*continued overleaf* ➤



**Figure 1:** The international group of respondents to WATT Global Media's 2015 Nutrition & Feeding survey have experienced success with organic acids, prebiotics and probiotics.

Source: Feed International magazine / WATT Global Media

### Top 5 Asian compound feed producing countries in 2014

Country	Metric tons (X 1000)
China	140957
Japan	23666
India	20290
South Korea	17270
Thailand	16612

**Figure 2:** Though production has fluctuated from year to year, China continues to lead the list of the world's largest feed producing countries. View a full list of the "Top 15 compound feed producing countries" and historical data: <http://bit.ly/1JsFSuC>

Source: Feed International magazine

### Experts address critical issues

For those seeking a better understanding of new additive, nutrition and formulation innovations to tackle the aforementioned obstacles, the 7th FIAAP Animal Nutrition Conference will provide attendees with the perfect forum to learn and compare best practices with other nutritionists, formulators, veterinarians and animal health consultants throughout Asia and the rest of the world.

The one-day event, co-located with VICTAM Asia, will aim to present strategies for overcoming animal health and feed conversion challenges through the utilization of leading-edge nutrition research and technologies. It will feature a diverse and well-respected group of presenters who will address the major issues facing animal protein production with nutrition as the main driver.

Presented by *Feed International* magazine and WATT Global Media, the 2016 FIAAP Animal Nutrition Conference will provide a unique education and networking platform focused on new feed additive, ingredient and formulation solutions. The conference will be held in Bangkok, Thailand, March 29, 2016, at the BITEC.

For more information or to register for FIAAP 2016, visit [www.fiaap-conferences.com](http://www.fiaap-conferences.com).

### FIAAP Animal Nutrition Conference 2016

#### Call for Papers: Oral Presentations

- Does your company or organization have leading-edge research focused on advancing additive or ingredient innovations?
- Will you be attending FIAAP/VICTAM/GRAPAS Asia 2016?

If you answered yes to both questions, consider submitting an abstract for presentation at the 2016 FIAAP Animal Nutrition Conference. For more information about the FIAAP 2016 Call for Papers, visit <https://www.fiaap-conferences.com>.

### Related content

To view the full results from *Feed International's* 2015 Nutrition & Feeding Survey, visit <http://bit.ly/1IA67h2>.

### Asian animal feed industry overview

According to *Feed International's* 2015 World Feed Panorama, the Asia-Pacific region accounts for one-third of world feed production. Get a glimpse at the trends and companies shaping the Asian feed industry:

**Asia's Top Feed Companies:** <http://bit.ly/1JHvNsZ>

**ASEAN trade bloc offers opportunity to feed manufacturers:** <http://bit.ly/1hPalqO>

1 Pew Research Center

2 Van Boeckel, et al., "Global trends in antimicrobial use in food animals," *Proceedings of National Academy of Sciences*, May 2015: Vol. 112, No. 18

## ADVANCED FEATURE SOLUTIONS LINE

Extru-Tech, Inc., literally redefined Extrusion Process Solutions exceeding the changing market needs.

The latest market developments in innovative formulas, ingredient label accuracies and food safety are rapidly changing the way the world looks at pet food. The Extru-Tech line of Advanced Feature Solutions meet those changing needs through **BEST IN CLASS:**

- Processing Flexibility
- Accuracy and Consistency
- Food Safe Design - Increasing Uptime and Profitability
  - › Increased access under, on, and around
  - › Reducing cross contamination/pathogen risk
  - › Quick, complete cleaning greatly reducing downtime
  - › Scientifically Validated Preconditioning/Extrusion Solutions

All features that take your manufacturing and finished product to the next level.



P.O. Box 8  
100 Airport Road  
Sabetha, KS 66534, USA  
Phone: 785-284-2153  
Fax: 785-284-3143  
[extru-techinc@extru-techinc.com](mailto:extru-techinc@extru-techinc.com)  
[www.extru-techinc.com](http://www.extru-techinc.com)





Whilst only a “teenager” as an industrial sector, the global wood pellet industry is a remarkable biomass success story. Production output 2014 is estimated to have been just over 27 million tonnes, almost a seven-fold increase over the last decade. South East Asia is rapidly emerging as an industrial market already accounting for 10 percent of global pellet demand.

# Rising demand for biomass pellets

In the energy world, pellets are a low moisture densified biomass fuel usually made from wood though other agricultural residues such as straw, sunflower husks and empty fruit bunches (EFB) are increasingly used. Sparked by the oil crisis in 1973 and 1979, fuel pellet projects and plants began to appear at forest industry operations in Europe and North America during the late 1970s. Using densification technologies, primarily from the animal feed industry, the idea was to produce a boiler fuel from mill residues and replace oil.

## Manufacturing process

The objective of a biomass pellet manufacturing process is to produce a uniformly dimensioned (~6-12 mm x 22mm) low (< 10%) moisture biomass fuel product that has high energy density and low (<2%) ash content. This improves the handling and combustion properties of the biomass while making it economically viable to transport long distances and, if produced according to international technical and sustainability standards, a tradable “near-commodity” product. The process generally

consists of three to six process stages depending on the type of feedstock used, its particle size and moisture content; chipping/size-reduction; drying; grinding; pelletising, cooling/conditioning and packaging (bagging)/bulk storage.

## Types of biomass pellet

Available as residential or industrial grade, biomass pellets are used for residential and commercial space heating as well industrial and utility heat and power production.

Essentially there are three types of biomass pellets on the market place:

- **“White” pellets** – made from clean wood such as sawdust without bark and used in stoves and pellet boilers in the residential and commercial heating sector.
- **Industrial pellets** – made from low-grade roundwood and forest residues with some bark permitted and used by the energy sector for co-firing with coal or in dedicated plants.
- **Advanced biomass pellets** – a coal-like fuel made from biomass by thermally treating it in the absence of oxygen. Various technologies (torrefaction, steam

treatment, hydrothermal carbonization) exist though many are at pilot- or pre-commercial stages. The pellets are used by the energy sector for co-firing with coal or, with minor plant modifications, as coal replacement in existing plants.

## Growing markets

Today the European Union (EU) is the largest consumer and producer of wood pellets though North America is expected to become the largest producer.

South East Asia on the other hand is emerging as a fast growing market for industrial grade biomass pellets for co-firing in coal-fired power stations driven by renewable energy policies. Last year South Korea alone consumed around 1.9 million tonnes with a significant share imported from Thailand, Malaysia, Indonesia and Vietnam where production capacity has increased. Some industry projections suggest that Asia may reach a demand of 10 million tonnes by 2025 suggesting ample investment opportunity not least for those with suitable biomass residue streams in the wood, feed, grain or palm oil industries.





# BI MASS PELLETS ASIA 31 MARCH 2016 BANGKOK, THAILAND

Join us for Bioenergy International's 3<sup>rd</sup> edition of "Biomass Pellets Asia" - a one day conference on biomass pellets held as part of Victam Asia 2016.

Find out why biomass pellets are emerging as an attractive alternative fuel for power generators in South East Asia, and what feedstock and technologies can be used for biomass pellet production.

Limited speaking and sponsorship opportunities available, contact  
Dorota.Natucka@bioenergyinternational.com  
Xinyi.Shen@bioenergyinternational.com

For more information visit:  
[www.bioenergyinternational.com](http://www.bioenergyinternational.com)  
[www.victam.com](http://www.victam.com)

Organiser **BIOENERGY**  
INTERNATIONAL

Partner

See us at  
**VICTAM**  
Asia 2016



# Innovation awards highlight industry excellence

## ● Animal Feed Technology & Nutrition Award

The renowned magazine *All About Feed* in association with Victam International BV will present for the third time the **Animal Feed Technology & Nutrition Awards** in March 2016. This award will be granted to the most striking innovation in animal nutrition presented at FIAAP Asia 2016

All nominations will be published on the *All About Feed* website and as a preview in the *All About Feed* magazine. This issue is distributed throughout a readership of over 18,000 selected subscribers who are involved within the animal feed sector and related industries. Nominations will be clearly marked during the exhibition and in the show guide in order to easily attract the attention of visitors.

Your entry has to be a **feed ingredient and/or feedstuff and/or nutrition technology** for animal feed and/or petfood.

All entries are subject to the utmost confidentiality until publication on the web as of 1st March 2016; please contact Emmy Koeleman (see below) if you do not wish any information about your innovation to be published before the exhibition.

**How to enter:** To participate in this contest the feed ingredient and/or feedstuff, nutrition technology has to:

- be introduced to the market after 1st January 2014, and
- be really new, and
- improve animal health and/or
- improve animal performance, and/or
- reduce costs
- be easy included in the feed or
- be easy distributed to the animal
- be a legal ingredient

To submit your entry, please complete the form before 15th January 2016. Since the nominations will be published in *All About Feed*, please send accompanying pictures, illustrations or logos in digital format (min 300 dpi) to: [innovation@reedbusiness.nl](mailto:innovation@reedbusiness.nl)

## ● The GRAPAS Innovation Award

The **GRAPAS Innovation Awards** have taken on a competitive edge for those supplying products, equipment and services to the milling industry.

"The FIAAP/VICTAM/GRAPAS event in Germany showed us just how keen the

competition is today for the award. More companies are entering than ever before and the standard of those entries is rising each time," says Roger Gilbert of *Milling and Grain* magazine.

Exhibiting companies can easily put forward an application through their exhibitor's manual "and we encourage all companies to consider doing this," he adds.

*Milling and Grain* provides additional promotion for all products that make it onto the short-list from which an independent judging panel makes its selection.

## ● The Aquafeed Innovation Award

*Aquafeed.com*, the information resource for the worldwide aquaculture feed industry, will once again present the **Aquafeed Innovation Award** at FIAAP/VICTAM/GRAPAS Asia 2016. This highly sought after award honours the achievements and contribution of the allied industries to the advancement of aquafeed development.

Farmed fish and shrimp hold the greatest potential of any livestock sector for producers of feed: aquaculture continues to show phenomenal double-digit growth, in terms of both volume and species farmed and today more tons of seafood are farmed than beef. As for all livestock, the success of the aquaculture industry rests on the development of appropriate, cost effective feeds.

The aquafeed sector has reflected the growth of aquaculture, growing in volume by 17% in 2014. However, developing feeds for aquaculture faces challenges unparalleled in the feed industry, thanks to the diversity of species, rearing methods and environment.

To give an idea of the challenge: feeds are required for farmed species at every life stage – from a larval shrimp of less than 0.4 mm in length, to a broodstock fish weighing several kilos. Some feeds must meet the needs of predatory carnivores, raised in open ocean cages in the warm waters of the Pacific, or the icy waters of Northern Europe and for species such as sea urchins, raised in salt water tanks on land, or fresh water fish grown in raceways. Some feeds need to float near the surface, some to sink at a controlled rate to the



**Above:** The Aquafeed Innovation Award is one of the three awards being presented at FIAAP/VICTAM/GRAPAS Asia 2016.

bottom – but all of them must meet the specific nutritional needs of the animal, attract them, taste good and stay together in water, without falling apart.

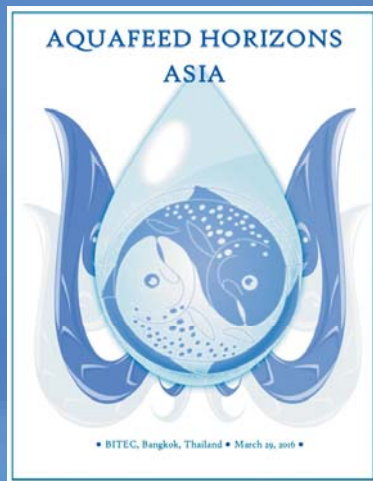
For aquaculture to continue to develop and play its full role in feeding the world, these challenging and exacting needs must be met. Ingredient and additive suppliers and technology companies make a crucial contribution to overcoming the obstacles and advancing the blue revolution.

The **Aquafeed Innovation Award** recognizes the company that develops a new ingredient, equipment or service that its independent panel of international experts judge to contribute the most significant benefit to the manufacture of aquafeed in terms of innovation, efficiency, profitability, safety or sustainability.

Exhibitors at FIAAP/VICTAM/GRAPAS Asia 2016 are invited to submit their entries for this award through the online exhibitor manual. The deadline is 15th January 2016.

# 9<sup>th</sup> AQUAFEED HORIZONS ASIA

~ *Advances in Processing & Formulation* ~



## Save the Date!

Join aquafeed industry leaders at the  
**9<sup>th</sup> Aquafeed Horizons Conference**

**March 29, 2016** BITEC, Bangkok, Thailand

Brought to you by Aquafeed.com, the aquaculture feed industry information specialist, the Aquafeed Horizons series of international conferences in Europe, Asia and the USA, brings the latest practical and commercially applicable processing and formulation solutions to professionals worldwide.

