English monthly from Hyderabad, India

RNI Regn. No. 72452/99

Poultry Fortune

Estd. 1991

• Production • Nutrition • Management • Marketing

August 2021

Annual Subscription: Rs 800 Foreign $ 100

Inside...

Poultry Fortune

English Monthly Magazine
(Established in May 1991)
Volume 23 Number 01 August 2021

Editor & Publisher
M. A. Nazeer

Editorial & Business Office:
POULTRY FORTUNE
NRS Publications,
BG-4, Venkataramana Apartments,
11-4-634, A.C.Guards,
Hyderabad - 500 004, India.
Tel: 040 - 2330 3989, 70329 19554
E-mail: info@poultryfortune.com
Website: www.poultryfortune.com

Annual Subscription
India : Rs. 800
Foreign Countries : US $ 100
or its equivalent.

Poultry Fortune will be sent to the subscribers in India by Book Post, and to foreign subscribers by AirMail.

Edited, printed, published and owned by M. A. Nazeer and published from BG-4, Venkataramana Apts., 11-4-634, A.C.Guards, Hyderabad - 500 004, India. Printed at Srinivasa Printers.
Registered with Registrar of Newspapers for India with Regn. No. 72452 / 99. Postal Regn.No. RNP/HD/1067/2021-2023.

NRS PUBLICATIONS
www.poultryfortune.com

CONTENTS

Editorial

News

Special Feature

Articles

ADVERTISERS' INDEX

Subscriptions for Poultry Fortune, English monthly, should be sent to:
The Circulation Department, Poultry Fortune, BG-4, Venkataramana Apartments, 11-4-634, A.C.Guards, Near Income Tax Towers, Hyderabad - 500 004, India. Email: info@poultryfortune.com

Poultry industry facing worst ever crisis

It is high time that Government of India should come to the rescue of poultry farmers and the industry as cost of inputs prices have gone up abnormally. The Government should fairly understand the issues of Poultry sector and act immediately, otherwise irreversible damage will occur to the sector and to its stakeholders, who are producing and supplying nutritious and protein rich food such as eggs and chicken meat for the people. It requires effective follow up by the stakeholders with the ministers and the bureaucrats to resolve the problems of the sector.

Dear Readers,

The August 2021 issue of ***Poultry Fortune*** is in your hands.

The poultry industry in India is facing the worst crisis with the unexpected and abnormal increase in the prices of poultry feed due to abnormal hike in the prices of prime raw material like Soyameal, Maize and Fishmeal. Soya price which was Rs 39 a kilo in February 2021 has gone up to Rs 100 and Fishmeal / Fish oil which was Rs 85 a kilo has gone up to Rs 118.

Poultry feed contains 25% soyabean, 60% maize and about 6% fishmeal / oil. Unable to bear the extreme hike in the feed and feed raw material prices, the poultry farmers and the integrators are facing worst crisis, and in some places they are reducing placement of chicks in the commercial farms. The segments such as farmers, integrators, hatcheries and feed manufacturers are in a more difficult situation economically. All this unexpected crisis occurred due to abnormal increase in soyameal, maize and fishmeal prices due to export of these raw materials since January 2021. Export of soyabean, maize and fishmeal should be stopped and allow import of maize and soyabean.

Although a scare was created among people on the consumption of poultry products like eggs and chicken meat in the initial days of Corona Virus pandemic in March – April 2020, the Health and Nutrition experts recommended consumption of eggs and chicken meat to build immunity and good health in human body against Corona Virus, which helped poultry sector in a positive way. Since that time the producers of eggs and broiler meat started feeling relief, but the present situation of abnormal hike in the cost of production of eggs and broiler meat is creating an alarm among the stakeholders of the industry. It would also affect the employment and the livelihood of lakhs of families dependant on poultry industry.

Poultry industry is demanding that the Central government permit the import of crushed genetically modified (GM) soy seeds for captive consumption of farmers and extension of loans.

As there are some products being imported into India of Genetically Modified Crops (GM Crops), we need not hesitate much using such products as it would bring down prices to a reasonable level and maintain quality of production and the products. There is a need of meaningful discussion among policy makers, scientists and the users (farmers) on the merits and demerits of usage of GM Maize, GM Soyabean etc.

It is high time that Government of India comes to the rescue of poultry farmers and the industry. The Government should fairly understand the issues of poultry sector and act immediately, otherwise irreversible damage will occur to the sector and to its stakeholders, who are producing and supplying nutritious and protein rich food such as eggs and chicken meat for the people.

It is good to note that some of the Associations have started raising alarm on the crisis in the sector. The stakeholders of the industry should meet the Union Ministers and top Officials at Delhi, and explain to them the serious issues of the industry. It requires effective follow up by the stakeholders with the ministers and the bureaucrats to resolve the problems of the sector.

In the News section, you may find news about –

In view of the financial crisis being faced by poultry farmers, **Poultry Farmers and Breeders Association (Maharashtra)** has put forward the following demands to the Government:

Contd on next page

NRS GROUP

Poultry Fortune

Our Mission

Poultry Fortune will strive to be the reliable source of information to poultry industry in India.

PF will give its opinion and suggest the industry what is needed in the interest of the stakeholders of the industry.

PF will strive to be The Forum to the Stakeholders of the industry for development and self-regulation.

PF will recognize the efforts and contribution of individuals, institutions and organizations for the development of poultry industry in the country through annual Awards presentation.

PF will strive to maintain quality and standards at all times.

TALK TO US

SEND AN EMAIL:
info@poultryfortune.com
Please do not send attachment.

FOLLOW US:
facebook.com/poultryfortune,
twitter.com/nrspublications

Send a letter: *Letters to the Editor must include writer's full name, address and personal telephone and mobile numbers. Letters may be edited for purposes of clarity and space. Letters should be addressed to the Editor:*

POULTRY FORTUNE, BG-4, Venkataramana Apartments, 11-4-634, A.C.Guards, Near Income Tax Towers, Masab Tank, Hyderabad - 500 004, T.S, India.
Tel: +91 040 - 2330 3989, 70329 19554. Website: www.poultryfortune.com

Fiscal Relief Measures:

1. Restructuring of Existing Term Loans: We request to reschedule the outstanding term loans, so as to provide extended time (6 - 12 months) for liquidation of loans in order to prevent the farmers turning into NPA.
2. Interest Subvention of Rs 4%: Considering financial losses, PFBAM requested to grant interest subvention of at least 4% for a period of three years.

3.Grant Additional Working Capital: PFBAM requested to grant additional working capital loans to meet increased cost of production.

Non Fiscal Relief Measures :

1. To avail Raw Material at fare price : We request Government to make available Soya and Maize to poultry sector at fare price
2. Allow import of crushed GM Soya seeds / DOC for captive consumption of end users, poultry farmers. Considering skyrocketing prices of Soyabean, it is requested to allow import of crushed GM Soya seed / DOC at least for the particular time frame to stabilise raw material market.
3. Removal of Soybean commodity from NCDEX: Considering high speculations in soya contracts on NCDEX from the last six months, we request the Government as well as SEBI to remove Soybean as a commodity from NCDEX as these speculations have huge potential to disturb poultry sector or maximizing the margins for trade under soya commodity.

The Solvent Extractors' Association of India has asked the government to allow the import of Soyabean meal to help the domestic poultry industry. In a letter to the members of SEA on July 21, Mr Atul Chaturvedi, President of SEA said the oilseed crushing and poultry sector have a symbiotic relationship and one cannot survive without the other.

The Karnataka Poultry Farmers & Breeders Association has urged the Government of India to immediately step in and allow for import of soyabean meal, one of the main ingredients for the poultry sector, to help poultry sector to overcome the current crisis of shortage of feed, consequently resulting in retail price of chicken going beyond Rs 260 per kg.

The Soy Food Promotion and Welfare Association, an organisation representing soybean food processing industries, has urged Prime Minister Narendra Modi to allow the processing industry to import 50,000 tonnes of food speciality Soyabeans from the US duty free. In his plea to the Prime Minister, K. Sarat Chandra Kumar, President, Soy Food Promotion and Welfare Association said the beans could be allowed into the country at "zero" duty under tariff rate quota since food speciality Soyabeans are not grown in the country.

Surge in oilseeds prices seen aiding the trend along with Government initiatives. There is everything rolling in favour of oilseeds this year that could lure growers to planting crops such as Soyabean, groundnut, sesame or sunflower. Thanks to shipment problems in Brazil and China's unending appetite for Soyabean, edible oil prices have nearly doubled currently compared with last year. The Centre has set a tentative target of producing 26.2 million tonnes (mt) of oilseeds during the current Kharif season. This has been set despite the target being missed last year.

Srinivasa Farms, Hy-Line International and Aviagen have partnered to provide oxygen concentrators to poultry farmers to help supplement the medical oxygen requirement of the Covid-19 patients.

A biodiesel technology scaled up at the Kerala Veterinary and Animal Sciences University in Wayanad is getting ready for viable commercial production. The Indian Patent Office issued the certificate of grant for the development titled 'Biodiesel Production from Rendered Chicken Oil' recently. This was the doctoral work of John Abraham, Associate Professor, Livestock Production Management (LPM), College of Veterinary and Animal Sciences, Pookode, under the KVASU. He had pioneered the production of biodiesel from broiler chicken waste and dead poultry.

In the Articles section -- Article titled ***Role of Isoleucine as a Member of Branched Chain Amino Acids in Poultry***, written by Dr Preeti Puspa Mohanty highlighted to address the present environmental pollution and for optimization of feed cost in poultry diet, lowering the crude protein level is a trend in poultry industry. Isoleucine plays vital role in maintaining the amino acid balance in a low crude protein diet. Isoleucine when added with other amino acids supports economical feed formulation in a low crude protein diet maintaining the performance.

Another article titled ***Management of Poultry during Rainy Season***, written by the team of Hy-Line International highlighted that Indian rainy season plays a crucial role in Indian agriculture and it lasts from June through September months. High heat, high humidity, extensive clouding, and several spells of moderate to heavy rain with strong surface winds are the chief characteristics of monsoon season.

The other article titled ***Effect of Supplementing Endotoxin reducer to the Feed on the Performance of Broilers*** written by Dr Amit Patra and other authors highlighted that Endotoxins are potentially toxic compounds from bacterial origin. Once absorbed, endotoxins induce an inflammatory response, thus wasting energy and nutrients meant for growth and production. The most well-known endotoxins are lipopolysaccharides (LPS). Nutrex developed a new innovative feed additive by combining different strategies to reduce the leakage of endotoxins and improve animal's performance.

Article titled ***The Effects of Phytogenic Feed Additives on Performance*** written by Gina Medina and other authors highlighted that Naturogen 510 is a plant derived (phytogenic) feed additive for poultry. It increases nutrient digestibility (+ 7 % crude protein,↑AA, + 3 % crude fat). Improves gut integrity and morphology. Enhances performance in breeder, broiler and layer. Reduces noxious gas emission - reduction of NH3 (up to 50 %). Improves anti-oxidant status (↑ SOD, ↑GSH-Px). Return of Investment over 3:1.