Sponsored by:



An Aquafeed.com Conference in association with Victam International and supported by:  
Thai Ministry of Agriculture & Co-Operatives, Thai Department of Livestock Development,  
Thai Department of Fisheries, Thai Feed Mill Association, Thai Rice Processing Association,  
Thai Petfood Industry Association, Thai Chamber of Commerce and the Thai Conventions &  
Exhibition Bureau.

*Aquafeed.com, llc, Kailua, Hawai'i. Informing the aquaculture feed industry since 1998.*



T H R E E

S H O W S

I N O N E



The only dedicated trade show for the supply, use and formulation of ingredients, nutrition and additives for animal feeds, dry petfood and aquafeed



The world's largest event for the production and processing of animal feeds, dry petfood and aquafeed. Also including biomass pelleting technology



The show for flour and rice milling, grain processing, industrial pasta and noodle processing, extruded snack and breakfast cereal production

9 – 11 June 2015 · Koelnmesse, Messeplatz 1, 50679 Cologne, Germany

Show



Report

Global industry executives from the animal feed, flour & rice milling, grain processing and biomass pelleting industries descended on Cologne in Germany at the beginning of June. These senior executives had come to visit the 2015 edition of the renowned **FIAAP/VICTAM/GRAPAS International** exhibition and conferences.

Thousands of **visitors** came through the doors of the KoelnMesse exhibition centre, set in the heart of the beautiful and historic city of Cologne. They had come from as far away as Australia and **every continent was represented**. There were even official delegations from Japan, PRC, Thailand, Turkey and Russia. In all there were **over 7,500** visits recorded by our scanners to the show over the three days and this figure does not include exhibiting staff.

The **exhibitors**, of which there were **276**, were busy with serious trade enquiries and discussions, many lasting a long time. There was much to see for the trade professionals and also a wide range of **new products** that were launched at the show.

During the three days of the show there were the following conferences: **The FIAAP Conference, Aquafeed Horizons, AEBIOM Pellet Workshop, Petfood Forum Europe 2015, GMP+ International Feed Safety Assurance certificate, The IFF Feed Conference and The Global Milling Conference with GRAPAS International 2015.**

For the first time ever **FEFAC** (the European Feed Manufacturers Federation) held its **Annual General Meeting** during the event and their members joined the exhibition as well.

Additionally Victam arranged for free tours to the **Vitelia feed mill** and the newly opened **Feed Design Lab** in the Netherlands. These proved very popular with the visitors.

*“We had very good contacts with companies we are already working with and those face to face meetings are always very valuable.”*

*“If only it was a day or two longer!! So much to see in so little time!!”*

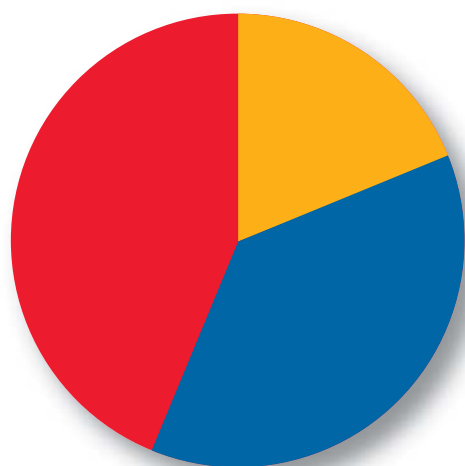
*“I liked this show, although I visited several exhibitions in the world, the only thing that distinguishes it chose you for excellent global companies”*

*“An interesting event and I thoroughly enjoyed it. Thank you.”*

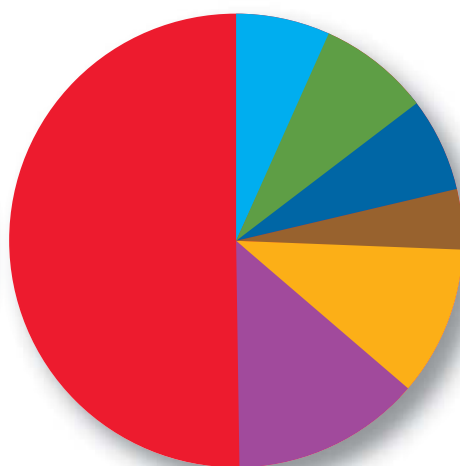
### Geographical breakdown of visitors







Job functions of visitors	%
CEO, Directors	42.49
Nutritionists, feed formulators	17.83
Management	39.68
<b>Total</b>	<b>100</b>

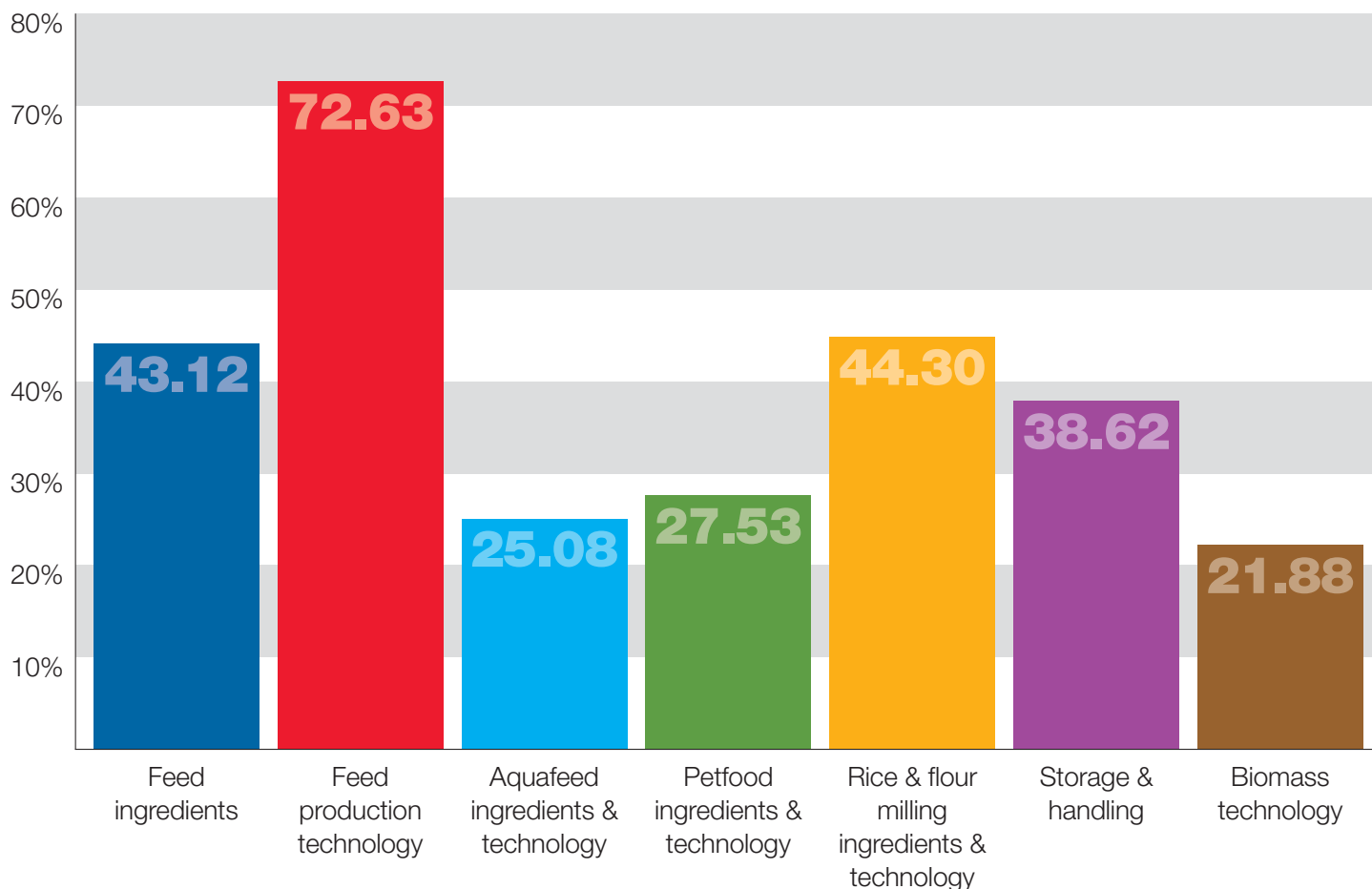


Main business activities	%
Animal feed industry	50.37
Aquafeed industry	6.59
Petfood industry	8.38
Integrators	6.91
Rice & flour industries	10.12
Biomass	4.80
Others	12.83
(Universities, Chambers of Commerce, Government, Media and unspecified)	
<b>Total</b>	<b>100</b>

*“It’s very professional rice and feed milling industry expo. We attended several times, It’s not only good stage for searching world potential clients, but also very good opportunity to get know more the advanced milling technology continuous. It’s really widen us sight and push us with the urgently conscious to prove our products quality and enhance good service for our clients to win the world future market. Thanks.”*

### Sectors of interest to the visitors

The total of these percentages is over 100% as a number of visitors expressed an interest in more than one sector.



## Innovation awards

At the end of the first show day the winners of the three different innovation awards were announced. They are as follows:

### The Aquafeed Innovation Award

organised by Aquafeed.com was won by Tovalia Intelscan, France.

### The FIAAP Animal Nutrition Award

organised by trade magazine AllAboutFeed was won by Adifo, Belgium.

### The GRAPAS Award

organised by trade magazine Milling and Grain had joint winners: Alapala, Turkey and Buhler AG, Switzerland.

## 50th anniversary celebrations

Victam celebrated its 50th anniversary with a celebration dinner and an evening of magical entertainment for 500 guests at the elegant Flora and botanical gardens in Cologne.

During this dinner the President of the Victam Foundation, Mr. André Oosterveld thanked the guests for their continued support of the exhibitions and especially praised the exhibitors for their professional and innovative stands, as well as the enormous and varied amount of products on display.



Organised by

### Victam International BV

PO Box 197, 3860 AD, Nijkerk,  
The Netherlands

Tel: ++31 33 246 4404

Fax: ++31 33 246 4706

Email: expo@victam.com

Web: www.victam.com

## Exhibitors at the 2015 event

4B Braime Elevator Components  
Abraziv E.O. and Machine Mfg. Ltd.  
ACTEMIUM  
Adifo NV  
Aerox B.V.  
Ag Growth International  
Agrimedia  
Agromatic AG  
Alapala Machine, Food and Trade  
Industry Inc.  
Almex  
Altuntas Havalandirma Turizm San.Tic.  
Alvan Blanch  
Amandus Kahl GmbH & Co. KG  
Ambros Schmelzer & Sohn GmbH  
Ana Degirmen Sistemleri  
Andritz Feed & Biofuel A/S  
Aquafeed.com  
ArcelorMittal Ringmill S.A.  
Arodo BybA  
Arthur Krüger GmbH  
Avantron  
AWILA Anlagenbau GmbH  
Aybakar Machinery and Foreign Trade  
Co. Inc.  
Bakker Magnetics  
Bastak Laboratory Instruments &  
Improvers  
BBCA Depolama Sistemleri Tarım n. ve  
Mak. San. Tic. A.  
Bechtel GmbH  
BEHN + BATES Maschinenfabrik GmbH  
Beijing Keepyoung Tech. Co., Ltd.  
Bentall Rowlands Storage Systems  
Bioenergy International  
Bitzer Wiegetechnik GmbH  
Bm Silo ApS  
Brabender GmbH & Co. KG  
Bruins Instruments  
Bruker  
Bühler AG  
C. Gerhardt GmbH & Co. KG  
CPM Europe BV  
Cablevey Conveyors  
Carl Aug. Picard  
Centre for Feed Technology  
Cereal and Feed Industry Magazine  
Cetec Industrie  
CFE Ltd.  
Chief Industries UK Ltd.  
Chiriotti Editori SRL  
Chopin Technologies  
Christy Turner Ltd.  
CIMAS SRL  
Cimbria AS  
Clextral  
Cofely  
Concetti S.p.A.  
Context Products Ltd.  
Crowley Engineering  
Cukurova Silo  
Cusinato Giovanni SRL S.U.  
Dalian MasterChem Limited  
Daniait A/S  
Danvaegt A/S  
Darling Ingredients Inc.  
Datator Systems Ltd.  
Dehsetler Grain Storage Systems  
Detia Degesch GmbH  
Deutsche Müllerschule Braunschweig  
Dinnissen BV  
DLG Service GmbH  
DMN-Westinghouse  
Dongying Tianrun Biotechnology Co., Ltd.  
DSL Systems Ltd  
Dutch Milling Technology Int. B.V.  
E.F.S.-Holland B.V.  
E.S.E. INTEC  
eFeedLink Pte Ltd  
EMT GmbH Euro-Misch-Technik  
Entil AS  
EnviroLogix Inc  
Erkaya Laboratory Instruments  
Expokhle  
Extruder Experts GmbH & Co. KG  
Extru-Tech, Inc.  
Eye-Grain Aps. - IGRAIN  
F.H.Schule Muehlenbau GmbH  
Famsun  
Farmcomp Oy  
Farmet a.s.  
Feed Design Lab  
Feed Industry Magazine  
Feed Review Magazine  
Feedtech Makine Ltd. ti.  
FEROTEC  
Ferrel Ross  
FineTek Co., Ltd.  
Fischbein Deutschland GmbH  
Fjordvejs Maskinfabrik A/S  
Forberg International AS  
Format International Ltd.  
FOSS GmbH  
FP Engineering Ltd / FP Spomax SA  
Fragola F.lli S.p.A.  
FRAME SRL  
Franz Högemann GmbH  
Franz Ludwig GmbH  
Fredrik Mogensen AB  
Friedrich Electronic GmbH & Co. KG  
FrigorTec GmbH  
Fundiciones Balaguer S.A.  
Gaudenzi SRL  
Geelen Counterflow  
General Dies SRL  
Global Industries, Inc.  
Goudsmit Magnetic Systems BV  
Graf GmbH  
GreCon Greten GmbH & Co. KG  
Gruschkus GmbH  
GSI Group LLC  
Guttridge Ltd.  
Hansmeier Steuerungstechnik GmbH  
Has Sentetik Cuval Ve Tekstil San Tic Ltd.  
Hunan Xiangliang Machinery Manufacture  
Co., Ltd.  
Hybrimin Computer + Programme GmbH  
Hydronix Ltd.  
IMAS Integrated Machinery Systems  
Imtech  
Indus Integrated Bulk Logistics BV  
Infracont Instruments Ltd.  
Insta-Pro International  
Inteqnion  
International Health Care Limited  
(PVS Group)  
Internationale Forschungsgemeinschaft  
Futtermitteltechnik e. V. (IFF)  
IVS Dosing Technology  
Jacob Pipework Systems  
Jesma Weighing Solutions  
JPT-Industria Oy  
K.H. Witte Anlagenbau GmbH & Co. KG  
Keller H.C.W GmbH  
Kepler Weber Industrial S/A  
Kessens Technik mit System GmbH  
KMH-Kammann Metallbau GmbH  
Koan Cheng Fa Industrial Co., Ltd.  
Kombikormovaya (Compound Feeds)  
KSE Process Technology B.V.  
La Meccanica SRL Di Reffo  
Lachenmeier Monsun A/S  
Laidig Systems, Inc.  
Lambton Conveyor Limited  
Leonhard Breitenbach GmbH  
AB Liros Electronic  
Mangra, S.A.  
Martin GmbH  
Mathews Company  
Menci & C. S.p.A.  
Mial SRL - MF Tecno SRL  
Mitchells Europe  
MMW Technologie GmbH  
Molini D'Italia  
Molino Inc.  
MORILLON  
Mühle + Mischfutter im Verlag Moritz  
Schäfer GmbH & Co. KG  
Muller Beltex BV  
Multicracker BeNeLux  
Multicracker PTW Technologies GmbH  
Münch-Edelstahl GmbH  
N.M.Heilig BV  
Neospark Drugs & Chemicals Private Ltd.  
NERAK GmbH Fördertechnik  
NEUERO Industrietechnik  
Newland Engineering Co Ltd.  
NIR-Online GmbH  
Nisa Media  
NORO Gesellschaft für Rohrsysteme  
Norvidan A/S  
Nukamel NV  
Ocean Optics  
OET  
Ophicina SRL  
Optima Pressformen GmbH Co. KG  
Orient-Sunrise International (Qingdao)  
Co. Limited  
Ottavanger Milling Engineers  
Özen Grain Milling Machinery  
Pentlands Publishing Ltd.  
Perendale  
Perten Instruments GmbH  
Petkus Technologie GmbH  
Pfeuffer GmbH  
PLP Liquid Systems SRL  
Poeth BV  
Polem BV  
Precia-Molen  
Preco  
Premier Tech Chronos  
Promtek Limited  
PSP Machinery S.r.l.  
PTM Technology  
PTN  
Qingdao Hongbo Import & Export  
Co., Ltd.  
Q-Interline A/S  
R K Bio Feed Machine  
Radar Automation NV  
Reed Business Media  
Repete Corporation  
RFG Rheinische Feuerschutz GmbH,  
Brand- und Explosionsschutzsysteme  
Riela Karl- Heinz Knoop e.K.  
RMIG  
Rosal Instalaciones Agroindustriales  
Rotex Europe  
Rova N.V.  
Rüter Maschinenbau GmbH & Co. KG  
S&W RohrSysteme GmbH & Co. KG  
SABE  
Salzhäuser Maschinenbautechnik  
SALMATEC GmbH  
SAT Silo- u. Anlagentechnik GmbH  
SCAFCO Grain Systems  
SCE N.V. Silo Construction & Engineering  
Schenck Process  
Schmiedewerke Gröditz GmbH  
Schrage  
Schrauben Trading & Engineering NV  
SCHULZ Systemtechnik GmbH  
Servipack Italia SRL  
SETREM  
Simatek Bulk Systems A/S  
Sizer Ltd.  
Skala Prosessteknik AS  
SKIOLD A/S  
Solids Instruments  
Source Technology  
Sparos Lda  
ST Automation  
STIF  
STOLZ  
Sun Magnetic Sys-Tech Co. Ltd.  
Supertech Agroline ApS  
Swiss Institute of Feed Technology (SFT)  
Synmach BV  
Talent Asia Services Co., Ltd.  
Tapco Inc.  
Tebodin Netherlands BV  
Technix  
Tecnofood Italia  
Testmer Warszawa S.A.  
Thermo Scientific  
Tietjen Verfahrenstechnik GmbH  
Top Silo Constructions  
Tout Pour Le Grain (T.P.L.G.)  
Tovalia Srl  
Ugur Makine  
Unipoint AG  
Unormak Degirmen Makineleri Co.  
UWT GmbH  
V.A.V. Aandrijvingen BV  
Van Aarsen  
Van Mourik Ede BV  
VDL Industrial Products BV  
Vibrafloor  
vibronet Gräf GmbH & Co. KG  
Victam International BV  
VIGAN Engineering S.A.  
Vortex Valves Europe GmbH  
WAM GmbH  
WATT Global Media  
Weigro BV  
Wemo Technik  
Wenger Overseas, Inc.  
Westeel Emea  
Wiese Förderelemente GmbH  
World Grain  
World's Poultry Science Association  
(WPSA)  
Wuhan Gime Food Machinery Co. Ltd.  
Wynveen International  
Yemmak A.S.  
Yentar Makine Sanayi Ve Ticaret A.S.  
Yenar A.S.  
Zheng Chang  
ZhenJiang DanTu ShuangCheng Fan  
Factory  
Zhenjiang New Hengtong Conveying  
Equipment Co., Ltd.  
Zhenjiang Sanwei Conveying  
Equipment Co., Ltd.





“Very informative  
and beneficial for me as  
a first time attendee.”



# Save the Date

**3 • 30 • 2016**

**MARCH 30, 2016**

**Bangkok International Trade  
& Exhibition Center (BITEC)  
Bangkok, Thailand**

Co-located with the VICTAM/ FIAAP/  
GRAPAS Asia 2016 Exhibitions.

Enjoy valuable networking opportunities  
with peers from throughout Southeast  
Asia and the world, while hearing the  
latest research and information on the  
pet food market.

**MARK YOUR CALENDAR NOW  
AND MAKE PLANS TO ATTEND!**

**TO REGISTER GO TO:**

**[PetfoodForumEvents.com](http://PetfoodForumEvents.com)**



Presented by

**Petfood**Industry

**WATT** GLOBAL  
MEDIA

# The Latest in Mycotoxin Risk Management

By Verena Starkl, Product Manager, Mycotoxin Risk Management, BIOMIN Holding GmbH.

Given animals exposure to mycotoxins, damage caused by mycotoxin contamination costs the industry millions of dollars in losses globally each year.

Most producers are familiar with the harm that mycotoxins cause and recognize the need for monitoring and mitigation as part of a complete mycotoxin risk management program. Results of the latest BIOMIN Mycotoxin Survey focus on Asian commodity data indicate that finished feed and maize (corn) frequently contain harmful mycotoxins at levels that pose a known threat to animals' health and performance.

As Figure 1 (below) shows, deoxynivalenol (DON), fumonisins (FUM) and zearalenone (ZEN) were the most frequently occurring mycotoxins found in samples, followed by aflatoxin (Afla) and ochratoxin A (OTA). T-2 toxins (T-2) were present in 3% of all samples. Fumonisin were identified in three out of four corn samples tested, and in half of cases concentrations exceeded known risk thresholds. In Asia, fumonisins were identified in 59% of samples, and in 31% of those cases the average concentrations exceeded the risk threshold.

## Find one, find many, find trouble

We know from decades of research on mycotoxins that they tend to occur in groups. This phenomenon, known as co-exposure, is not only common, but also more dangerous for animals. According to the 2014 BIOMIN Mycotoxin Survey, analyzed samples contained on average 30 different mycotoxins and metabolites per sample. In Asia, 86% of samples contained at least one mycotoxin and over 60% showed co-occurrence (contained more than one mycotoxin). On the field this can cause greater overall harm to animals due to synergistic effects: when mycotoxins occur together the adverse consequences of each mycotoxin (separately, often in a lab) can be amplified.

## Protecting animals

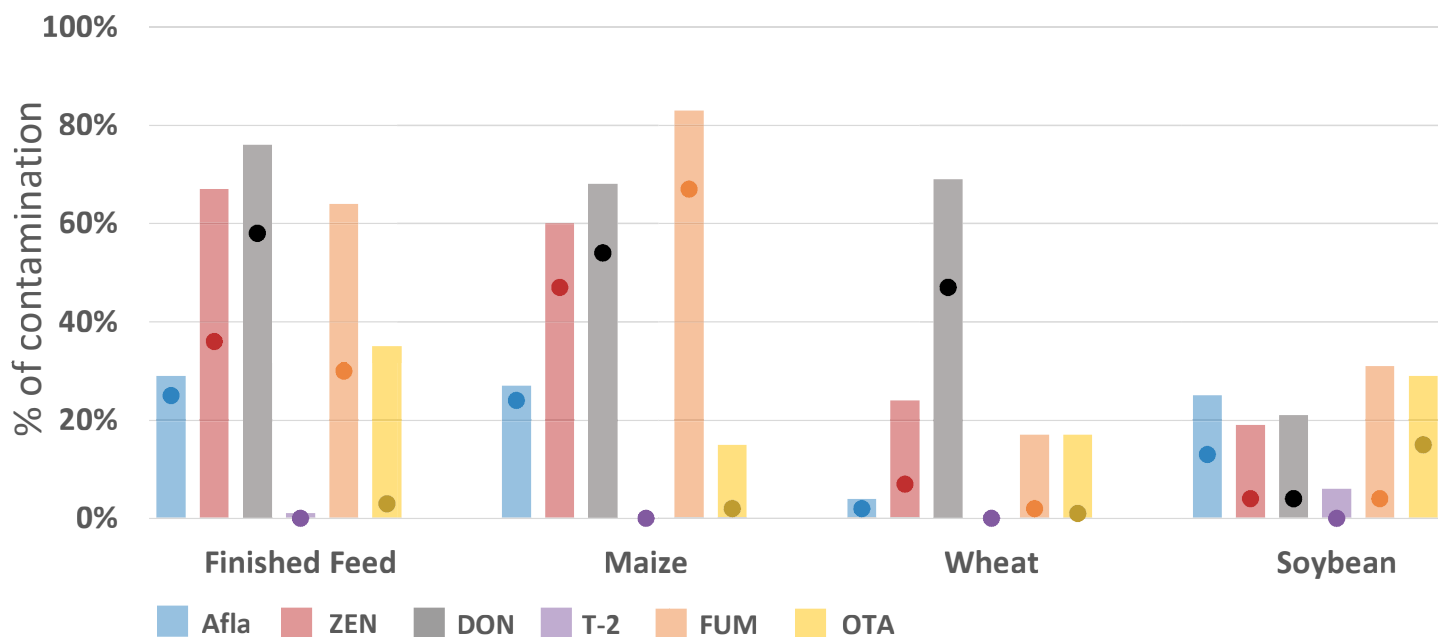
In light of the variety of mycotoxins that can impair animals' health and performance, a multi-pronged approach is needed to protect animals: an innovative, all-in-one feed additive that uses three modes of action –biotransformation, adsorption and bioprotection– to deliver absolute protection against mycotoxins.

## Broader spectrum of mycotoxins

Various components act according to one of three complimentary modes of action so that the commercially available feed additive (Mycofix®) acts against the broadest range of mycotoxins found. A number of these components work in ways that are both specific (target a single mycotoxin) and irreversible (cannot be undone). In addition to components that deactivate trichothecenes, zearalenone, ochratoxin A and aflatoxins, the mycotoxin deactivating product includes a purified fumonisin esterase (commercial name FUMzyme®) that specifically cleaves off the two tricarballic acid side chains of the fumonisin molecules. This hydrolysis renders fumonisins non-toxic, protecting pigs from fumonisin-related respiratory problems such as porcine pulmonary edema, liver damage and weakened immune systems.