Readers are invited to send their views and comments on the news, special feature and articles published in the magazine which would be published under "Readers Column". Time to time, we shall try to update you on various aspects of Poultry sector. Keep reading the magazine ***Poultry Fortune*** regularly and update yourself. Wish you all fruitful results in your efforts.

M.A.Nazeer
Editor & Publisher
Poultry Fortune

Alltech ONE Ideas Conference provides exclusive access to insights from agri-food experts

6, July 2021: The Alltech ONE Ideas Conference, June 22 – 24, united thought leaders and change makers virtually for an exploration of the power of science, sustainability and storytelling.

More than 10,000 attendees from 101 countries joined the event to enjoy 70 presentations from 90 renowned speakers. It was a week of innovation, inspiration and motivation.

"We are on the brink of a new beginning, and I don't believe that is just a new beginning for Alltech. I think it's a new beginning and a new golden era for agri-food, and it's led by what we believe is a bold vision," said Dr Mark Lyons, president and CEO of Alltech, in his opening remarks. "We want to deliver smarter, more sustainable solutions for our customers and for all of agri-food."

The Alltech ONE Ideas Conference offers on-demand insights from leading experts in agriculture and beyond.

Anna Rosling Rönnlund, vice president and head of design and user experience at Gapminder and co-author of "Factfulness," was one of the opening keynote speakers on Tuesday, June 22. Rönnlund designed the user interface of the famous animated bubble-chart tool Trendalyzer, which helps people better understand global development trends. The tool was eventually acquired by Google and is now used by millions of students across the world. "A lot of things are actually improving, but we're very bad at seeing these slow trends on a global level," said Rönnlund. "We need to have a fact-based worldview, and we need to remember that we need to keep upgrading our worldview because the world changes, and so have our facts about it."

As a professional photographer, filmmaker and former photo journalist for National Geographic, **Dewitt Jones** has made a career of storytelling through images and has travelled the world on a mission to find the extraordinary in the ordinary. Through his compelling stories and captivating photography, Jones shared how changing your lens can change your

life. "These are turbulent times, and the waves of change seem to threaten our very survival. So, what will your vision allow you to see?" Jones asked during his keynote presentation. "Will you look out at a dim, half-coloured world where dreams disappear in the distance — a world where goals don't even seem worth striving for? Or will your vision allow you to see a world still full of beauty and joy and possibility?"

our careers, families, social lives and more. Very rarely do we take the time, or even get the opportunity, to take a step back and look at the bigger picture. However, when we do get to take this broader view, it is only then that we begin to observe the issues that not only affect ourselves but the world and the people around us. And not only can we identify these challenges, but we can

Announcing Acutia Brain Health!

On the inaugural day of the conference, Nikki Putnam Badding, registered dietitian nutritionist and director of Acutia, announced the expansion of its product line with the launch of Acutia Brain Health. The supplement supports cognitive health and brain function while also providing antioxidant benefits and essential nutrients.

"When it comes to our priorities in life, our day-to-day concerns can often take precedence over our long-term goals. We are constantly focused on what is happening right now, in

also engage with them and develop the opportunities and solutions that will help us all for generations to come".

This was one of the main themes of "Economics and Health: A Natural Connection," an in-depth keynote discussion between Alltech president and CEO Dr Mark Lyons and Irish economist, author and university lecturer **David McWilliams** during the second day of the conference.

A professor of nutrition and former member of Parliament in Kenya, Dr Ruth Oniang'o, in her keynote session, discussed the five transformative ways to solve hunger in Africa. Stressing that a holistic approach should be the future vision, she highlighted thoughts on female empowerment, promoting adult literacy, direct resource provision for farmers, soil health and building and supporting smart partnership. Ruth said, "By investing in a farmer, we invest in the future of Africa. That's how we transform the future of food: one farmer at a time."

On the final day,June 24, **Shirzad Chamine,** neuroscientist and CEO of Positive Intelligence, Inc, spoke on how to boost your positive Intelligence through mental fitness. "Moment by moment, one day at a time, that muscle of positivity builds," Chamine reminded viewers at ONE. "And then, the contagion effect that you create in the world — you have no idea how powerful that is. You create a contagion, (but) rather than a contagion of negativity, you intercept that, and you create a positive contagion. And it's beautiful, as you become part of the solution rather than part of the problem in our world," said Shirzad, emphasizing seeing challenges as opportunities and pursuing greater happiness and success through the power of Positive Intelligence.

In closing, Dr Lyons asserted that no industry could have a more positive impact on the future of the planet than agriculture.

"I believe the agriculture industry will create climate-neutral food," said Dr Lyons. "We will continue to be one of those core industries that can sequester carbon, and we will be a big part of the answer to climate change."

"It's the industry that I'm most excited about, and it's a great honour to be working in this industry," Dr Lyons shared. "We can nourish the world while cooling its climate. We can leave not a footprint but a legacy. What an extraordinary opportunity as we all gather, working together for a Planet of Plenty."

Over the course of the Alltech ONE Ideas Conference, more than 70 on-demand presentations explored challenges and opportunities in aquaculture, beef, business, crop science, dairy, equine, health and wellness, pet, pig, and poultry sectors.

Registrants engaged virtually in many ways during the Alltech ONE Ideas Conference, including the ONE Fundraising Run, the Alltech Ideas Hub and expert-led mixology sessions.

Registration for the Alltech ONE Ideas Conference will remain open, offering attendees 24/7 access to all on-demand content, including keynote presentations and tracks, until April 2022.

Contact: Dr. Manish Chaurasia, Marketing Manager, South Asia

mchaurasia@alltech.com; +91 8130890989

About Alltech:

Founded in 1980 by Irish entrepreneur and scientist Dr Pearse Lyons, Alltech delivers smarter, more sustainable solutions for agriculture. Our products improve the health and performance of plants and animals, resulting in better nutrition for consumers and a decreased environmental impact.

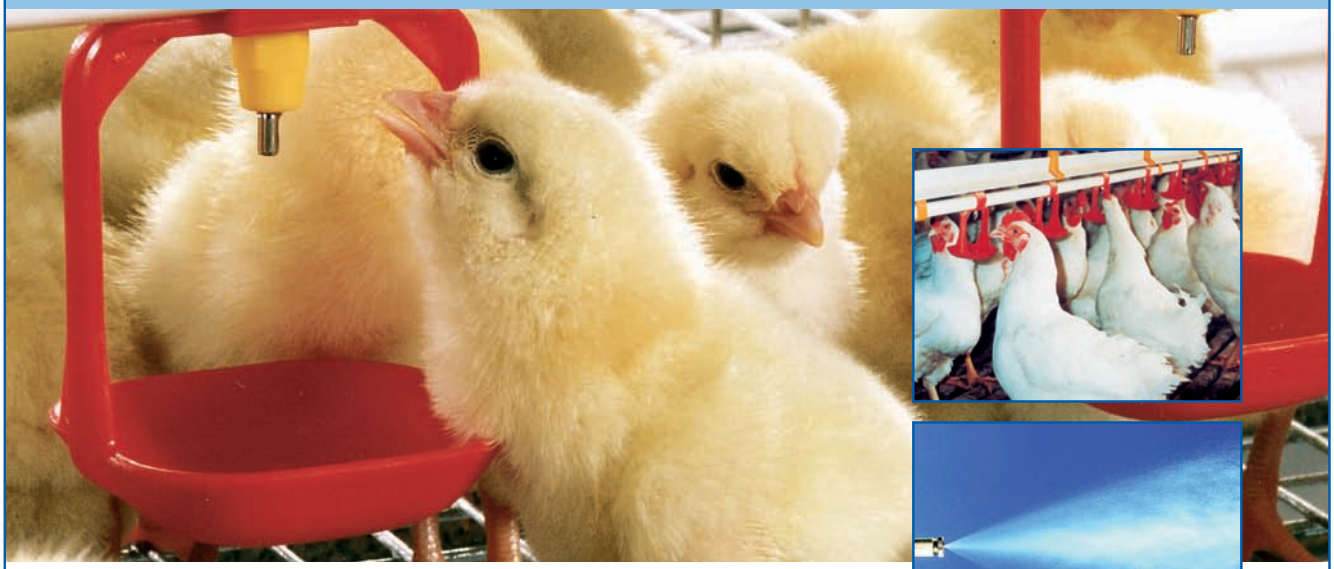
We are a global leader in the animal health industry, producing additives, premix supplements, feed and complete feed. Strengthened by more than 40 years of scientific research, we carry forward a legacy of innovation and a unique culture that views challenges through an entrepreneurial lens.

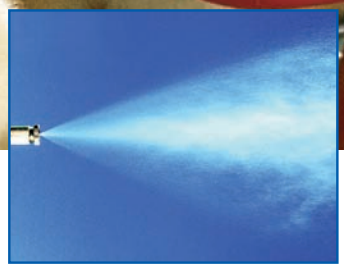
Our more than 5,000 talented team members worldwide share our vision for a Planet of Plenty. We believe agriculture has the greatest potential to shape the future of our planet, but it will take all of us working together, led by science, technology and a shared will to make a difference.

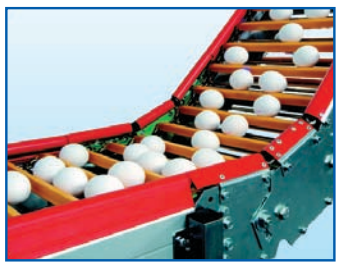
Alltech is a private, family-owned company, which allows us to adapt quickly to our customers' needs and maintain focus on advanced innovation. Headquartered just outside of Lexington, Kentucky, USA, Alltech has a strong presence in all regions of the world. For more information, visit alltech.com, or join the conversation on Facebook, Twitter and LinkedIn.

WANTED DISTRIBUTORS

LUBING
THE ORIGINAL!

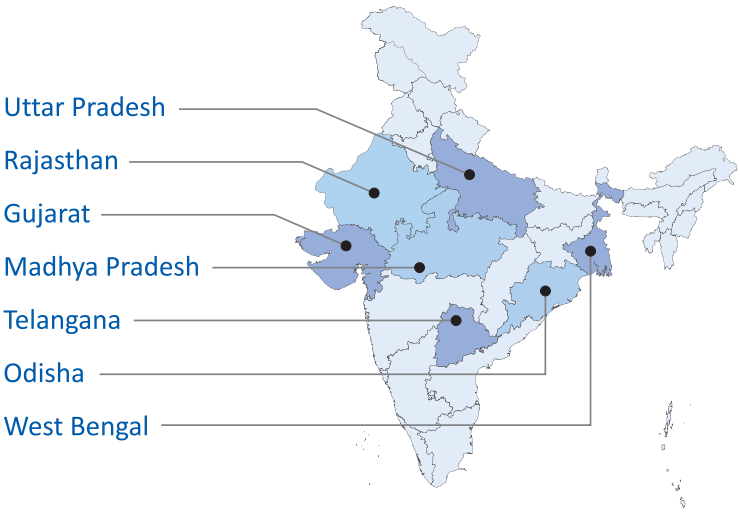






Since 2001, Lubing India Pvt. Ltd. is most preferred brand for Nipple Drinking System for Broilers, Layers & Breeder farm.