## Biomarkers

Biomarkers used as indicators for mycotoxin exposure or biological response to mycotoxins are promising tools to evaluate the mycotoxin risk in animals.

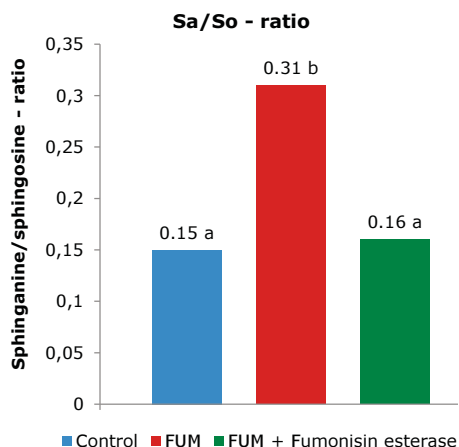


**Figure 1:** Prevalence of mycotoxins in Asian feed commodities.

Bars indicate percentage of samples testing positive for mycotoxin presence. Dots indicate percentage of samples registering concentrations known to impair animal health or performance. Source: BIOMIN, 2015



Fumonisin toxicity is based on the structural similarity to the sphingoid bases leading to the inhibition of the biosynthesis of sphingolipids. Sphinganine/Sphingosine ratio (Sa/So ratio) can be used as a biomarker for fumonisin effects, indicating a major disruption in sphingolipid metabolism. Sa/So ratio, measured in piglets at day 42, was increased in the FUM-group ( $P < 0.05$ ) fed 5,000 ppb. By the addition of the fumonisin esterase levels of Sa/So were reduced to control levels (Figure 2).



**Figure 2:** Sa/So ratio in blood of piglets fed diets contaminated with fumonisins.

Bars with different superscripts differ significantly ( $p \leq 0.05$ ).

### Proven safety and effectiveness backed by three EU authorizations

Currently there are only three EU authorized feed additives proven to adsorb harmful mycotoxins and to biotransform mycotoxins into nontoxic metabolites—all of which are included in the commercially available feed additive. Each of these ingredients was evaluated in scientific and

practical relevant field trials to assure safety and effectiveness.

### Not all authorizations are equal

Authorized specifically for mycotoxin inactivation.

European Commission Regulation (EC) No 1831/2003 established the rules governing EU authorization of additives for use in animal nutrition. Additives fall into various categories and functional groups. "Substances for reduction of the contamination of feed by mycotoxins" are functional group (m) of the category "technological feed additives" (1). Other functional groups of technological additives include anticaking agents, binders, preservatives etc. Only those authorized by the EU in category/functional group "1m" have the legal basis for official claims regarding mycotoxin deactivation and are subject to scrutiny by the European Food Safety Authority with regards to product safety and effectiveness.

### Many claims about binders

Bentonite is a natural clay often used as a binder whose properties vary depending on origin and effectiveness. While there are many mycotoxin adsorbing products on the market that claim to contain bentonite and also claim to have EU authorization, not all of these claims are supported by the facts. Confusion can arise because the EU authorization is non-holder specific, meaning that in theory any bentonite meeting the testing requirements has authorization. Yet, differences among bentonites mean that it may be difficult to identify the most effective one that delivers real results in the field.

### Identifying the best binder

Our researchers spent considerable time

developing a methodology to identify the most effective components to bind aflatoxins. These considerations include a high smectite content ( $\geq 70\%$ ) and at least 90% binding capacity of high levels of aflatoxin (4 mg/l or 4000 ppb) at a low dosage (0.02% feed additive). These requirements provide the clearest way to observe aflatoxin-binding effectiveness in vitro and were adopted by the European Union Reference Laboratory (EURL), forming the main criteria in Regulation (EU) No 1060/2013.

### Binders have varying effectiveness

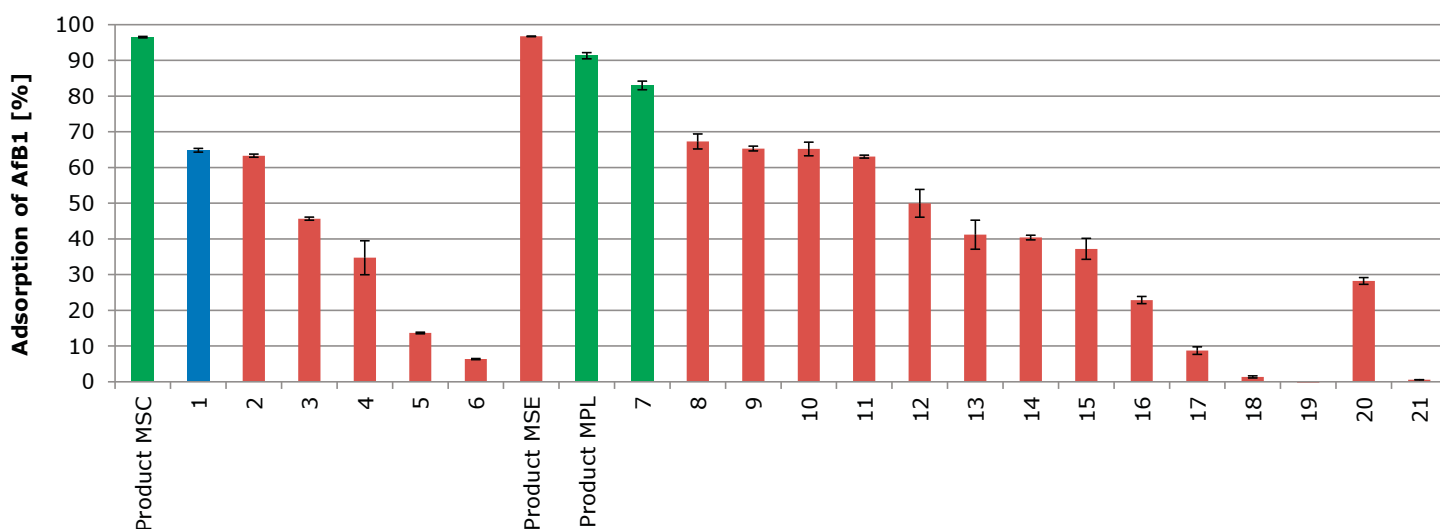
Many of the most common products making aflatoxin-binding claims, including inorganic, organic and mixed binders, were tested using the EURL method for effectiveness. As Figure 3 (below) demonstrates, the majority of the tested products do not achieve the 90% aflatoxin adsorption required to claim EU authorization.

Given the discrepancy between claims and actual effectiveness of many binders, buyers would be well advised to carefully scrutinize product claims and check that testing conditions match the EURL method. There is a real risk that in the face of an aflatoxin challenge, over-hyped products could have poor efficacy in animals or bind to nutrients in feedstuffs, negatively impacting animal performance.

### Conclusion

The risks that mycotoxins pose to animals are well-known and represent significant economic losses to producers. Biomarkers and strict EURL-type testing requirements can demonstrate the in vivo and in vitro effectiveness of binders. An innovative feed additive combating against mycotoxins is crucial to protect animals.

### EURL Method: Adsorption of 4000 ppb AfB1 with 0.02% product at pH 5.0



**Figure 3:** Adsorption of aflatoxins by different products from the market via the method published by European Union Reference Laboratory. Product MSC: BIOMIN bentonite, Product MSE and Product MPL: BIOMIN mixed products. Products 1 – 6: Inorganic binders, products 7 – 19: Mixed products, products 20 – 21: Organic binders

# Unique combination, matchlessly broad spectrum, your choice:

## Anta®Ox Aqua, excellent by nature

By Monika Korzekwa, Dr. Eckel GmbH, m.korzekwa@dr-eckel.de

Anta®Ox Aqua is a unique plant-based feed additive. It contains a carefully composed combination of valuable flavonoids, developed to face the challenges in modern aquaculture – in a natural way. Extensive research has impressively documented the effectiveness in different species: in the laboratory and in the field: in tanks and in huge ponds. The application of this innovative formula in aquaculture and especially in shrimp farming is new, and absolutely promising.

To date, one of the biggest challenges in the aquaculture production is the early mortality syndrome (EMS) in shrimps which is feared by shrimp farmers throughout the world. This disease causes devastating production losses of up to 42% in the affected countries (particularly in China, Vietnam, Malaysia, Thailand and Mexico). EMS is an infectious disease caused by the bacterium *Vibrio parahaemolyticus*. EMS experts know that classical approaches like antibiotics and chemical disinfection alone are no solution to this problem. Shrimp

**Table 1:** The number of bacteria (105 CFU/g) in the hepatopancreas of Pacific white shrimp after feeding with different diets for 60 days.

Experimental group	Number of bacteria count	Vibrio spp. count	V. parahaemolyticus count
Control	122.31 ±71.3b	11.58 ±11.2b	6.81 ±6.8b
Anta®Ox Aqua	13.65 ±87.1a	1.48 ±1.4a	0.67 ±1.6a

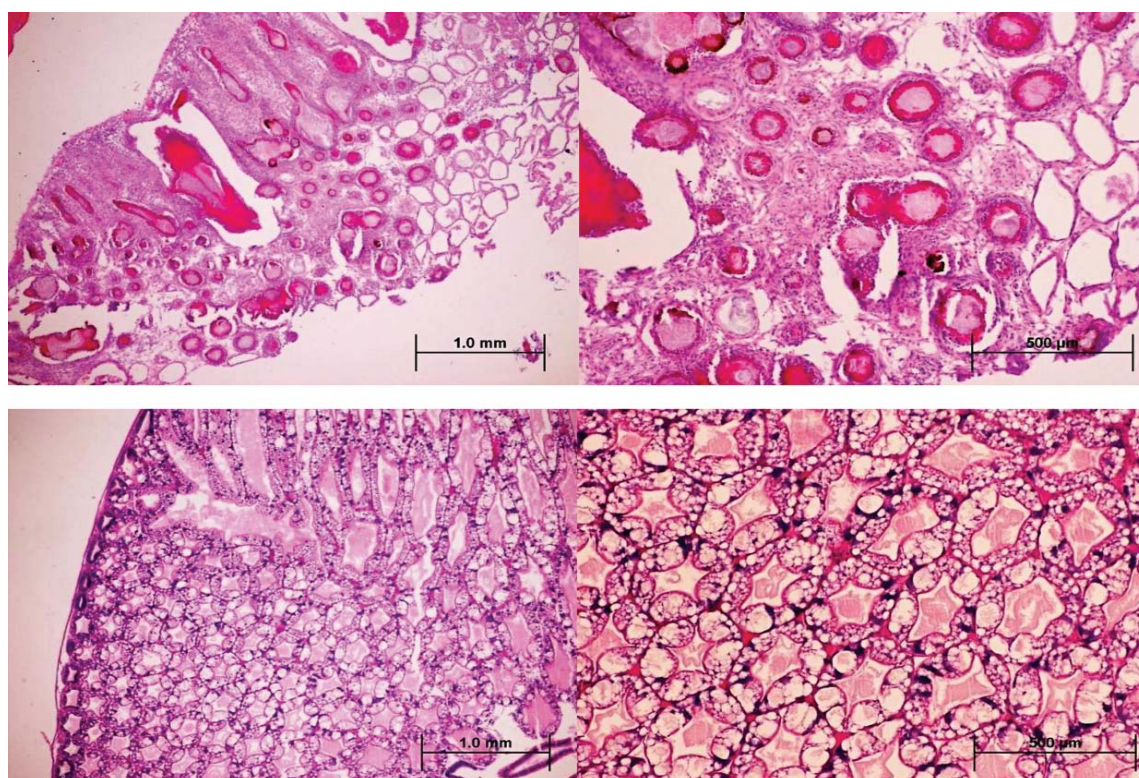
The data are presented as the mean ± standard deviation. Means in the same column with different superscripts are significantly different from each other ( $p < 0.05$ ).

farmers throughout the world are waiting for a breakthrough in combating EMS and maintaining the profitability of shrimp production.

### Economic boost for shrimp production by Anta®Ox Aqua

With Anta®Ox Aqua (product group health), Dr. Eckel provides a product that is capable to directly decrease the bacterial infection and highly increase the survival rate in shrimp suffering from EMS: *in vivo* under farm conditions. Trials conducted in cooperation with the renowned Kasetsart University in Thailand showed excellent results under laboratory conditions

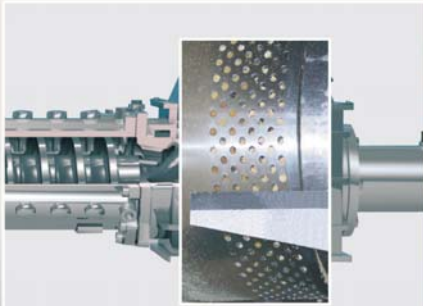
(challenge trial with *Vibrio* spp.) as well as in large pond trials under farm conditions. Not only traditional parameters like growth and feed conversion ratio (1.35:1 vs. 1.55:1 in the control group) of Pacific White Shrimp were positively affected by feeding Anta®Ox Aqua. Using modern laboratory techniques like Real-time PCR and histomorphological studies, a direct influence of the active ingredients of Anta®Ox Aqua at the cellular level (Gessner et al. 2012, 2013; Fiesel et al. 2014; Niyamosatha et al. 2015) was measured. In subsequent laboratory analysis significant reduction of bacterial loads were detected (Table 1, above): Total



**Figure 1 (left):** Hepatopancreas of control shrimps (top left: 50x; top right: 100x) showed sign of atrophy and bacterial infection, while those of Anta®Ox Aqua (bottom left: 50x; bottom right: 100x) appeared normal.



# Complete Feed Mills, Plants and Machines



## KAHL Crown Expander

Flexible production of shaped products. Preconditioning of pellet mixtures.



## KAHL Vacuum Coater

Without moving mixing tools, extremely gentle coating, very good cleaning



## KAHL Crushing Roller Mill

Economic crushing of feed mixtures, cereals, legumes and Oilseeds

Please visit us at:  
**Victam Asia**  
Bangkok, Stand B 099



AMANDUS KAHL GmbH & Co. KG · Dieselstrasse 5-9 · D-21465 Reinbek / Hamburg · Phone: +49 40 727 71 0  
info@akahl.de · [www.akahl.de](http://www.akahl.de)

bacterial load -90%, total *Vibrio* counts - 87% and *Vibrio parahaemolyticus* counts - 90% lower compared to control group. EMS is known to cause necrotic cells in the hepatopancreas of shrimp. Due to the reduced pathogen load with Anta®Ox Aqua, the hepatopancreas of the shrimps showed no signs of atrophy and bacterial infection and appeared to be healthy and normal. In contrast, in samples of the control group without Anta®Ox Aqua 20-80% hepatopancreatic cells were damaged. Furthermore, the lower bacterial infection in Anta®Ox Aqua-fed shrimps accounted for better survival rate (91% vs. 63% in the control group), which in turn, increased total biomass production in the Anta®Ox Aqua group. In addition to the higher financial return, a lower mortality generates less waste in terms of animals and feed and enables farmers to plan annual production volumes more reliably.

### The mode of action of Anta®Ox Aqua

Inflammation is a reaction to damage of animal tissues (whether visible or invisible) caused by various stimuli. Those stimuli can be physical (e.g. injuries, heat and radiation) chemical (e.g. acids and toxins) and biological (e.g. bacteria, fungi and viruses). Numerous of these factors can be found in aquaculture production, which means that

undetected inflammation is likely to be present almost continuously. The inflammatory process is controlled and activated by the transcription factor "Nuclear Factor kappa B" (NF-κB). After stimulation by various inducers, NF-κB activates the expression of genes encoding pro-inflammatory proteins or enzymes involved in the inflammatory process. The inflammatory mediators contribute to the disruption of epithelial barriers and activate other immune cells which enhance the inflammation of the digestive system. Inflammation in the digestive system and adjacent organs costs energy, reduces growth performance and impairs feed utilization of aquaculture species.

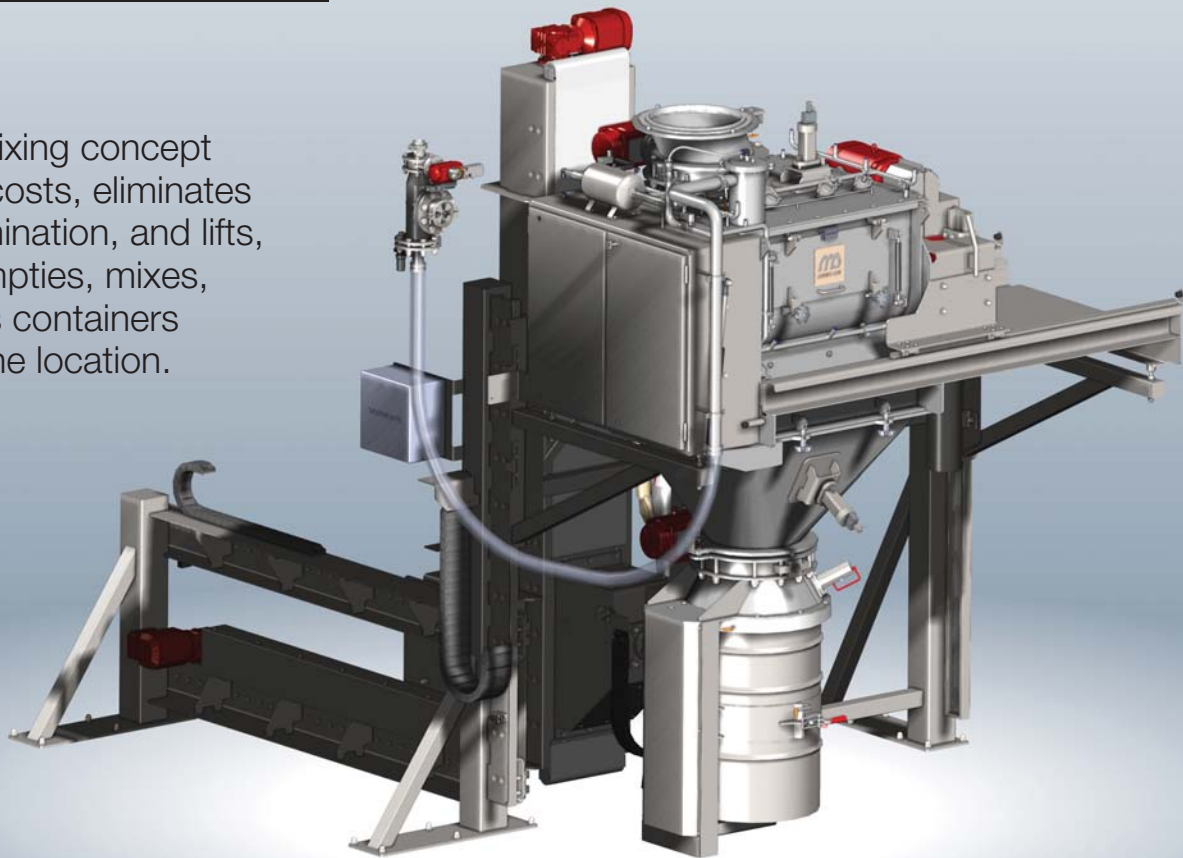
The active ingredients in Anta®Ox Aqua act as natural antiphenologistics *in vivo* by down-regulation the activation of the NF-κB factor and inhibition of the formation of pro-inflammatory proteins. This reduces negative consequences of inflammation like fever, cell death and tissue damage (Gessner et al., 2012, 2013; Fiesel et al., 2014). Indeed, less necrotic cells were found in the hepatopancreas of shrimp when fed with Anta®Ox Aqua, indicating less inflammation in the digestive system. From classic antibiotic growth promoters (AGPs) is known that their anti-inflammatory activity is responsible for their growth-promoting effect (Niewold 2007).

Therefore, we assume that the growth enhancing effects of Anta®Ox Aqua are the result of the anti-inflammatory property of Anta®Ox Aqua. Not only growth but also feed conversion ratio was improved, indicating that the less energy from feed had to be used for inflammation processes.

### What is the advantage of Anta®Ox Aqua over existing products?

Anta®Ox Aqua proved its effectiveness in numerous international feeding trials and under commercial farm conditions *in vivo* – demonstrating a breakthrough for the profitability of shrimp farms throughout the world. Compared with other feed additives for aquaculture feed, Anta®Ox Aqua offers a number of advantages. Anta®Ox Aqua is cost-effective even under very competitive market conditions in South-East Asia and Latin America. It is highly concentrated and works at low dosages – leaving enough space in the feed formula for maximum energy and nutrient density. Anta®Ox Aqua perfectly complements other efforts at farm level to keep fish and shrimp healthy. It does not interfere with medications and water treatments. Anta®Ox Aqua offers a natural solution meeting exactly the demand for a healthy and efficient fish and shrimp production – perfectly in line with today's consumer perceptions in regard to food safety and animal welfare.

New mixing concept saves costs, eliminates contamination, and lifts, tilts, empties, mixes, and fills containers from one location.



# Dinnissen launches All-in-One Mixing concept

Dinnissen's new compact and advanced All-in-One Mixing concept lifts, tilts, empties, mixes, and fills containers from one location. In order to design a new mixing concept that is as lean as possible, Dinnissen focused on reducing and simplifying the number of steps as much as possible and optimizing the end product. The All-in-One Mixing concept is especially suited for situations in which it is important to prevent contamination and to quickly and easily switch between recipes.

## **Complete mixing concept includes functionality for emptying and filling containers**

The All-in-One Mixing concept is a completely integrated solution for mixing powders, particles, and granulates, including the ability to empty and fill drums and other containers. The concept eliminates the need for transport systems and intermediate storage and focuses on simplicity, labour savings, and the elimination of contamination.

In this new concept, the process operator places a drum or other container with all the necessary ingredients in a special lift. The lift raises the drum and is then hermetically linked to the overall system within a particle-free environment. The drum then tilts automatically and is

connected to the mixer, after which a special clean-air system completely empties it into the double-shaft Dinnissen Pegasus® Mixer, without leaving any residues behind. There, the ingredients are gently suspended and mixed extremely quickly and thoroughly. The unique fluidized zone that is created during the suspension process makes the multifunctional processing unit suitable for mixing a wide variety of ingredients very homogeneously, carefully, quickly, and energy-efficiently.

After the mixing process, the container that was originally fed into the system and has been emptied, without leaving any residue behind, is automatically filled with the end product. To make this possible, Dinnissen designed a lift that can tilt as well as lift objects and that can automatically change its location in a linear fashion. As the Pegasus mixer itself can also be lifted, it becomes possible to fill the container that was originally fed into the system and has in the meantime been emptied with the end product at the end of the production process.

This new concept makes it possible to simplify and reduce the number of activities to which the input ingredients are subjected and eliminates the need for interim storage between processing steps. This innovative and sophisticated solution

minimizes the cost of cleaning, handling and storage and eliminates the risk of contamination.

## **Optimum end product quality**

The All-in-One Mixing solution can also be fitted with a mechanism that lowers the Pegasus® Mixer while the input drum is lifted upwards. This makes it possible to resolve any potential height issues. The new mixing concept can also be combined with atmospheric mixing in order to eliminate the risk of dust explosions.

Finally, the new concept is also compatible with the Slide Pegasus® Mixer, which makes it possible to easily and quickly slide the mixer sideways over guide rails so that the input and output components of the mixer can easily be accessed for optimum hygienic cleaning. Dinnissen's All-in-One Mixing concept has a very compact design, which means that it takes up very little space and can be integrated much more easily into new as well as existing production processes. The input of ingredients into the system in drums also minimizes any potential breakage or damage to powders, particles and granulates, thereby further optimizing the quality of the end product.

For more information about All-in-One Mixing, go to [www.dinnissen.nl](http://www.dinnissen.nl).



# The Gentle Vacuum Coater GVC 1000 – Robust Pellets All the Way

Vacuum coating or vacuum infusion processes are widely known in the fish feed industry as well as in the petfood industry – and they become more and more popular also in the poultry and pig feed industries since they enable the feed manufacturer to produce high-fat feed of an outstanding quality.

With these processes liquids can be introduced in a feed crumble (extrudate, expandate, pellet, etc.) or petfood kibble in a way that they are protected against degradation by the surrounding environment.

Amandus Kahl has now designed together with the Centre for Feed Technology, Norwegian University of Life Sciences a complete new type of vacuum coater to overcome the known obstacles of the already existing vacuum coaters in the market. A 1,000-litre version of this new “Gentle Vacuum Coater” will be presented for the first time at the Victam Exhibition.

Abrasion of the product inside the traditional coaters and mechanical impact due to the fast rotating mixing elements result in an increased amount of fines. Additionally, the mechanical impact promotes micro cracks, which act as weak spots. In consequence, these weak spots promote breakage of the feed while the

product undergoes handling procedures after the coating process. In case of aqua-feed, where breakage can also occur in the long feeding hoses before spreading the pellets into the cages, the micro cracks can result in an observable amount of additional fines.

The new “Gentle Vacuum Coater” is designed as a rotary drum mixer with no moving parts inside the mixing chamber. Tests showed a significantly decreased amount of fines in comparison with twin shaft mixers. Also the amount of micro cracks inside the feed was significantly lower. Hence the overall product quality was improved significantly. The double positive effect of the “Gentle Vacuum Coater”; reduced fines on site, and reduced possibility of breakage after the pellets have left the feed plant, also has an environmentally positive impact, in addition to the obvious economical one for the feed company. Less fines means less feed

reprocessing and reduced energy consumption. Less breakage after the feed has left the plant ensures that the loss of feed is minimized.