To cater to its already established markets as well as to tap the areas with huge potential, **Lubing India is looking for financially sound distributors in following states:-**



- **Drinking System**
  For Chicks & layers In Cages
- **Top Climate System**
- **Conveyor System**
  For Egg Transportation

LUBING INDIA PVT. LTD.

Contact: +91 9975440407
+91 7387007677

Email : sales1@lubingindia.com
sales2@lubingindia.com
URL : www.lubingindia.com

Danisco Animal Nutrition Expands the Launch of Axtra PHY GOLD in Asia Pacific

SINGAPORE - July 15, 2021 - Danisco Animal Nutrition, a business unit of IFF's Health & Biosciences division, announced today the launch expansion of the industry-leading novel phytase enzyme, Axtra PHY GOLD in Malaysia, Thailand and Australia. Axtra PHY GOLD was first launched in India in 2020 and will eventually be available across all markets in Asia Pacific, pending regulatory authorizations. Axtra PHY GOLD is the most bioefficacious phytase currently available on the market, helping improve sustainability while delivering greater feed cost savings to producers.

Asia Pacific has a thriving animal nutrition market encouraged by economic growth and higher disposable income, resulting in changing food habits. Major factors such as a growing demand for animal protein and increasing consumer awareness around the health benefits from consuming high- quality protein are driving the livestock feed market in the region.

"In Asia Pacific, fluctuations in raw material availability, quality and costs for livestock feed have increased the demand for innovative feed additive solutions. Our new phytase, Axtra PHY GOLD addresses these input challenges by offering unprecedented flexibility and consistency, delivering greater performance and feed cost savings for producers," said Dr Arno de Kreij, segment leader, Danisco Animal Nutrition, IFF.

Recent scientific studies demonstrate that Axtra PHY GOLD's ability to allow formulation of inorganic phosphate-free high phytate diets, improves sustainability of animal production. It also offers market-leading thermostability, proven to outperform other commercial phytases under a wide range of pelleting conditions, making it the natural choice for applications where pelleting performance is a primary concern.

Phytate is the main storage form of phosphorus in all grains, which represents the basis of most plant-based diets used in animal production. Phytases are enzymes that help break down phytate, allowing better absorption of phosphate and reducing or removing the need for addition of phosphate supplements in poultry and swine diets. The ideal phytase needs to break down phytate as quickly as possible to reduce the phytate's negative impact. This requires an enzyme that is highly active at a low pH in an animal's upper digestive tract.

" Most poultry and swine diets contain a phytase enzyme, which is an important contributor to the feed performance. Axtra PHY GOLD has a superior pH profile and works faster than other competitor phytases to break down phytate, thus avoiding interference with digestion and performance1. As a result, it can improve the release and subsequent uptake of phosphorous, calcium, energy and amino acids, reduce the anti-nutritional effects of phytate, and drive more feed cost savings," shared Dr de Kreij.

Danisco Animal Nutrition has over 20 years of leadership in phytase development and production. In 2003, the company launched Phyzyme XP, the first bacterial phytase to help animal producers reduce phosphorus emissions, improve nutrient uptake and maximize phytate break down to drive profitability. As most feed is pelleted, in 2009, Danisco Animal Nutrition introduced pioneering Thermo Protection Technology (Phyzyme XP TPT) to the industry to deliver greater thermostability.

In 2013, the business set a new benchmark of bioefficacy with the launch of Axtra PHY. Before the introduction of the new Axtra PHY GOLD, Axtra PHY was the most bio efficacious phytase on the market due to its low pH optimum.

"At Danisco Animal Nutrition, we are committed to innovating to develop better solutions for animal producers. Axtra PHY GOLD is a testament to this commitment and reinforces our leadership in phytase enzymes, bringing a modern, more advanced offering to the animal nutrition industry." said Dr de Kreij.

1 Based on external published data, references may be provided upon request.

About Danisco Animal Nutrition

Danisco Animal Nutrition, now part of IFF is a market leader in nutritional health solutions with a comprehensive portfolio of feed enzymes, betaine, phytogenics and probiotics. Through the lens of nutribiosis, IFF invests in science and innovation to help producers improve performance, increase liveability and support welfare in the face of increasing pressure to reduce or remove antibiotics from production systems. Danisco Animal Nutrition capabilities are underpinned by the quality and quantity of our trials, including over 80,000 guts sampled from over 500 farms, investments in omics technologies and microbiome research, and collaboration with leading commercial, governmental and academic partners. For more information, visit www.iff.com/portfolio/markets/animal-nutrition

Welcome to IFF

At IFF (NYSE: IFF), an industry leader in food, beverage, health, biosciences and sensorial experiences, science and creativity meet to create essential solutions for a better world – from global icons to unexpected innovations and experiences. With the beauty of art and the precision of science, we are an international collective of thinkers who partners with customers to bring

THE ORIGINAL ALPHA D3

1980s
Research at University of Georgia

1989
Patent granted for the Alpha D3 metabolite

2010
Alura launches Alpha D3 in poultry

2010
Alura bring Alpha D3 to India

1α OH-D3

AlphaD3™
Vitamin

Revolutionising poultry performance since 1989

Ever since 1989, the miracle metabolite Alpha D3 has been a catalyst in helping the poultry industry attain sustainable higher production performance rates with increased profitability. Alura is the only company to have brought the original and patented vitamin Alpha D3 to market.

WHAT MAKES ALURA ALPHA D3 UNIQUE?

- Increased bioactivity in comparison to regular Vitamin D3 and other metabolites
- Improve body weight gain and FCR
- Prevents black bone syndrome
- Improves egg shell quality and maximises production of saleable eggs
- Synergetic and Complementary effects with Phytase
- Proven ROI in Broilers & Layers
- Thermostable for palletisation
- Extensively studied product dosage rates for optimum performance.

USAGE

LAYER | BROILER | BREEDER

THE ORIGINAL VITAMIN ALPHA D3 SINCE 1989

EXTENSIVELY TESTED & VALIDATED

We are the only company to have extensively tested the efficacy of this metabolite through academic papers, clinical trials, and field tests. More than 40 published reviews in scientific journals proves Vitamin Alpha D3 produces more chicken protein, with a better quality at a lower cost.

Alura™
Animal Health & Nutrition

Imported & distributed by:
Sapience Agribusiness Consulting LLP
sales@sapienceagri.com
+91 97403 99994

sapience

scents, tastes, experiences, ingredients and solutions for products the world craves. Together, we will do more good for people and planet. Learn more at iff.com, Twitter , Facebook, Instagram, and LinkedIn.

Poultry industry seeks extension of loans, import of GM soybean

Farmers battered by pandemic and rising raw material costs, says Association

Pune, August 1 2021: After facing crushing losses for the past 18 months due to the pandemic, the poultry industry is demanding that the Central government permit the import of crushed genetically modified (GM) soy seeds for captive consumption of farmers.

With the sector bedevilled by increasing production costs, misinformation regarding the link between poultry and avian flu outbreaks, COVID-19-induced restrictions and natural calamities, skyrocketing prices of raw materials like soybean (which constitutes 25% of poultry feed) and maize (which constitutes 60%) in the last one year have only compounded the woes of the poultry farmers.

Erosion of working capital

"The outbreak of COVID-19 has created a massive crisis which led to an initial depletion of demand in chicken products owing to false news about the linkage between the virus and poultry products. This created an unwarranted financial crisis and led to the erosion of working capital. Since the last several months, high speculation activities in soya contracts on NCDX has been disturbing the sector," said C. Vasanthkumar, president, Poultry Farmers and Breeders Association, Maharashtra.

The association has urged the Centre and the State government for non-fiscal and fiscal relief measures which include the restructuring of term loans and additional working capital.

"We urge the governments to reschedule outstanding term loans by providing an extended time (6 - 12 months) for liquidation of loans to prevent the farmers turning into non-performing assets. Considering the scale of financial losses, we request governments to grant interest subvention of at least 4% for three years and additional working capital loans to meet the increased production costs," Mr. Vasanthkumar said.

The most important non-fiscal is for the government to allow import of crushed GM soy seeds for captive consumption of end users, poultry farmers.

"Given the ratcheting prices of soybean, we request the government to allow the import of crushed GM seed at least for the particular time frame to stabilise raw material market," he said.

He warned that the rise in soybean process had led to the skyrocketing of prices of eggs and chicken products in the retail market.

Protein sources

"Chicken and eggs are the only cheapest non-vegetarian protein sources available in the market. But, owing to the increased raw material prices, retail chicken prices are rising at a whopping rate with chicken being sold at ₹250 - 300 per kg in the retail market. This could lead to an inflation in food prices in the country amid the pandemic."

The sector has endured losses of more than ₹700 crore in Maharashtra alone since the eruption of the pandemic in March last year.

"We had a similar situation in 2006 when there was a first outbreak of avian influenza. During that time, the government of India had announced interest subventions and increased the credit duration to the poultry farming for the limited period," Mr. Vasanthkumar said, as per a report published in The Hindu Business Line.

The price of a kilo of chicken is Rs 260

Hyderabad: The month of Bonalu festival, the month of Ashadha, is a month of great demand for meat. But now the price of chicken is also plummeting. Week by week the price is going up. The price of a kilo of chicken live has gone up from Rs 240 on July 15, it has reached Rs 260, and is sold at Rs 240 in wholesale and up to Rs 280 in retail live. A kilo of chicken costed between Rs 180 and Rs 200 as on July 4. During the week, it rose by Rs 60 per kg. Demand for chicken and goat meat is high in Hyderabad as the Bonalu festival began.

The price of a kilo of chicken live went up to Rs 260

But early on, the price of chicken was less and people were supportive. Chicken prices plummeted at the beginning of the first wave of corona. However, chicken shops are once again buzzing with people saying that the corona is not caused by chicken and that chicken and eggs must be eaten to boost immunity during this time. The price of a kilo of country chicken is around Rs 700 - 750.

Egg price also...

Demand for eggs (since it boosts immunity) has grown significantly as a result of Covid-19. In wholesale stores the price of dozen eggs are around Rs 65 – 68 whereas in general stores it is Rs 72.

Aviagen India Customer Muchim Foods Sees First Ross 308 AP Hatch

Udumalpet, Tamil Nadu, 15 June 2021: Aviagen India customer Muchim Foods Ltd was proud to welcome the first hatch of Ross 308 AP broiler chicks from their brand new hatchery in Kanpur, Uttar Pradesh, in early March.

Ajay Tiwari, Managing Director, Muchim Foods

Mr Ajay Tiwari, Managing Director of Muchim Foods, commented, "It's great to see the results of our hard work. This has been very much a collaborative effort by Muchim Foods, with guidance and advice from Aviagen India's breeder and hatchery experts. We look forward to a future of working and growing together. Our customers are going to be pleased with the chick quality and amazing performance of the Ross 308 AP broiler."

Aviagen India cares about its customers throughout the country, and works alongside them to ensure the best performance, health and welfare of their chicks. The Aviagen India hatchery support team headed by Joe Maria, Hatchery Operations Manager, commented. "Our daily goal is to help our customers achieve optimal conditions for the best hatchery outcome. We are pleased to see that Muchim Foods has an excellent breeder flock with good-quality hatching eggs, high hatchability and super chick quality."

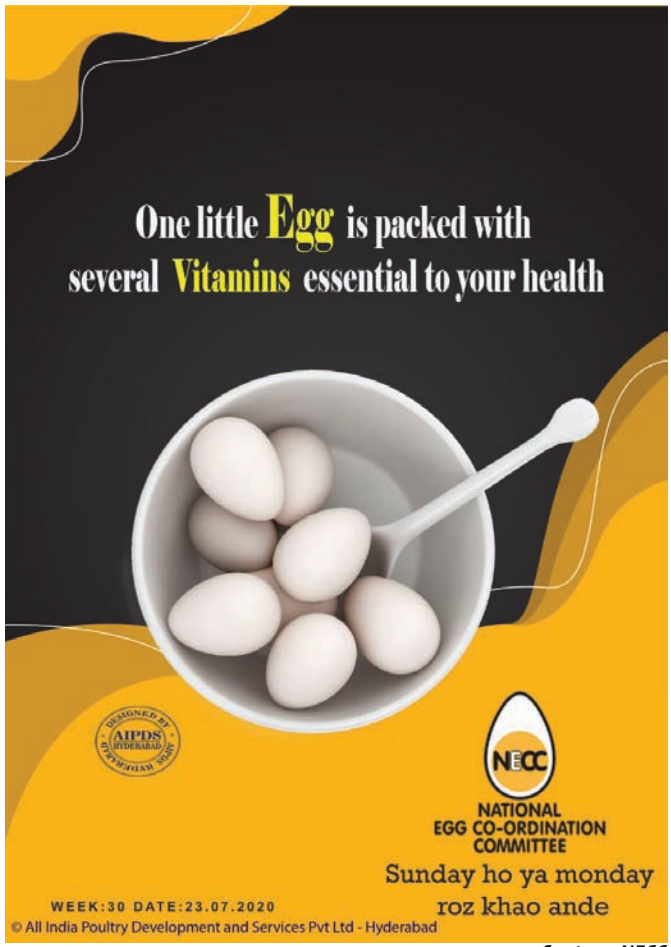
Dr Deepak, Aviagen India Technical Manager, added "The chicks got off to an excellent start and were carefully managed throughout the growing period by Muchim Breeder Farm Team headed by Mr Kamath, Breeder Farm Manager. We are seeing the results now in both excellent peak and persistency. Production has been above 80% for the past five consecutive weeks and is expected to reach 86% peak or more."

From left: Breeder Farm Manager Kamath and Tiwari from Muchim Foods, Paul Gittins and Dr Jayant from Aviagen India

About Aviagen

Since 1923, Aviagen has been a preferred global poultry breeding company with a mission to help its customers -- the world's chicken meat producers -- supply sustainable, affordable and nutritious protein to their growing communities. Putting into practice its corporate value of "Breeding Sustainability," Aviagen implements efficiencies that make commercial chicken production environmentally and socially responsible and economically beneficial to producers, while at the same time promoting bird performance, health and welfare.

To meet varied market demands, Aviagen offers a full portfolio of breeding stock under the Arbor Acres, Indian River and Ross brand names. The Rowan Range]and Specialty Males target slower-growing and other niche market needs. Aviagen is based in Huntsville, Alabama, US., with operations across the UK, Europe, Turkey, Latin America, India, Australia, New Zealand, Africa and the US, and joint ventures in Asia. The company employs close to 8,000 people, and serves customers in 100 countries.



Coutesy: NECC

Biodiesel technology from broiler chicken waste gets ready for commercial production

Dr John Abraham pioneers the production of Biodiesel from broiler slaughter waste and dead poultry

Kerala, 26 July 2021: A biodiesel technology scaled up at the Kerala Veterinary and Animal Sciences University (KVASU) in Wayanad is getting ready for viable commercial production. The Indian Patent Office issued the certificate of grant for the development titled 'Biodiesel Production from Rendered Chicken Oil' recently.

This was the doctoral work of John Abraham, associate professor, Livestock Production Management (LPM), College of Veterinary and Animal Sciences, Pookode, under the KVASU. He had pioneered the production of biodiesel from broiler chicken waste and dead poultry.

Along with his guide Ramesh Saravana Kumar, professor and head of the LPM, Veterinary College and Research Institute (VCARI) at Namakkal in Tamil Nadu. Dr Abraham filed a patent for the technology in 2014 on behalf of the Tamil Nadu Veterinary and Animal Sciences University (TANUVAS).

Dr Abraham scaled up his innovation by establishing a pilot plant at the KVASU campus at Pookode and demonstrated the economic production of a renewable bio-fuel from a potential hazardous waste.

John Abraham at the Biodiesel Production Plant

The bio-fuel was validated by the Bharat Petroleum Corporation Limited (BPCL), Kochi refinery. Demonstrably, a farm vehicle ran on it with better engine efficiency and significantly reduced emissions. Several rendering plants across the country had approached the team for tapping the idea's commercial potential after an article on the technology was published by The Hindu in 2016, said Dr Abraham.

However, a Coimbatore-based rendering plant has signed a Memorandum of Understanding (MoU) with the TANUVAS for the commercial production of the biodiesel, which would commence soon, he said.

The chicken-sourced biodiesel was found to have a commendably higher cetane value of 72, as compared to 64 of petro - diesel, meaning better efficiency, Dr Abraham pointed out.

It is relatively cheaper as well. Diesel could be produced at ₹30.23 per litre and the bio-fuel can be used at 80:20 ratio with diesel in normal, unmodified, diesel engines. However, it can be used as the sole fuel with some engine modifications, he said.

Dr Abraham has offered the patent as a tribute to his guide Dr Kumar who passed away recently.

Dr Abraham is planning to present a memento with the patent certificate to the VCARI, where he had done the research, in memory of his guide.

Dr Abraham was recently awarded NITI Aayog's 'Atal India Challenge' for this innovation, according to a report published in The Hindu Business Line.

KPFBA urges Government to import soya bean meal immediately

Bangalore, 28 July 2021: The Karnataka Poultry Farmers & Breeders Association (KPFBA) has urged the Government of India to immediately step in and allow for import of soya bean meal, one of the main ingredients for the poultry sector, to help the poultry sector to overcome the current crisis of shortage of feed, consequently resulting in retail price of chicken going beyond Rs 260 per kg.

The KPFBA President, Dr Sushanth Rai said the cost of production of chicken had doubled in less than a year mainly due to the feed costs soaring. The KPFBA pointed out that Soya which was Rs 35 per kg last year had more than doubled to Rs 80 per kg. Similarly, maize price had increased from Rs 15 to Rs 25 per kg, making it difficult for poultry farmers to source quality feed. The cost of production of chicken had increased from Rs 70 per kg to over Rs 120 per kg and this was affecting both the poultry farmers as well as the consumers.

The KPFBA President urged the government to take immediate remedial measures as to help the poultry farmers come out of a critical situation, further compounded by the pandemic.

Import soya and curb hoarding

Dr Sushanth Rai urged the Government of India to allow duty free import of 12 lakh metric tons of soya bean meal as to immediately overcome the crisis. Also the Government should take strict action against those traders who were hoarding soya bean meal, resulting in short supply and rise in price. He said the government should take immediate steps as many poultry farmers were exiting the business, unable to deal with the crisis. The government, he added, has to also look at it from a health perspective as chicken has been endorsed by the World Health Organisation to be an immunity booster.

EW Nutrition Holds 1st Essay Writing Competition on Antimicrobial Resistance Risks

In the past few decades, Antimicrobial resistance (AMR) has developed into a major global challenge for human and animal health, accounting for over 700,000 deaths annually. With the current trend, over 10 million lives would be threatened by AMR by 2050, with a majority of the cases confined to the Asian & African continents. The increased & indiscriminate usage of antimicrobials as growth promoters in the livestock sector can have serious implications on human health.

In line with its mission of "mitigate the impact of antimicrobial resistance by providing comprehensive animal nutrition solutions", came up with a unique idea of holding an Essay Writing Competition on one of the biggest challenges to mankind.

The competition was open to students of Veterinary Colleges from all over the nation, with the topic:

"AMR – A rising global concern and ways of mitigating its risks"

This competition was held Online because of the Covid restrictions which did not permit otherwise.

The response was overwhelming, as 219 students enrolled and participated in the contest. Out of these, 39 entries were shortlisted for the next round. These participants were re-evaluated for ruling out plagiarism & complying with other criteria.

Eight entries were selected for the final assessment and referred to a panel consisting of the most eminent and renowned personalities of the livestock industry.

Jury Panellists:

- Dr Nitin Kurkure (Director Research; Professor & Head of Department, Pathology) Veterinary College, Nagpur

- Dr Natarajan – Veterinary College, Nammakal

- Dr Shirish Nigam – Managing Director, EW Nutrition, South Asia

Since the entries were of such high standards, it was a herculean task for the Jury to decide on the best three.

The prize winners declared were ranked as follows:

1st position: Shalvi Srivastav (2nd Year BVSc Student from DUVASU, Mathura)

2nd position: Dr Darshitha Latur (MVSc student from Sri Venkateshwara University, Hyderabad)

3rd position: Aditya Maheshwari (2nd Year BVSc Student from DUVASU, Mathura)

In appreciation of their communication skills, creativity, critical thinking and articulate presentations, these young & budding veterinarians were rewarded by EW Nutrition with Amazon Gift Vouchers of ₹ 21000, ₹11000 and ₹ 5000 denominations as first, second and third prize respectively. Each of them was also awarded a Certificate of Excellence.

In recognition of their endeavour and hard work, the remaining 36 participants were also awarded Certificates of Participation.

By conducting this first essay writing competition, **EW Nutrition** has been able to achieve its objective of identifying the best talent amongst the budding veterinarians who are to take over the reins of the Animal Health Sector in the near future.