Furthermore, a disadvantage of the existing twin shaft vacuum coaters is the fairly poor cleanability due to the limited accessibility inside these types of mixers. The new “Gentle Vacuum Coater” allows complete accessibility to all parts for reliable and fast cleaning when required, which is a big step ahead, compared with the conventional twin shaft vacuum coaters.

To sum up, the new “Gentle Vacuum Coaters” design allows reduced feed waste, both in the feed plant, and during handling later in the process, which in general will increase customer satisfaction for the feed. Reduced feed loss, also equals reduced environmental impact. In addition the improved ease of maintenance and cleaning reduces operational costs for the feed producers.





# Your global partner



**FEED**

**GRAIN**

**STORAGE**

**HANDLING**



**FEED**

**NUTRITION**

**PRODUCTION**

**FISH FARMING**



**INTERNATIONAL  
AQUA  
FEED**

Organisers of

**grapoas  
CONFERENCE  
ASIA 2016**

Perendale  
Publishers Ltd

[www.perendale.com](http://www.perendale.com)



# CPM ASIA introduces new add-ons to Pellet Mill

California Pellet Mill (since 1883), is a world-renowned pelleting specialist, equipped with a wide range of machinery for crushing, grinding, densifying, cooling, drying, sifting, computerize process controls, ingredient scaling systems and extrusion.

CPM combination of technology and knowledge has enhanced customers' experience and differentiate us from competition.

CPM has been constantly introducing new development over the years, we are thrilled to introduce tools and technology on our pellet mill and showcase our products in the Victam Asia 2016. Our innovative development such as Wired Shear Pin, Remote Knife Adjustment, Automatic Remote Roll Speed measurement and electronic oil indicator allows our customers to enhance their productivity as well as having a safe working environment. Talk to our CPM specialist to find out more information.

## Wired Shear Pin

The main shaft of the pellet mill is fitted with a shear pin device to avoid overload and as a consequent damage to the main shaft, rollers and/or die. Wired Shear Pin is developed to replace the current 'shear pin system with breakaway plug', to increase the reliability of the signal transmission.

## Remote Knife Adjustment

Desired length of pellet is dependent on the knife adjustment. Manual knife adjustment relies on operator skills to set the correct position for determined Development of Remote Knife Adjust, allows precise adjustment of the knife positioning which determine the pellet length.

## Lineator integrated with Automatic Remote Roll Speed Measurement

CPM Lineator makes it possible to adjust the rollers towards and away the dies without having to stop the pellet mill, and open the pellet chamber. This way, the Lineator makes it possible to start and stop a pellet mill in an efficient way. The accurate positioning of the rollers during the production process provides the pellet mill operator with the means to manipulate the pellet quality as required. By integrating Automatic Remote Roll Speed Measurement (RSM) to Lineator, it allows rolls adjustment automatically base on the roll speed to make changes before choke



occur and achieve precise roll gap control for maximum pellet quality throughput, minimum energy consumption and component wear.

## More information

To learn more about our new development please visit us at **booth B031** or contact CPM or email, [info@cpmasia.com](mailto:info@cpmasia.com), or visit the website at [www.CPM.net](http://www.CPM.net).



# Dinnissen introduces upgraded Easy to Clean Sampling system for the high-end food and pharma sectors

The ever stricter hygiene standards that apply to the production of high-end foodstuffs and pharmaceutical products are driving an increasing demand for sampling systems that can be cleaned quickly and effectively and are contamination-free.

Dinnissen has therefore worked together with its clients to develop an upgraded version of its automatic sampling system that can be cleaned more quickly and effectively and that further minimizes the risk of external contamination.

## Ultra hygienic as a result of removable interior and sensor adapter

Companies that operate in the high-end foodstuffs and pharma sectors have to comply with increasingly stringent requirements in the area of food or drug safety and quality. It's essential for them to take microbiological or physical samples of their products immediately after the mixing process or immediately before the packaging process, and they must be able to do so consistently and accurately while at the same time eliminating even the smallest risk of external contamination.

Like its predecessor, Dinnissen's new sampling system automatically takes samples in accordance with the frequency, volume, and weight specified by the user. The samples are collected in a sample bag or beaker. In cooperation with Dinnissen's clients, the new Easy-to-Clean sampling system has been significantly improved in the area of hygiene and contamination prevention. The interior of the new system is made from a single smooth piece of plastic without any contamination-susceptible edges, seams, or ridges. The

new plastic interior is also special in that it can be detected as a metal and will also come in a blue colour not commonly associated with food products so that undesired contaminants can be more easily and quickly identified. The interior of the new Easy-to-Clean sampling system can also be removed from and put back into the system without any external contact, thereby completely eliminating the risk of sample contamination. The sensors for automating the sampling process are integrated into a removable plastic adapter. The adapter together with the sensors can be removed with a simple hand motion, making it possible to clean the system even more quickly and effectively.

## Improved functionality due to simplified design

The new sampling system from Dinnissen Process Technology was designed in

accordance with EHEDG and ATEX guidelines and has a capacity of 25 g to 1000 g per sample. The system is suitable for use in an ambient air environment as well as in a controlled atmosphere and can be integrated into new as well as existing production processes, for example a fall pipe or bunker.

Although the new Easy-to-Clean Sampling system offers increased benefits and functionality, the design has actually been simplified, making it an excellent example of the benefits of a multidisciplinary approach and also clearly recognizable as a Dinnissen innovation.

## More information

More information about the Easy to Clean Sampling system for the high-end food and pharma sectors is available by calling **0031 (0)77 467 35 55** or visiting our website at **[www.dinnissen.nl](http://www.dinnissen.nl)**.





# WORLD-GRAIN.com

VISIT THE WEBSITE FOR THE MOST UP-TO-DATE NEWS ON THE  
GLOBAL DAY-TO-DAY GRAIN & GRAIN PROCESSING INDUSTRIES



**DYNAMIC**  
website

**DIGITAL**  
edition

**DAILY/Weekly**  
e-newsletter

World Grain gathers information from around the global grain, flour and feed industries and provides its readers with the information they need to stay informed and do their jobs.

Visit [www.world-grain.com](http://www.world-grain.com) to sign up for our digital edition and daily e-newsletter.

# Real-time in-line feed formula adjustment during batching

Moisture loss and gain is a natural phenomenon for the aqua and livestock feed industry that requires better understanding in order to manage the problem.

Knowledge of the moisture content is essential for calculating nutrient density as well as the impact on operational throughput, feed quality and profitability. Variations in moisture will impact the energy, protein, minerals, and vitamins in the diet resulting in either an under or over supply of these key nutrients. Correct moisture concentrations in diets are necessary for optimum intake and performance of animals. In many cases low moisture results in nutrient giveaway because the dry matter of the resulting mix is higher than the theoretical calculation due to losses in moisture during processing.

### Moisture shrink and the true cost of grains

Changing the moisture content of grain changes its weight but not its dry matter content as a volume. When raw materials or feeds lose moisture (moisture shrink) the weight loss is not directly proportional. The moisture shrink can be calculated using the following equation;

initial  
moisture  
content (%)

–

final  
moisture  
content (%)

Moisture Shrink (%) =  $\frac{\text{initial moisture content (\%)} - \text{final moisture content (\%)}}{100 - \text{final moisture content (\%)}} \times 100$

When corn for example reduces from 14% to 11% moisture the weight loss is 3.37 kg not 3kg. Therefore for every tonne of corn received at 14% there would be an inventory of 966.3kg after the moisture is reduced to 11%. This has implications for the true cost of the corn because if the corn was purchased at a cost of \$310 per tonne at 14% by the time the corn is used for batching its true cost is \$321 per tonne.

### Nutrient giveaway during batching

Fundamental to all feed formulations is a precise knowledge of the feeding value of the raw materials used to ensure best cost and consistency of animal performance. Nutritional quality requires formulating on a standard dry matter basis and therefore each formulator will use a matrix value for the moisture of each ingredient on which the nutrient density of the feed will be determined. It has been observed earlier

Table 1: Example of Nutrient Giveaway in a 5 tonne batch of broiler feed

Ingredient	% Moisture	% Inclusion	Kg required	Energy Provided kcals/kg	Nutrient Giveaway per batch
Corn Formulated (3,310 kcals/kg)	14%	50%	2,500	8,275	-
Corn Batch Actual (3426 kcals/kg)	11%	50%	2,500	8,565	145 kcals/kg

Reference: "M007 In-Line Feed Reformulation; Facts and Figures" (2015), Agentis Innovations

that the moisture level of stored grains will be lower than the moisture level of the incoming grains. Additionally, another factor to consider is the natural or intended variation of moisture within the same batch of grain. However, one of the most significant losses that occurs during the production phase and that is mostly unaccounted for, is the moisture lost during grinding and before the grains are prepared for batching.

Formulators often issue formulations on a fortnight or monthly basis. Whilst this may be acceptable in terms of the nutritional variation of the raw materials, it is clearly not appropriate in terms of moisture content. As a result of work carried out by Agentis Innovations it has been demonstrated that there is a significant variation in moisture of key ingredients during batching (see table 1, above).

Nutrient giveaway will occur any time the dry matter level of a specific raw material such as corn is higher than the level of dry matter determined by the formulator. The resulting batch that goes to the mixer will be higher in nutrient density and dry matter than formulated and a resulting stock loss will occur. The key issue therefore is how the industry can respond in real time to maintain the correct dry matter of the batching mix and prevent nutrient giveaway.

### Real time in-line moisture measurement

Agentis Innovations have worked on this problem in conjunction with a leading Thai poultry integrator and developed an In-Line technology that can not only generate

moisture data in real time but can also capture and process the data to produce automated process control systems that have the ability to make real time changes within the feed production process.

Traditional laboratory methods and sampling techniques including Near Infrared spectroscopy cannot be applied for this task because they are not sufficiently fast or accurate enough for in-line moisture measurement, analysis and process controls.

The technology that Agentis Innovations have developed to address this problem is known as the M007 microwave resonator technology which is both highly accurate and has the ability to process thousands of measurements and data points per second. This makes it particularly well suited for measurements of fast flowing ingredients or feeds of varying density, particle size or material depth. The M007 technology has been developed specifically for the feed industry using Agentis Innovations comprehensive instrument calibration and feed processing knowledge combined with their in-house SCADA expertise.

### Real time in-line batching reformulation

The technology Agentis Innovations has developed measures in real time the moisture of the raw material during batching and auto corrects the batching weight to the true dry matter of the specific raw material being measured. The SCADA system identifies each formulation and original dry matter target for the specified raw material. The auto weight correction



for moisture is completed without any delay to the batching process and batch reports are generated to provide for verification, traceability and stock reconciliation purposes.

For the first time feed companies are able to not only accurately control the true dry matter entering the mixer but also make significant cost savings through real time control of the stock variance associated with moisture loss and nutrient giveaway.

#### Commercial field study results

Outlined in table 2, right, are the results from a very recent extensive commercial field study that comprised a 50 tonne production run (10 by 5 tonne batches of feed) with a 50% formulated corn inclusion level (2,256.5 kilograms of corn per batch) at 12% moisture. Corn was costed at \$310 per tonne which equates to \$699.52 per five tonne batch. The total weight sparing was 178.4kg of corn which represented a saving of \$55 USD for the total run of 50 tonnes.

The savings associated with this new technology are significant and can represent a return on investment in less than 3 months. This completely new and innovative technology will be on

**Table 2: Real-Time In-Line Batching Reformulation**

Batch Number	M007 Actual Moisture %	M007 Reformulated Corn (kg/batch)	Corn Cost /Batch USD	Saving /Batch USD
Batch No. 1	11.22%	2,236.60	\$693.34	\$6.18
Batch No. 2	11.22%	2,236.70	\$693.39	\$6.13
Batch No. 3	11.12%	2,235.00	\$692.86	\$6.66
Batch No. 4	11.03%	2,231.20	\$691.68	\$7.84
Batch No. 5	10.84%	2,227.00	\$690.38	\$9.14
Batch No. 6	11.36%	2,240.20	\$694.46	\$5.06
Batch No. 7	11.48%	2,243.30	\$695.44	\$4.08
Batch No. 8	11.54%	2,244.80	\$695.90	\$3.62
Batch No. 9	11.59%	2,246.00	\$696.27	\$3.25
Batch No. 10	11.57%	2,245.60	\$696.12	\$3.40

Reference: Agentis Innovations (2015) "Impact of In-Line Batch Reformulation on cost of feed"

demonstration at our booth A009 during Victam 2016 Bangkok Thailand.

#### Summary

In summary the unique and revolutionary M007 In-Line Batching Reformulation system provides the feed industry with a new innovative Feed Processing solution that allows for real time moisture measurement, data capture and

processing that allows for automated process control of moisture during batching that delivers profitability, feed quality, stock control and process efficiency.