AP ACHIEVERS

BEST ROSS® 308 AP ACHIEVERS IN JUNE 2021

Company : Japfa, Narayangaon
Farmer Name : Mr. Sagar Babasaheb Pawase | Shed : EC – Shed

June 2021	Top#1
Chicks Placed	15970
Mean Age	33.0
Avg Body Wt	2280
FCR	1.41
cFCR	1.336
Mortality	4.25%
Daily Gain	69.2
EPEF	471.0

"With combination best feed, Ross 308 AP chicks and service from Japfa, I got excellent performance. I will continue associate with Japfa for long term"

JUNE TOP CUSTOMER ACHIEVERS

Customer	Chicks Placed	Mean Age	BW	FCR	cFCR	Mor %	Day gain	EPEF
1	15970	33.0	2280.0	1.410	1.336	4.25%	69.2	471.0
2	2952	39.6	2640.0	1.520	1.378	4.07%	66.6	420.5
3	3163	33.0	1984.0	1.467	1.471	2.24%	60.1	400.6
4	4850	36.8	2030.0	1.490	1.483	6.25%	55.2	347.4

JUNE TOP 10 FIELD PERFORMANCE

Flock	Chicks Placed	Mean Age	BW	FCR	cFCR	Mor %	Day gain	EPEF
Flock 1	15970	33.0	2280.0	1.410	1.336	4.25%	69.2	471.0
Flock 2	10586	36.7	2400.0	1.500	1.411	2.31%	65.3	425.4
Flock 3	2952	39.6	2640.0	1.520	1.378	4.07%	66.6	420.5
Flock 4	10595	35.6	2370.0	1.540	1.458	3.71%	66.7	416.8
Flock 5	3312	39.0	2540.0	1.510	1.390	3.41%	65.1	416.6
Flock 6	14487	36.1	2310.0	1.490	1.421	4.60%	64.0	409.7
Flock 7	11715	36.0	2240.0	1.470	1.417	3.87%	62.2	406.7
Flock 8	10281	36.4	2330.0	1.520	1.447	3.69%	64.0	405.7
Flock 9	18732	35.8	2270.0	1.500	1.440	4.47%	63.4	403.8
Flock 10	3163	33.0	1984.0	1.467	1.471	2.24%	60.1	400.6

JUNE BEST OF THE BEST

Best Weight for Age	2.9 Kg @ 45.5 days
Best Daily Gain	69.9gm
Best FCR	1.396
Best Livability	98.49%

Cargill's Mycotoxin Survey

(May'20 -April'21)

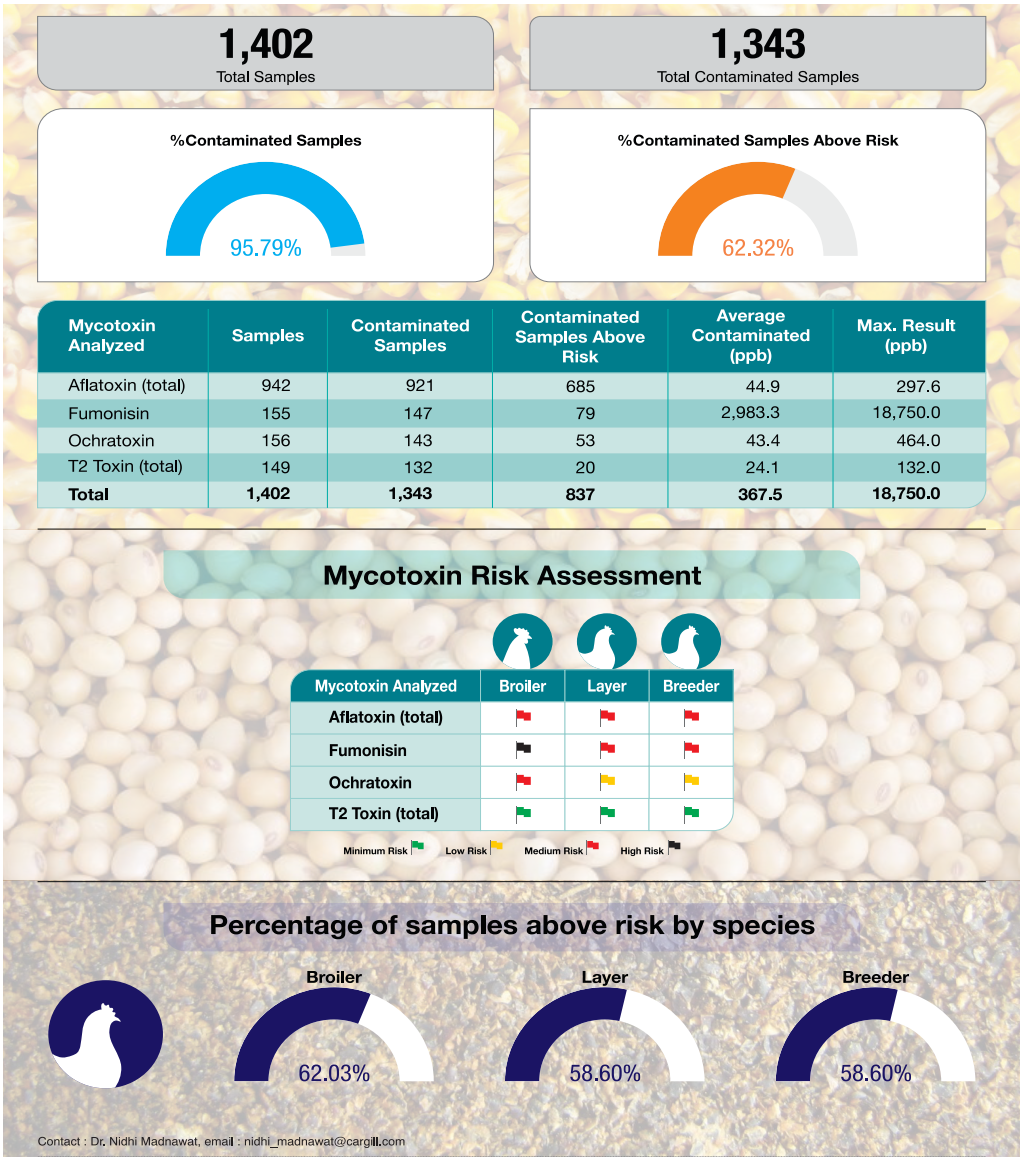
Mycotoxins are secondary metabolites of molds / fungi and has become is due to constant change in climate and inefficient storage conditions and Mycotoxin contamination is one of prominent factor for grain wastage in world and negatively impact animal health consequently. There are more than 400+ mycotoxins prevalent worldwide, but, few of mycotoxins contribute major loss for animal health. Aflatoxins, ochratoxins, trichothecenes, zearalenone and fumonisins are the mycotoxins of greatest agro-economic importance.

Some molds are capable of producing more than one mycotoxin and some mycotoxins are produced by more than one fungal species. Often more than one mycotoxin is found on a contaminated substrate. Mycotoxins occur more frequently in areas with a hot and humid climate, favourable for the growth of molds.

Mycotoxins have various acute and chronic effects on animals (especially monogastrics) depending on species and susceptibility of an animal within a species. The economic impact of mycotoxins include loss of human and animal life, increased health care and veterinary care costs, reduced livestock production, disposal of contaminated foods and feeds, and investment in research and applications to reduce severity of the mycotoxin problem.

This "Cargill's Mycotoxin Survey" captures results of 1402 samples analyse from May'20 to April'21 from all over India and highlights following points:

1. Almost 96% samples were contaminated with mycotoxins and 62% samples were above risk level.
2. Raw ingredients were highly contaminated with Aflatoxin & average contamination level was 45ppb, which is much higher than risk level of aflatoxin for poultry.
3. Fumonisin is also prevalent in India with average level of 2983ppb.
4. Broiler, layer & breeder are at medium risk for Aflatoxin contamination
5. Broilers are at higher risk for fumonisin and layer & breeder is at medium risk due to fumonisin contamination.



Mycotoxin Analyzed	Samples	Contaminated Samples	Contaminated Samples Above Risk	Average Contaminated (ppb)	Max. Result (ppb)
Aflatoxin (total)	942	921	685	44.9	297.6
Fumonisin	155	147	79	2,983.3	18,750.0
Ochratoxin	156	143	53	43.4	464.0
T2 Toxin (total)	149	132	20	24.1	132.0
Total	**1,402**	**1,343**	**837**	**367.5**	**18,750.0**

www.provimi.in

Cargill Premix & Nutrition

Provimi Animal Nutrition India Pvt. Ltd
IS-40, KHB Industrial Area, Yelahanka New Town,
Bengaluru - 560 064, Karnataka, India.
T +91-80-28460060 E info@cargill.com

Cargill® Helping the world thrive

COVID-19 crisis: *Srinivasa Farms, Hy-Line International & Aviagen donate oxygen concentrators to support Poultry Farmers*

Srinivasa Farms, Hy-Line International & Aviagen have partnered to provide oxygen concentrators to Poultry Farmers to help together to support and stand by our Poultry Farmers in this moment of crisis by helping secure oxygen concentrators

oxygen concentrator - 1

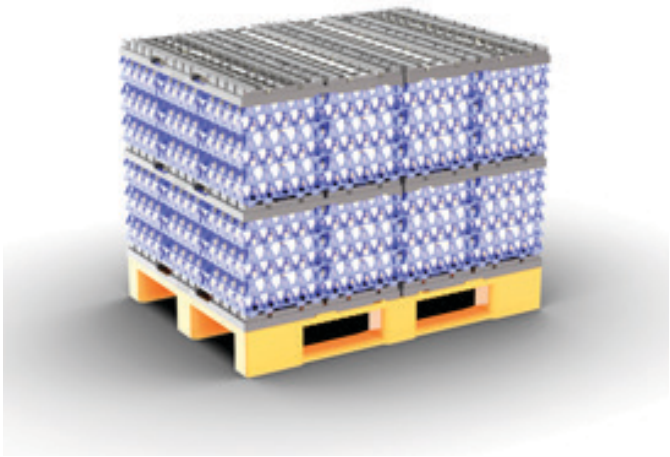
supplement the medical oxygen requirement of the Covid-19 patients. These oxygen concentrators will be made available free of cost to patients thereby helping reduce the burden on our healthcare system.

This donation is a part of the ongoing efforts by Srinivasa Farms to support the communities that we serve, especially during the COVID-19 pandemic. Since last year, Srinivasa Farms has donated more than 10 lakhs eggs to the poor and needy.

"The entire Srinivasa family along with Hy-Line & Aviagen is rallying which are need of the hour," said Suresh Chitturi, MD, Srinivasa Farms Private Limited & Chairman, International Egg Commission.

oxygen concentrator - 2

A brand new system for duck and turkey egg transportation



XL Divider 2

Following the very successful Eggs Cargo System for chicken eggs, GI OVO has now also developed the Eggs Cargo System XL. The XL system is specially designed for the transport of duck and turkey eggs. The system consists of a tray which is designed for 20 eggs and which offers maximum comfort and protection to the eggs. In addition, it consists of a pallet with the dimensions 120x90 cm.

These pallets are exactly matched to 12 stacks of trays per row. Finally, the system consists of a divider. This divider makes the use of empty trays on top of the stacks unnecessary. The stacks of eggs can also be slid over the divider instead of having to be placed. That makes the work much lighter and faster.

The system can be build up to 5 rows containing 7.200 eggs per pallet. The entire system can also be picked up and unpacked with robots. In case of bad roads, the EC protector can also be used. This protector connects the top layer of eggs with the row below and prevents the top layer from jumping with the risk of unnecessary damage to the eggs.

All parts of the Eggs Cargo System XL are made of durable plastic with an anti-aging additive. If desired, the system can also be provided with Clean Compound. An additive which, in combination with professional cleaning of the parts, reduces the risk of contamination to a minimum.

GI OVO can supply the system in almost all RAL colors and provided with customer-specific inscriptions. All this for indication to the user. The Eggs Cargo System XL is the perfect solution for the damage-free transport of duck-turkey eggs.

PFBA-M demands Govt of India to resolve issues of Poultry sector

Pune, 31 July 2021: Below is the text of the release from PFBA-M: "Poultry sector is one of the most important sectors under Indian Agriculture. The poultry sector provides and ensures the fulfillment of protein requirement and balances the human nutrition. Today, India is one of the largest manufacturers of eggs and broiler meat. In the last two decades Indian Poultry sector has contributed more than 5% in GDP to the overall Agri sector's GDP. However, since last one and half year Poultry sector is facing a number of challenges on increased cost of production, misinformed reality about outbreaks of Bird Flu, Covid-19 restrictions and Natural Calamities.

The recent outbreak of Covid-19 has created a massive crisis thereby initial depletion of demand in chicken products and later created awareness about importance of protein. Initial setback posed challenges before the poultry sector and created an unwarranted financial crisis amongst all the poultry farmers and the erosion of working capital has aggravated the situation.

Since last one year, skyrocketing prices of raw materials like soybeans and Maize have added to the woes of poultry farmers. High speculation activities in Soya contacts on NCDEX has been disturbing the poultry sector for the last 8 months. For raw

C. Vasanthkumar

material supply, poultry sector largely dependent upon Soya bean. These speculations are one of the main reasons behind skyrocketing prices of eggs and chicken products in the retail market, which may leads to food inflation in the country.

We had a similar situation in 2006 when there was a first outbreak of Avian Influenza in the country. During that time the Government of India, announced Interest Subventions and increased credit duration to the poultry farming for the limited period.

Chicken and Eggs are the only cheapest non vegetarian protein sources available in the market. Now these increased raw material prices directly affecting retail chicken prices. As a result of which chicken is sold at Rs 250 – 30/ kg in the retail market. This may leads to food inflation in the country amid Corona virus outbreak. Government should look at this issue from a health perspective as chicken had been endorsed by the World Health Organization (WHO) as an immunity booster.

Considering all above aspects, Poultry Farmers & Breeders Association (Maharashtra) has put forward the following demands.

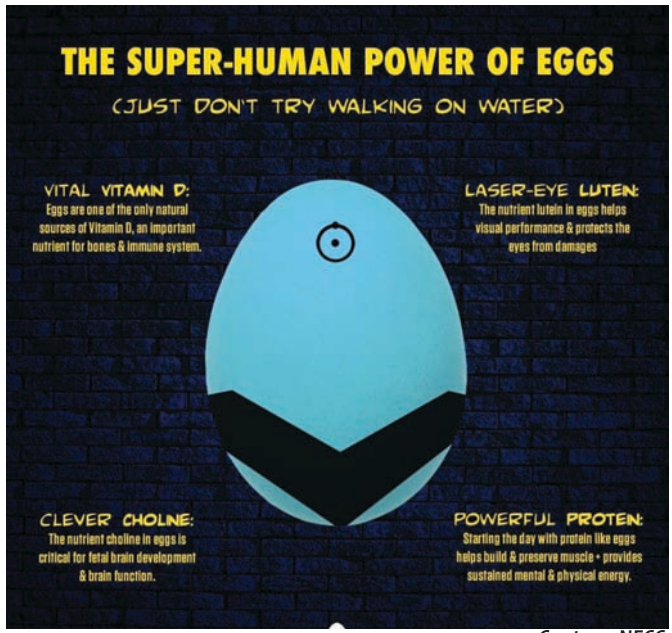
Fiscal Relief Measures :

1. Restructuring of Existing Term Loans : We request to reschedule the outstanding term loans, so as to provide extended time (6 - 12 months) for liquidation of loans in order to prevent the farmers turning into NPA
2. Interest Subvention of Rs 4% : Considering financial losses, we request to grant interest subvention of at least 4% for a period of three years.
3. Grant Additional Working Capital : We request you to grant additional working capital loans to meet increased cost of productions.

Non Fiscal Relief Measures :

1. To avail Raw Material at fare price : We request Government to make available Soya and Maize to poultry sector at fare price
2. Allow import of crushed GM Soya seeds/ DOC for captive consumption of end users, poultry farmers. Considering skyrocketing prices of Soya bean, it is requested to allow import of crushed GM Soya seed / DOC at least for the particular time frame to stabilise raw material market.
3. Removal of Soybean commodity from NCDEX: Considering high speculations in soya contracts on NCDEX from the last six months, we request the Government as well as SEBI to remove Soybean as a commodity from NCDEX as these speculations have huge potential to disturb the poultry sector or maximizing the margins for trade under soya commodity".

- C . Vasanthkumar, President, Poultry Farmers & Breeders Association (Maharashtra)



Coutesy: NECC

A Surgical Strike on Bacteria

eXolution Bacterphage F

For millions of years, bacteriophages have been hunting down and killing bacteria. **eXolution Bacterphage F** uses a cocktail of these ancient killers to purge disease-causing bacteria in a formulation created specifically for use in poultry.

Each bacteriophage is a virus that has evolved to target and eliminate only a specific bacteria; leaving other beneficial bacteria completely unharmed.

This natural surgical strike on disease-causing bacteria is the safest, non-toxic, and **effective prophylactic alternative to antibiotic growth promoters.**

FOR USE IN BROILERS, LAYERS & BREEDERS

BENEFITS TO THE FLOCK

Natural:
No Toxins, No Residues, No Side-effects, No Withdrawal Time

Surgical:
Targets and eliminates specific bacteria, even those resistant to antibiotics

Protective:
Maintains gut bio-balance by retaining beneficial bacteria

Probiotic:
Enriched with Bacillus Subtillis

Flexible:
Compatible with all Performance Enhancers, Growth Promoters, Acidifiers, Anti-Oxidants, Minerals & Enzymes

Stable:
Thermostable and suitable for Pelleting

BACTERIA IT CONTROLS

Salmonella
Typhimurium, Gallinarum, Choleraesuis, Derby, Dublin, Enteritidis, Pullorum

E. Coli
F4 (K88), F5 (K99) , F6 (987P), F18, F41

Clostridium Perfringens
Type A, C, B, D, E

Staphylococcus Aureus

Alura™
Animal Health & Nutrition

sapience

Imported & distributed by:
Sapience Agribusiness Consulting LLP
sales@sapienceagri.com
+91 97403 99994

Allow poultry industry to import soyameal: Solvent extractors body

Mangaluru, 22 July 2021: The Solvent Extractors' Association of India (SEA) has asked the government to allow the import of soyabean meal to help the domestic poultry industry.

In a letter to the members of SEA on Wednesday, Atul Chaturvedi, President of SEAdia, said the oilseed crushing and poultry sector have a symbiotic relationship and one cannot survive without the other.

Terming the rise in soyabean meal prices from around ₹36,000 a tonne in November to ₹71,000 a tonne in July as "crazy", he said it was driving poultry farmers to the wall. "Whether this increase in values is due to speculative activity on the commodity exchanges or a reflection of demand-supply mismatch is only a matter of conjecture," he said.

To overcome this situation faced by the poultry industry and at the behest SEA members, the association has sent a memorandum to Piyush Goel, Union Minster of Commerce, and Parshottam Rupala, Union Minister for Fisheries, Animal Husbandry and Dairying, suggesting they allow the import of soyabean meal, including soyabean meal derived from genetically modified beans, which is available in plenty in the world market at less than half price.

He said it does not pose a quarantine issue for a short period up to September 30 to cool down the prices in the domestic market, and to support the poultry industry to survive through this crisis period.

Edible oils

On the edible oils front, he said the industry witnessed huge demand destruction during May and June. "Some even feel that the drop in edible oils consumption was as high as 30 per cent in these months," he said, adding July has come with better tidings and demand seems to be coming back in the sector. He said all fears of structural damage to demand now are appearing premature.

Stating that the festival season is round the corner, he said the demand should continue to be robust along with prices. With almost 70 per cent dependence on the world for edible oils, the options with policy makers to counter edible oil inflationary pressure are limited. "We can only hope and pray that this wake-up call will shake up the policy makers, and the much talked about and long-delayed National Mission on Oilseeds would finally see the light of the day," he said, a report published in The Hindu Business Line.

Now, Consumers want ready-to-eat health foods

19 July 2021: The concept of 'convenience food' has been popular in the West for long. Owing to the effect of globalisation perhaps, the food habits of Indians have been changing.

The busy lifestyles of the millennial workforce, spike in gross family income, and the concept of nuclear families gaining ground have contributed to the Indian ready-to-eat (RTE) food segment rising significantly in recent years. The Covid-19 pandemic and the ensuing work-life changes have also provided a boost to this segment.

The 'India Ready-To-Cook Market Outlook, 2021' indicates that the market for the RTE segment has grown at a CAGR of 15 - 20 per cent in the last five years. According to Research & Markets, the Indian RTE market stood at $ 261 million in 2017 and is projected to grow at a CAGR of around 16 per cent during 2018 - 2023 to touch $ 647 million by 2023.

A recent survey by Assocham shows that about 79 per cent of Indian households today prefer to have instant food due to time constraints.

Here are some of the reasons why consumers now want a quick bite: working people don't get enough time to cook proper meals; RTE food is safe for consumption as compared to outside food; RTE frozen fruits and vegetables can be carried to any place; and RTE food is comparatively affordable.

No doubt that the market for 'convenience food' has grown immensely, but consumers and health experts have been apprehensive about its health impact.

The surge in demand for healthy foods has spawned an entire segment of packaged food items that include immunity boosting foods, healthy whole grains, seeds and nuts. A number of brands have made conscious efforts to accommodate millets in their offerings. Special attention is also given to gluten-free food items.

Interestingly, innovation is today happening on the packaging front that allows for reduction in use of preservatives in ready-to-eat foods.

The writer is Chief Marketing Officer, Conscious Food.

Barrix®
One for everyone

HOUSEFLY PROBLEM?

Houseflies spreads 60 different diseases in birds of poultry farms.
They face maximum threat from houseflies.
Barrix innovated unique, patented, scientifically designed, chemical free pheromone trap to control houseflies.

ADITI
NPOP/NAB/0017

ADVANTAGES:

- ☑ No Pesticide Required
- ☑ No Anti Biotics Required
- ☑ No Electricity Required
- ☑ No UV Light Required

RECOMMENDED TO USE:

- ☑ Sheep Farm
- ☑ Piggery
- ☑ Stables
- ☑ Cow Sheds
- ☑ Fishery
- ☑ Food Processing
- ☑ Meat Shop
- ☑ Hotels
- ☑ Sweet Shops
- ☑ Hospitals etc.,

CERTIFICATIONS AND ACCREDITATION:

- Organic certification under NPOP standards, Govt. of India.
- Tested this product and certified by central poultry development organisation, Dept of Animal Husbandry, Dairying and fisheries, Ministry of Agriculture.
- Certified and recommended by dept. of Animal Husbandry and Veterinary services, Govt. of Karnataka.