#### More information

For more details please visit our website [www.agentisinnovations.com](http://www.agentisinnovations.com) or contact Agentis Innovations at [enquiry@agentisinnovations.com](mailto:enquiry@agentisinnovations.com)

GLOBAL MILLING  
CONFERENCE



with

grapas  
CONFERENCE  
ASIA 2016

A unique opportunity to hear the latest from  
industry experts on rice, flour, cereals and oilseed processing

**MARCH 30, 2016**

GRAPAS, FIAAP & VICTAM AT THE BITEC BANGKOK, THAILAND

For more information and to register visit:

**bit.ly/grapas**

REGISTER!



Organised by



Registration for the conference - €130  
Registration will open  
on November 1, 2015 at: [bit.ly/grapas](http://bit.ly/grapas)

# Far Eastern Agriculture

Asia's only broad based agribusiness magazine

- Animal Feeds • Poultry
- Livestock • Aquaculture
- Crops • Machinery & Equipment
- Processing
- Exhibition Calendar & Market News



**FarEasternAgriculture.com**  
**Website-Monthly Statistics**  
 600,341 Page Impressions  
 42,551 Unique Visitors

**ABC audited Circulation figures**  
 Audited average circulation  
 Jan 13 to Dec 13 ; 6,194

## E-newsletters

Average Circulation: 8000+  
 The Far Eastern Agriculture monthly e-newsletter can deliver your marketing message directly into decision-makers' inboxes

The magazine that offers you market news and up to date information on new products and innovations; everything from broiler breeding technology to second hand machinery. All this in addition to practical articles which will help you make the most of your business.

For more information  
 please visit [www.fareasternagriculture.com](http://www.fareasternagriculture.com)



ABC audited circulation  
 guarantees your advertisement  
 will be seen throughout Far East

**Alain Charles**  
 Publishing  
*Serving the world of business*

<b>MENA</b>	Tel: +971 4 448 9260
<b>ASIA</b>	Tel: +91 80 6533 3362
<b>USA</b>	Tel: +1 203 226 2882
<b>EUROPE</b>	Tel: +44 20 7834 7676

**e-mail:** [post@alaincharles.com](mailto:post@alaincharles.com)  
**web:** [www.alaincharles.com](http://www.alaincharles.com)



Dinnissen Process Technology is specialized in systems for filling Big Bags, Drums, Tote Bins and Octabins with powders, particles, and granulates for the food, feed, pharma, and chemicals sectors.

# Dinnissen introduces Combi Filling Station for filling client-specific packaging quickly, efficiently, and dust-free

As its clients increasingly desired to package their products in their own specific packaging, Dinnissen developed a completely new Combi Filling Station with a filler head that can be easily and quickly exchanged for another. With a single investment, a company can now fill a wide range of packages with a variety of products. The new filling station has a compact and dust-tight design and is being introduced by Dinnissen at the Easy Fairs Solids in Rotterdam and the Schüttgut fair in Dortmund.

## Filling a variety of packages by making only a single investment

Client focus starts with meeting the specific requirements and wishes of each client. Dinnissen's new Combi Filling Station accomplishes this by enabling

clients, via only a single investment, to fill a wide range of packaging options including Big Bags, Drums, Tote Bins and Octabins. The brand-new filling station is therefore flexible and saves space as well as costs.

Dinnissen developed an innovative filling head with an inflatable filling seal that can easily be replaced in order to make it possible to fill a wide range of packages in a single filling station. The innovative head forms a dust-tight seal between each package and the filling station. Once the appropriate filling head has been installed, a pallet with one or more packaging units is placed on the special scissor lift revolving table. The scissor lift then automatically moves upwards and positions the packaging unit precisely in line with the filling head. If a pallet with several drums has been placed on the

revolving table, the table with its specially developed suction disc positions the drums, one for one, to connect to the filling head. If the user wishes to switch to a different type of packaging unit, the special vibrating mechanism in the fall pipe first comes into action. It vibrates the fall pipe and the replaceable filling head to thoroughly clean them and prevent any emission of fine particles, after which the filling head can quickly and easily be removed and a new one installed.

## Combi Filling Station can be customized for various target markets

The new Combi Filling Station is available in various options to serve the needs of different markets and end users. For example, Dinnissen's new filling station is available in an extra robust version that can withstand the most intensive use under very extreme conditions. It is also suitable for dust-tight operation when filling chemicals and toxic products etc. that are subject to the European REACH guidelines. The installation can be integrated into existing production processes or used as a stand-alone filling station. It can also be fitted with Dinnissen's Easy-to-Clean Feeder Valve with a very broad capacity range for the very precise dosing of products to the filling station or packaging unit.

The new filling station can be equipped with a single or triple gas-tight seal system for Big Bags. A weighing system for filling the packaging units very precisely is also an option. Finally, the filling station is available in a version for High Care zones in sectors such as the foodstuffs industry.

## More information

For more information about Dinnissen or its Big Bag filling solutions for clean rooms, please visit [www.dinnissen.nl](http://www.dinnissen.nl).



# Indigo™ – A new way to formulate

Format International is eagerly looking forward to presenting the latest iNDIGO™ software at VICTAM Asia in March 2016.

At the recent VICTAM exhibition in Cologne, Germany, Format customers both existing and new gave their enthusiastic response to the new system and the opportunities it offers.

Ian Mealey, Format's Head of Operations, says that Format is leading a modern approach to formulation software; one that acknowledges its central role in the business and critical value in the supply chain. Indigo™ is the result of a thorough design and consultation process and uses the very latest technologies and techniques.

## Indigo delivers:

- Efficient and accurate data maintenance tools.
- Ground-breaking optimisation capabilities, including new techniques.
- Unrivalled business intelligence and integration.

Format's management and support personnel all originate from the industries Format serves and are well placed to drive the development of a system that focuses on the needs of modern nutritionists and formulators, purchasers, and professionals concerned with supply chain optimisation and related supporting functions.

Delivering these objectives ensures the business is more responsive and can carry out more accurate and effective evaluation and planning, resulting in increased profitability.

## Modern user interface

The Indigo™ user interface is everything you would expect from modern software, but like no other system in its field. On-screen presentation of data is completely flexible, enabling the user to focus on precisely the information required, presented in exactly the way they prefer.

Powerful Find and Filter features allow information to be swiftly queried and brought to the workspace. Filters may be simple or complex queries and can even be stored for re-use later. All the functionality you need is immediately to hand via right-click menus or the toolbar. Data modifications are highlighted directly in the workspace for the attention of users, resulting in clear and understandable data management workflow.

Above all, the user interface is intuitive and very easy to absorb.

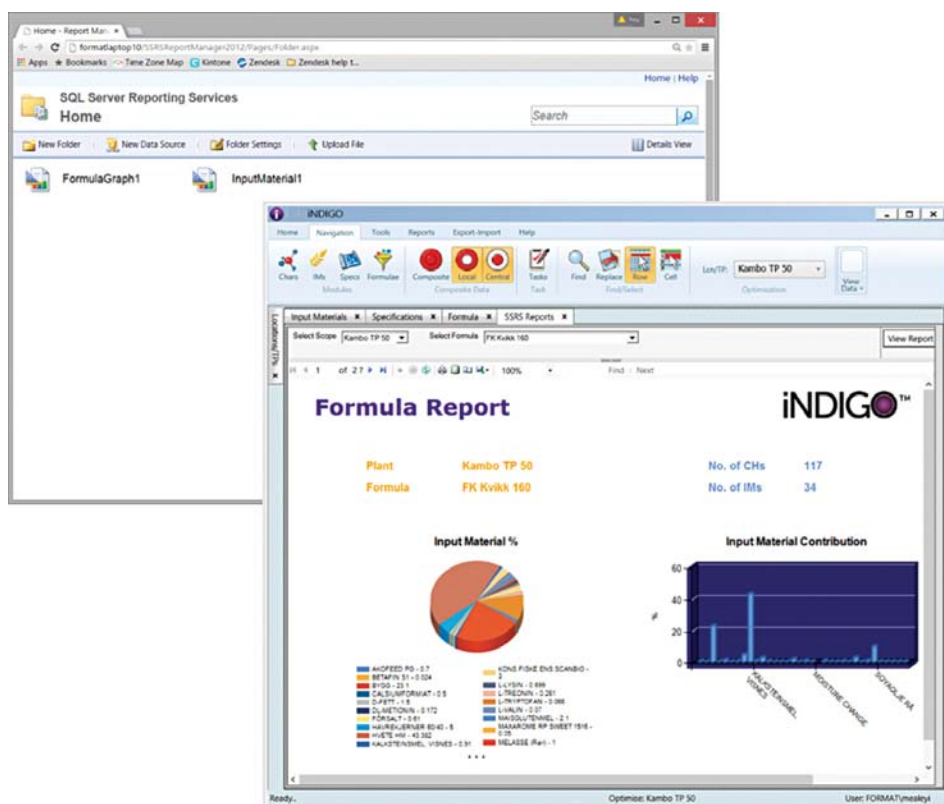
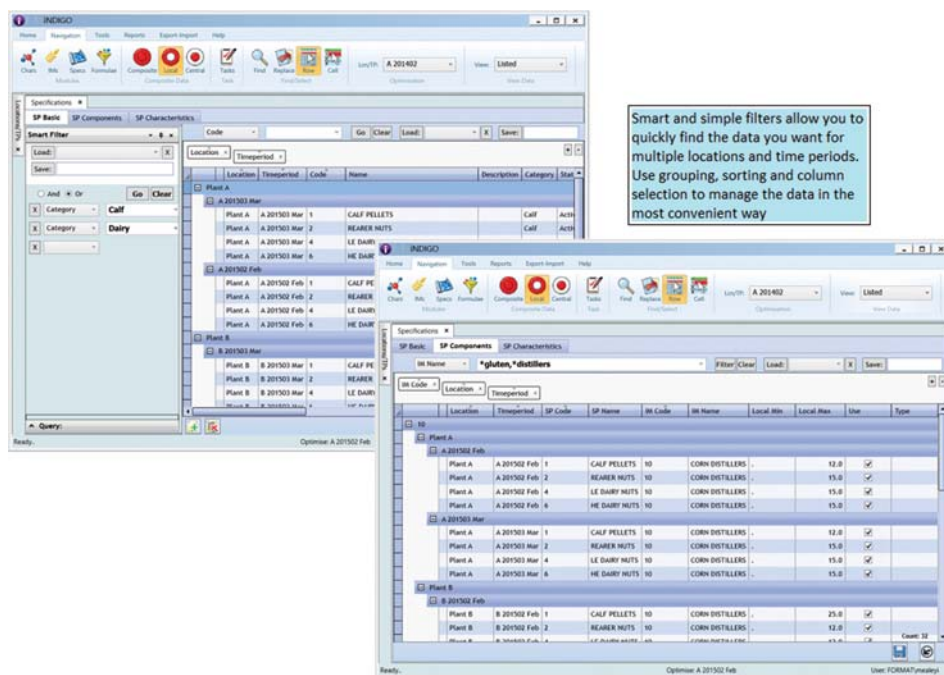
## A wealth of new features

Indigo™ was designed with the user's requirements at the centre, and a wealth of powerful features are included to give

***Pictured below:** Format team making final adjustments before the show opens in Cologne.*







real advantages, for example –

- In-built data hierarchy allows sharing of key ingredient nutritional and product specification constraint data across the organisation, with plant or time period overrides reflecting specific local needs.
- Store specific data at the time period level to increase flexibility and improve accuracy of forward planning.
- View and edit data for multiple locations and time periods at once.
- One-click optimisation for single and multiple product problems.
- Interactive optimisation with full

comparison with alternative and stored solutions.

- Multi-Mix® supports multiple instances to allow easy investigation of alternative scenarios.

All these features enable an efficient workflow, improved accuracy of evaluation, which translates to improved decision-making and, ultimately, to increased profitability.

### Business intelligence

The key role of formulation software in the centre of the business is not always fully

recognised. There are many participants in the business who are affected by the formulation process, or who have information that the formulation process requires. Format recognises that this area should be improved for users of formulation systems.

Hence Indigo™ has been designed with the capability to share data in the most comprehensive way, giving new opportunities for the business. Internal and external reporting tools offer great flexibility for users – you may design your own report in any tool that can connect to a SQL or ODBC data source. Indigo™ itself utilises SQL Server Reporting Services – reports designed with this tool can be published for internal use directly inside Indigo™ or externally via a reporting services website. It's now easy to meet the needs of the business. Sharing data through integrations can also exploit numerous methods from CSV imports and exports to direct access to the database using Views and Stored Procedures.

### Benefits for all

Indigo's design is focused on bringing benefits to all parts of the business, but most importantly, enabling users to increase profitability.

### Nutrition and Formulation

- Easy to use application ensures efficient and accurate data maintenance which gives more time to focus on optimisation.
- Data hierarchy offers convenient sharing and management of key data for ingredients and product specifications.
- Location and time period specific data offer increased accuracy and forward planning options.

### Purchasing and supply chain

- Improve the accuracy of forward evaluation exercises and planning decision by exploiting location and time period specific data and multi-instance optimisation tools.
- Greater visibility of optimisation results.
- Improved information sharing.

### Management

- Improved business intelligence and information sharing through flexible reporting.