PATENTED

Use 2 Traps per Shed

BARRIX CATCH®
Domo Trap & Lures for Housefly

Manufactured and Marketed by:
Barrix Agro Sciences Pvt. Ltd.
#68A, 6th Main, 3rd Phase, Peenya, Bengaluru - 560 058 customercare@barrix.in | +91 9 900 800 033 | +91 98863 33607 | www.barrix.in

Managing the Modern Broiler Breeders: *Challenges and Opportunities*

Dr Raina Raj, *Head of Marketing, Natural Remedies Pvt Ltd*

Natural is future 2.0 is a webinar series powered by Natural Remedies Pvt Ltd, Where we invite eminent speakers across the globe to share their thoughts on the most relevant topics of the animal health industry. In June, we invited Mr Peter Chrystal, a world-renowned expert in poultry nutrition. He has about forty years of experience in the field of both broiler and broiler breeder nutrition. His discussion was aimed at providing hands-on practical perspectives in the management of modern broiler breeders, how to overcome challenges, and to take up opportunities to help the poultry farming community.

Mr Peter Chrystal started his talk by pointing to the fact, how the physiology of the broiler birds has changed over the past 60 years. The modern broilers are a product of genetic selection for the desired traits of rapid growth with a low-fat deposition. Unfortunately, this is the opposite of what is desired in a broiler breeder and hence the challenges going forward. To tackle the faster growth rate broiler breeders need to be on increased feed restriction, and second, body fat deposition, which is essential for breeder birds, has gone down drastically over the years; this creates problems when birds are at peak production. He emphasized the two critical stages during the rearing of broiler breeders. First, at nine weeks, which is important for skeletal development, and the second at post-light-up, where it is important to ensure that the females have enough fat pad. Since approximately 20% of the peak, egg laid number is mobilized from the body fat whereas 80% comes from the lipids in the feed. If the bird goes to full peak and doesn't have enough reserves, it will be unable to perform well at peak. Bringing the focus to lighting he mentioned that breeders are **photorefractory,** that is to say, they don't respond to light until such time that they are mature enough to respond. Hence, during rearing, one either should decline the light or keep the day length constant before light stimulation. This presents challenges, particularly if birds are reared in open-sided houses.

BIRDS DO NOT SEE LIGHT IN LUX, BUT CLUX OR GALLI-LUX.

The Mechanism of light stimulation- in the birds there is mostly hypothalamic stimulation rather than retinal stimulation. The birds do not see light in Lux but Clux or Galli-Lux. The hypothalamus is stimulated, which secretes the luteinizing hormone-releasing (LHR) hormone that stimulates the anterior pituitary gland to release luteinizing hormone (LH), which helps the growth of the follicles. The feedback mechanism of progesterone goes back to the hypothalamus. These rapid changes in the hormone levels are a stressful event, we should keep in mind that the birds are already on feed restriction too. He suggests that farm management must consider boosting vitamins such as α-tocopherol, herbal extract with antioxidant properties, carotenoids; phytogenic compounds that are anti-bacterial and improve gut health, so that they may stimulate feed intake, and also promote follicular development.

Peter Chrystal

Managing ovarian function

Talking about managing ovarian function he mentioned the importance of critical balance between too many follicles or not enough follicles. Ideally, in a breeder bird autopsy, 5 – 7 large follicles must be seen while the small follicles should be numerous. With too many large follicles, birds will be at excellent peak production but with poor persistence, the causes could be that layers are over-feeding at the onset of lay or possibly improper light stimulation. With insufficient follicles, birds would get to normal peak production but with poor persistence. This is caused due to inadequate light stimulation, a higher incidence of atresia, or a normal decline in follicle number with age.

Photo-stimulation

He emphasized the importance of light-proof housing in other words light controlled housing in broiler breeders and the importance of sudden transition in light duration at

21st week. He explained in detail the effect of light stimulation and the drawbacks of some housing systems.

Practical feeding of breeders

According to him, birds with very little energy will go into negative energy balance; they will lose weight, production, and fertility. Whereas too much energy would lead to a high-fat deposition, causing oviduct problems, and can impact fertility (poor mating success).

He explained the relative energy demand of the birds with reference to age and development of the oviduct and growth of the birds. He showed the importance of maintaining a proper protein-to-energy ratio at different stages of growth and production by comparing results from different scientific publications. He addressed several participant queries as below.

How does debeaking affect production in breeders?

He spoke from his experience and mentioned that if debeaking is performed properly without damaging the tongue, it does not affect the production at all. They routinely use infra-red treatment and they don't see any impact on the production, but if the birds are stressed during the debeaking process or the debeaking itself is not performed well, it may have an impact on feeding and in turn the performance. He also pointed out that the age when debeaking is performed is important if debeaking is performed on day-old birds with the infrared method, rarely much impact is seen, while a hot blade cut might create problems when not performed well.

What is the role of body weight and feed intake after photo stimulation on ovarian function, at the first egg in broiler breeder females?

According to him, every flock is different. If the flock is underweight and not ready for sexual maturity and photo-stimulation, there would be a problem if we tried to peak feed it. If the flock is mature and ready to be photo-stimulated, one can go to peak feed and wouldn't face any problems since she'll respond amicably. Overfeeding when the flock is not ready for it then one would see prolapse, double yolks even in pullets. It all depends on whether the bird is ready for stimulation of feed and it is a hard question to answer since each flock is very different.

Do you recommend the usage of non-starch polysaccharide (NSP) enzymes or protease enzymes in the broiler breeder diet? If so, is it a growing trend?

He mentioned that he would use an NSP enzyme, the reason being if one is using rice bran or wheat bran in their diet, it evens out the energy of the grain. But it probably has less effect on maize and wheat-based diets. He also suggested the use of a phytase as a single dose, but not a protease.

What is the solution to control multiple ovulations in broiler breeders, apart from feed restriction?

He opined that there isn't another solution, apart from feed restriction. But he says that there are 2 problems with open-sided houses, during long day length birds would have been over-stimulated, so the only choice one has got is to hold back on the feed. The only other answer would be to go for light-tight housing. If one can't control the light the only other thing that can be controlled is feed.

How can we prevent oviduct prolapse and egg yolk peritonitis? Are there any predisposing factors to be kept in mind?

He had a clear answer that forced light stimulation before sexual maturity is the reason for prolapse.

Rectal prolapse is seen as early as 4 weeks of age; the role of light might not have a reason in this situation.

He suggested that the dietary fibre is probably high in these cases, hence restricting a maximum of 2.5% - 3% crude fibre, especially in the first 5 weeks, would help avoid rectal prolapse.

How do we manage low bodyweight birds to increase their weight to become good layers?

He suggested that a three-way grading must be performed. In the first grading at 4th week the chicks with low body weight should be separated and fed extra, to bring the body weight in line. By the 9th week when the second grading happens, the small birds must be able to get back to the average weight. He opines that in practice reducing weight in heavier birds poses a bigger problem rather than weight gain for lighter birds.

How much should be the maximum bodyweight that we can be permitted above the standard in laying birds that don't affect production? Is there an upper cap?

According to his experience and a recent scientific article about 150-200 g above the standard has not shown any problems with egg production, except one could expect larger-sized eggs early on.

In the breeders on the onset of lay, we notice calcium tetany cases, what is your opinion?

He points out that he doesn't believe in feeding a pre-layer diet. But sometimes the farms start feeding a layer diet weeks before the birds are due to lay their first egg. If high levels of calcium are being fed even 1.5% in a typical pre-layer is far too much. He recommends keeping the calcium low, and when the birds go on to lay (about a week before) only then should the birds be shifted on to a layer ration. It is unlikely to notice calcium tetany if this is followed.

How to reduce leg weakness and cage layer fatigue in broiler breeder females? Can we limit the lighting duration to 14 h a day in open-sided sheds as a remedy for this?

According to Mr Peter Chrystal, leg weakness is not directly related to the length of light. Two-phase layer diet; bring the available phosphorus down as bird's age and calcium levels must go up. Excess calcium may create more problems than it solves. One

shouldn't see any issues even with a 16 h day length provided that the dietary calcium and available phosphorus are provided correctly. Calcium levels must be going from 3.8 - 3.9% up to 4.3% at finishing whereas the available phosphorus should be going down from 0.45% to as low as 0.35% at the tail-end and these issues may not occur from a calcium-phosphorus point of view.

Mycoplasma infection is there any chemical or salt that can be used in breeders to control this.

He suggests that Macrolide drugs at low doses could be used. But there is resistance to using these drugs in Australia and hence they have been using phytogenic compounds, to boost the bird's immunity to fight the disease.

Could you shed some light on the usage of potassium carbonate in the breeder layer diet?

Mr Peter Chrystal suggested that he has used potassium carbonate on and off when they have encountered sudden death syndrome associated with low potassium levels. He recommends that in a hot humid climate there is a need to ensure enough potassium, especially if the diet has low Soya, which is rich in potassium. About 0.6 - 0.8% potassium should be maintained, no harm supplementing it.

Is there a particular recommended feeding time for broiler breeders?

Ideally, farms could feed the birds twice a day, one in the early morning and another in the afternoon with high calcium. He says he hasn't seen any difference in the performance of the birds if they were fed before or after lights-on, it is a pattern that the birds get used to. But what is more important is for the manager to be present when the birds are feeding. But he recommends that feeders be charged before lights, in the dark so that the noise doesn't get the birds excited.

In a particular case, about 80% of birds showed typical T-2 Mycotoxin lesions such as oral ulcers, tongue necrosis, but feed samples tested negative for T-2 toxin. Is there any other reason that this may be happening?

He suggests that the T-2 toxins are powerful; they may occur in pockets in the feed. Sometimes sampling out of a big batch may not be easy and T-2 mycotoxins might not show up in the test analysis. However, the birds are the best indicators of the existence of these mycotoxins. Mycotoxins also conjugate, and hence may show negative results when feed is analysed. But if the birds are showing lesions on the tongue and mouth it is possible that the T-2 toxin is present, and one must treat it with a targeted toxin binder in such cases.

Is excess fat in the grower and pre-layer diet good for peak production?

Birds deposit one-third of the fat that it ingests as body lipid. This is a rule of metabolism. It helps have some fat in the diet, but not so much that we are overfeeding energy. He suggests around 7.5 - 10L per ton, about 1% added fat, not any more than that.

For supplementing dietary electrolyte balance is it better to use sodium formate instead of Sodium bicarbonate?

He recommends sodium bicarbonate is better, bicarbonate ions are needed in the diet. Sodium formate is a salt of an organic acid so it dissociates easily.

Breeders are fed phase-wise; will delay in the transition from one phase to another affect the production?