### IT

- Variety of deployment options.
- Improved system maintenance options
- Modern, flexible integration choices.

Come and see us at VICTAM Asia and let us show you what we've done with iNDIGO™ and explore how it could help you.

### More information

Contact Format International at –

Web: [www.formatinternational.com](http://www.formatinternational.com)

Phone: +44 1483 726081

Email: [info@formatinternational.com](mailto:info@formatinternational.com)

# Dinnissen Process Technology's new DIMAX 200 bag emptier remains effective under extremely difficult conditions

Dinnissen Process Technology has developed a new Extra Robust bag emptier that continues to function effectively even under the most extreme and difficult conditions.

The bag emptier is a new version of Dinnissen's classic Dima 200 and was specially developed to handle bags of up to 75 kg of varying size and material. It also has an increased throughput capacity and is more versatile.

## Fully automatic bag emptier for use under very extreme conditions

Installations used for emptying bags often encounter problems if they are subjected to extreme loads for longer periods of time. As companies need to continue operating efficiently and without problems even under such conditions, Dinnissen has developed a new DIMAX 200 bag emptier that can continue to handle 75 kg bags of varying sizes and materials quickly and efficiently. All the components of the new DIMAX 200 that have to withstand extreme loads are built to extreme specifications, including the feed-in platform that can handle an increased throughput of even heavier bags.

The feed-in opening with a vertical clearance of 26 cm is also larger than in the classic version of the Dima 200, allowing for the problem-free input of extra-large bags. In the new model, the pivot point, arms, and pressure boosters have all been further upgraded and strengthened to ensure a better grip on the bags. The cylinders, dampers, drive mechanism, and bearings are also built to withstand heavier loads. As a result, the extra robust DIMAX 200 is much more powerful and can continue to operate problem-free and without any extra maintenance being required even under the most extreme and difficult conditions.



## Contamination-free design and optimum accessibility for maintenance

Dinnissen's new DIMAX 200 bag emptier also features improved access to the knife for cutting open the bags, so that the knives can be replaced more quickly and safely. The inside is finished with a special Viwateq® Finishing coating that is extremely smooth and easy to clean. In combination with Dinnissen's fully automated cleaning-in-place concept based on airflow and suction, this ensures that the DIMAX 200 can be cleaned easily and effectively and prevents contamination.

An ultrafine version of the bag emptier is also available especially for situations in which it is essential to prevent the release

of even the smallest quantity of particles during the emptying process. This version comes with a double filter with powerful suction and a special dust-tight seal for the air exhaust, thereby ensuring that the quantity of particles released is minimized to less than 0.1 mg per m<sup>3</sup> of material processed or less than one part per 10 billion.

## More information

Depending upon the specific situation, the new DIMAX 200 can handle between 1 and 200 bags per hour and is suitable for use within the feed, food, chemicals, and pharma sectors. More information is also available by calling **0031 (0)77 467 35 55** or via our website at **[www.dinnissen.nl](http://www.dinnissen.nl)**.



ANDRITZ is proud to introduce the new OptiMix paddle mixer to the market. The new mixer has shorter mixing time and the new patentable design features are unique for the market.

# ANDRITZ proudly introduces the new OptiMix paddle mixer

The OptiMix has a new improved design to improve its performance. It is three times faster than the old ANDRITZ mixer. Further, cables and other installations are hidden, making it easier to clean.

## Key features:

- Self cleaning: preventing cross contamination between batches
  - Ensures fast and efficient mixing
  - Has a unique design: easy to clean and maintain
  - Easy installation
  - Easy access to liquid systems
  - Double sealing of bottom damper
  - Has a mixing quality with a Probability (p) > 25% equivalent to a CV < 5%
- The ANDRITZ OptiMix is tested and

verified by TI (Technological Institute) and MTSE (Micro Tracer Services Europe) by using the toughest test method described.

We achieved a mixing probability of (p) > 25% within 75 seconds (Equivalent to CV < 5%).

## Focus on research and development

The new OptiMix paddle mixer is the result of dedication and hard work from our skilled R&D team. It is a key factor of our vision to keep providing the best quality machines to our customers that ensure easy production, cost efficiency and high-quality results.

ANDRITZ is committed to a substantial R&D efforts in order to lead the industry in



technological innovation. We are consistent in offering advanced products, so our customers will continue to see the benefits of buying our products.

## Mixing technology – An important step in the feed production process

### The primary steps in the feed pelleting processing are:

- Dosing/weighing
- Grinding
- Mixing
- Conditioning
- Expansion
- Pelleting
- Cooling
- Sifting
- Coating

Prior to the mixing process, the feed ingredients have been weighed and grinded and the vitamins and minerals have been added to the feed compound. The next step is then for all the ingredients to be mixed together.

### Mixing technology

Basically mixing (or homogenizing) means to transport the individual particles to an exact position in relation to other particles and thereby avoid segregation. It is very important to have all the ingredient mixed together properly to achieve a good feed pellet quality.

### Optimum mixing

Optimum mixing of the feed ingredients will ensure uniform distribution of nutrients, vitamins and minerals, which will result in a homogeneous nutrient content in each feed pellet. Further, it will ensure optimum growth of the animals.

### What is a good mixer?

There are many demands to the capabilities of a good mixer. Especially, speed and quality are two qualities customers prioritize. A good mixer should provide both fast and efficient mixing. Furthermore, it should be easy to clean and maintain.

### Mixer qualities and important principles

- Mixing is of enormous importance and it is very important it mixes all particle sizes equally precise
- Many feed formulas contain different enzymes opening phosphors or in some cases to cover the phosphors

- Failed mixing can result in slow growth of the animal
- Too many or too few minerals or medicines can result in ill animals or even worse
- A one-day old chicken consumes only 10g per day, but it still needs all planned ingredients to be in the feed for it to grow as planned
- Even a full-grown pig consumes 6000g per day and it is equally as important that the formula is mixed properly, so the pig gets exactly the ingredients planned for it to grow
- Mixing both formulas demands for high accuracy, as the chicken formula contains as many ingredients as the formula for the grown pigs
- Good mixing ensures planned growth of your animals
- It is very important that no, and absolutely no, products are carried (cross contamination) from one formula to the next
- A mixer needs regularly cleaning as a routine



#### Exhibition opening hours

Tuesday 29 March	10.00 – 18.00
Wednesday 30 March	10.00 – 18.00
Thursday 31 March	10.00 – 16.00

Please note visitor registration closes at 14.00 on Thursday 31 March

#### Free visitor entrance

To obtain your free exhibition visitor entrance badge visit [www.fiaap.com](http://www.fiaap.com) or [www.victam.com](http://www.victam.com) or [www.grapas.eu](http://www.grapas.eu) and select 'Visitor registration'. Complete the simple form and we will send you, by return email, a visitor confirmation.

This confirmation *must* be brought to the show and exchanged at the Visitor Pre-Registration desks for your free entrance badge. The badge is valid for all three days of the event and for each of the exhibitions.

To avoid disappointment arrange for visas early.



## Contact information

#### Head office

Victam International BV  
P.O. Box 197, 3860 AD Nijkerk,  
The Netherlands.  
T: +31 33 246 4404 F: +31 33 246 4706  
E: [expo@victam.com](mailto:expo@victam.com)

#### UK office

21 Fairlawn Drive,  
Redhill RH1 6JP,  
England.  
T: +44 (0)1737 763501  
E: [andrew.west733@ntlworld.com](mailto:andrew.west733@ntlworld.com)

#### Consultants

Please visit our websites for information on industry consultants in your area.

[www.fiaap.com](http://www.fiaap.com) [www.victam.com](http://www.victam.com)  
[www.grapas.eu](http://www.grapas.eu)

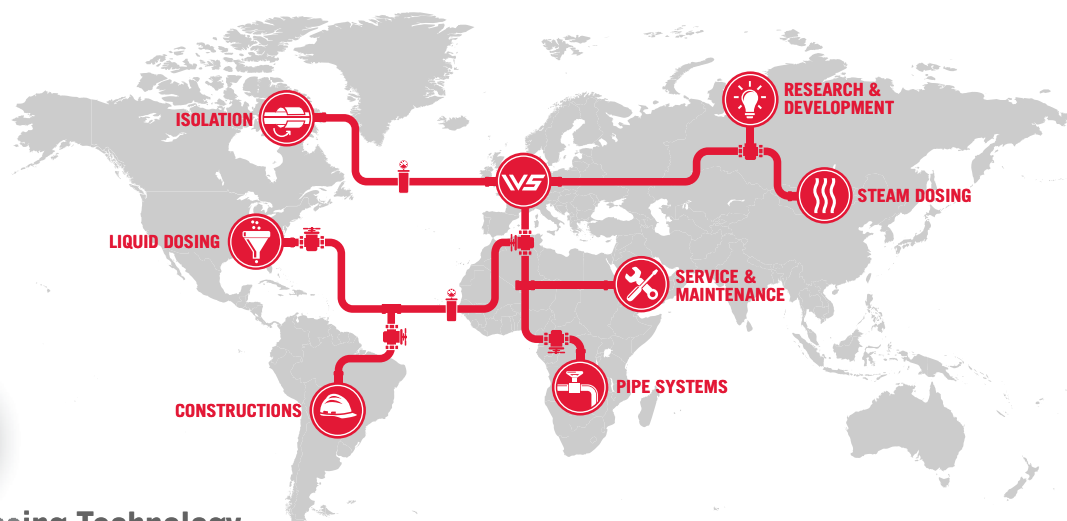
Scan the QR codes below for more information



See us on Twitter, Facebook, LinkedIn and Google+



## We are...



30  
YEARS

### ...IVS Dosing Technology

Over 30 years young and IVS Dosing Technology is still going strong: we are full of inspiration and ambition. Check our brand new website and stay informed about the latest innovations and new developments to come! [www.ivsdosingtechnology.com](http://www.ivsdosingtechnology.com)



Doornhoek 3770  
5465 TA Veghel The Netherlands

T +31(0)413 29 19 76  
[info@ivsdosingtechnology.com](mailto:info@ivsdosingtechnology.com)

[www.ivsdosingtechnology.com](http://www.ivsdosingtechnology.com)





The region's only dedicated show for the supply, use and formulation of ingredients, nutrition and additives for animal feeds, dry petfood and aquafeed



Asia's largest event for the production and processing of animal feeds, dry petfood, and aquafeed. Also including biomass pelleting technology



The show for rice and flour milling, grain processing, industrial pasta and noodle processing, extruded snacks and breakfast cereal production

29 - 31 MARCH 2016 · BITEC EXHIBITION HALLS, BANGKOK, THAILAND



# Asia's **largest** feed and grain event

Your global marketplace – an international event in an international city being held in a country with large home markets

## ●●● What's on show at FIAAP Asia 2016?

- Ingredients • Additives • Formulation • Laboratory equipment
- Quality control

## ●●● What's on show at VICTAM Asia 2016?

- Feed production technology • Packaging • Energy efficiency
- Auxiliary equipment • Biomass pelleting technology

## ●●● What's on show at GRAPAS Asia 2016?

- Rice milling and sorting technology • Flour milling technology
- Flakers, extruders • Grain processing systems • Additives

## ●●● Conferences

Each of the exhibitions will have their own conferences, including:

- The FIAAP Asia Animal Nutrition Conference 2016 • Petfood Forum Asia 2016 • Aquafeed Horizons Asia 2016 • Global Milling Conference with GRAPAS Asia 2016 • Biomass and Biomass Pelleting 2016
- The second ASEAN Feed and Rice Symposium • The second ASEAN Feed Summit

## ●●● Supported by

- Thai Ministry of Agriculture & Co-Operatives • Thai Department of Livestock Development • Thai Department of Fisheries • Thai Feed Mill Association • Thai Rice Milling Association • Thai Chamber of Commerce
- Federation of ASEAN Feed Associations
- Thailand Convention & Exhibition Bureau



## ●●● Organized by

Victam International BV, PO Box 197, 3860 AD Nijkerk, The Netherlands  
T: +31 (0)33 246 4404 F: +31 (0)33 246 4706 E: expo@victam.com

[www.fiaap.com](http://www.fiaap.com) [www.victam.com](http://www.victam.com) [www.grapas.eu](http://www.grapas.eu)

See us on Twitter, Facebook, LinkedIn and Google+ or scan the QR codes



## ●●● Free on-line registration

Free on-line visitor registration is available from 1st November 2015 at:  
[www.victam.com](http://www.victam.com)



# Your global technology process supplier for the animal feed industry



**ANDRITZ is one of the world's leading suppliers of technologies, systems, and services relating to advanced industrial equipment for the animal feed industry.** With an in-depth knowledge of each key process, we can supply a compatible and homogeneous solution from raw material intake to finished feed bagging.

We have been delivering products and plant solutions for the feed industry since the 1930s and have thereby gained extensive knowledge and insight into the increasing demands of the specific feed markets. We put this knowledge into all our efforts to ensure that we have satisfied customers.