Mr Peter Chrystal answers from his experience that breeder birds don't like to change, any big changes can lead to performance losses. He prefers to keep an early lay to a late lay diet excluding a mid-lay diet. Keeping the diets similar is important. What he recommends is to keep the energy identical, minor acid profile identical, reducing crude protein in the second phase, changing the calcium and available phosphorus. The diets must fit very closely together, birds don't realize that they have been moved from one diet to another, and there will be no upsets. It is generally a good practice to bring in the new diet while you still have old feed below, and if the phasing happens over ten days it is ideal since it is the amount of time it takes for the follicles to develop fully, by which time she is used to the phase over.

Commercial Poultry Management During Rainy Season

prajaktapurandare77@gmail.com

Dr Akshay Mote, Dr Sunil Nadgauda & Dr Sandeep Gavali.

The Indian poultry sector is one of the most vibrant, fastest growing, agro-based, techno-commercial industry. There are several constraints affecting growth of the poultry industry, among which temperature associated environmental challenges (hot and cold climate, heavy rainfall) imposes severe stress on birds and leads to reduced performance. Thermal discomfort may result in improper expression of genetic potential in birds (Kataria et al., 2008) and production performance of broiler chicken are greatly affected due to adverse environmental conditions. At present, climatic variation is a key threat for poultry industry, especially for marginal poultry farmers in open-house systems (Osti et al., 2017).

In India during rainy season there is increase in the relative humidity and a reduction in temperature; rainfall affects both the quality and quantity of feeding, while wind speed has an impact on the outbreak of diseases.

With the arrival of monsoon, farmer needs to give a little bit more attention towards his crops along with the livestock and poultry. Monsoon comes as a challenging season for poultry farmers which could be very tormenting. As rainy and cold season brings changes in temperature and weather conditions, it leaves a deep impact on the poultry farm. Hence, as a poultry farmer, it is very important to learn how to operate poultry farm during rainy season.

Poultry birds and poultry production are generally affected by seasonal climatic or weather changes. For instance, in the wet or cold season bird eat more feed, drink less water and huddle together to generate heat and keep them warm. On the other hand, chickens and other livestock birds consume less feed and drink more water in the hot season or weather in order to cool their body. These changes affect the production of birds, especially laying birds, as the egg production is reduced in extremely cold or hot weather. This reduction in egg production occurs because when there are extreme cold or hot conditions, these birds are stressed, and their ability to withstand diseases or immune system is seriously affected.

Managemental Practices During Rainy Season

- It is always better to repair the poultry sheds before the arrival of the rainy season and clear the drainage ditch around the shed.
- When it rains, close the doors and windows or let the curtains close to prevent rain from entering the shed thereby helps to prevent the chickens from getting cold or other problems.
- Poultry farmer should reserve enough dry litter material. Regular raking of the litter material helps to keep it dry. The wet agglomerated litter material should be removed out of the shed to reduce the ammonia concentration in the house.
- Preventthe feed ingredients from getting wet, and the amount of feed should not be too much. The compound feed in the house should be placed on the platform above the ground to prevent the feed from regaining moisture and mildew.
- In rainy season, the humidity in the poultry shed is increased and also there are more chances that litter get wet, feed is mildewed, and sometimes water get contaminated with pathogens which may lead to coccidiosis, E. coli outbreak, and elevated ammonia concentration.
- Birds usually increase their level of feed intake to generate heat and stay warm during rainy season. However, for a farmer increasing the level of feed raises the cost of production besides wastage of nutrients that

are not needed for heat generation. To reduce costs and avoid wastage, energy rich sources like oil should be added to the feed or level of other nutrients may be reduced keeping the energy at same level.

- Provide warm water periodically during rainy season to encourage feed consumption and help them keep warm without using up energy.
- Poultry shed should be designed in such a way that it provides all the comfort required by birds during rainy season while considering ventilation as well.
- In regions where it rains heavily, the floor should be raised with a generous roof overhang, particularly over the entrance.
- The raised floor can be a solid platform to prevent floods. Orientation of a building with respect to wind and sun consequently influence temperature and light on different external surfaces. With better management, your flock will remain healthy and productive throughout the rainy season.
- During rainy season birds need to be warm, especially chicks that haven't been able to control their body temperature.
- In rainy season, the water can cause trouble in bird's health as the water from the rain might bring many worms and parasites. So, during rainy season it is important to give dewormers to avoid infection from intestinal worms.
- Rainy season leads to the immunosuppression, and birds can get easily infected by bacteria and viruses.
- Mosquitoes and other blood-sucking insects that multiply well during this season, thus can increase the possibility of transmitting viruses to chicken.
- Instead of waiting your birds to get sick and treat them, you can avoid the disease outbreak by vaccinating before monsoon.

Role of Isoleucine as a member of branched chain Amino Acids in Poultry

Dr Preeti Puspa Mohanty, Technical Marketing Manager, CJ BIO
preeti.mohanty@cj.net

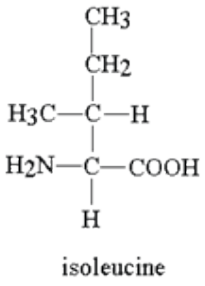
Highlight Points

To address the present environmental pollution and for optimization of feed cost in poultry diet, lowering the crude protein level is a trend in poultry industry. Isoleucine plays vital role in maintaining the amino acid balance in a low crude protein diet. Isoleucine when added with other amino acids supports economical feed formulation in a low crude protein diet maintaining the performance.

Introduction

In the present scenario of rising concern over the environmental issues, to reduce the nitrogen emission and to minimize the feed cost in the feed industry, lowering crude protein level with the addition of synthetic amino acids is the standard practice. In practical ration formulation a deficit of first-limiting amino acids can be prevented by supplying these amino acids in their free form particularly

methionine, lysine, threonine, valine, arginine, and isoleucine (Ile). A progressive reduction of the dietary protein content can, however, lead to a situation where other amino acids, which are of no special concern in diets with normal protein levels, become limiting for performance. Isoleucine is considered as the fifth limiting amino acid in corn-soybean based diets and also can be a co-limiting amino acid together with valine in broilers diets when animal by products comprises 3% or more in the diet (Corzo*et al.*, 2010).



isoleucine

Isoleucine metabolism

Isoleucine is a branched chain amino acid (BCAA) and along with valine and leucine are essential amino acids. Although most of amino acids are catabolized in the liver, BCAAs are initially catabolized in skeletal muscle into BCKA (branched chain keto acid) with the involvement of branched-chain aminotransferase (BCAT) (leucine to α-keto isocaproate, valine to α-keto isovalerate, and isoleucine to α-keto-β-methyl-valerate). BCKA will be decarboxylated by branched-chain α-ketoacid dehydrogenase (BCKD) in the liver. Finally, these BCAA metabolites are catabolized by a series of enzymatic reactions to final-products (acetyl-CoA from leucine, succinyl-CoA from valine, and both acetyl-CoA and succinyl-CoA from isoleucine), which enter the TCA cycle (Fig 1).

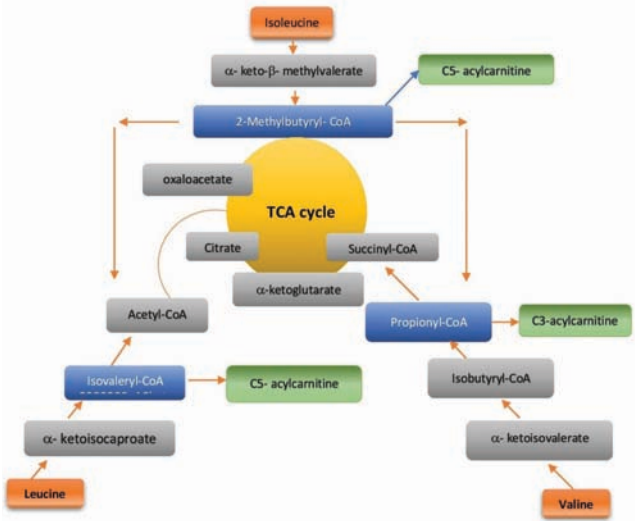


Fig 1. Pathway of branched chain amino acid catabolism (Zhang et al., 2017)

Isoleucine requirement

The ideal ratio of Ile to Lys (dIle:dLys) for optimum growth performance and breast meat yield in broilers is considered as 67 (Kidd *et al.*, 2004). The NRC has increased its Ile recommendation for commercial layers to 650 mg/d per hen (NRC, 1994) from 550 mg/d per hen (NRC, 1984). For brown egg layers, NRC (1994) has recommended 715 mg isoleucine daily on 110 g of feed per hen. Harms and Russell (2000) suggested a daily requirement of Ile at 601 mg/d for a daily egg mass of 53g. The recommended dietary intake of dIle is 79% of lysine for single- comb white leghorn laying hens as per CVB (1996) (Table 2) The Ile requirements of turkeys and ducks are mentioned in Table 3.

Source	Ross (2015)		Cobb (2012)	
Age (Days)	1-10	31-40	1-10	23-42
Ile	*67*	*69*	-	-
Lys	100	100	100	100
Met	40	42	38	41
Met+Cys	74	78	74	78
Thr	67	67	65	68
Val	75	78	75	77
Arg	103	105	105	108
Leu	110	110	-	-
Trp	16	16	16	18

Table 1. Ideal digestible amino acid profiles for broiler chickens expressed as percentage of lysine.

Amino acid	NRC (1994)[2]	CVB (1996)[3]	Coon and Zhang (1999)[4]	Lesson and Summer (2005)[5]	Rostagno (2005)[6]	Bregendahl*et al.* (2008)[7]
Ile	*94*	*79*	*86*	*79*	*83*	*79*
Lys	100	100	100	100	100	100
Arg	101	-	130	103	100	-[8]
Met	43	50	49	51	50	47
Met +Cys	84	93	81	88	91	94
Thr	68	66	73	80	66	77
Trp	23	19	20	21	23	22
Val	101	86	102	89	90	93

Table 2. Ideal amino acid profiles for single-comb white leghorn laying hens[1]

[1]Amino acid requirements expressed as a percentage of the requirement or recommendation for lysine. [2]Calculated from total amino acid requirements. [3]Calculated from digestible amino acid recommendations. [4]Based on digestible amino acid requirements. [5]Calculated from total amino acid recommendations for 32-to-45-week-old laying hens. [6]Digestible amino acid basis. [7]Based on true digestible amino acid requirements for maximal egg mass in 28-to-34-week-old laying hens. [8]The arginine:lysine ratio was estimated to be 107 or less.

	Growing Turkeys (Males)						Breeders	Laying hens
Weeks	0-4	4-8	8-12	12-16	16-20	20-24		
Ile	*1.1*	*1.0*	*0.8*	*0.6*	*0.5*	*0.45*	*0.4*	*0.5*
	White Pekin Ducks						Breeders	
Weeks	0-2			2-7				
Ile	*0.63*			*0.46*			*0.38*	

Table 3. Isoleucine requirement of Turkeys and White Pekin Ducks (%) (90% DM) NRC (1994)

Isoleucine content in raw materials

The approximate isoleucine (%) in the common feed ingredients is given in Table 4.

Ingredients (As fed basis)	Isoleucine %	
	Total %	Digestible %
Barley	0.42	0.34
Canola meal (38%)	1.51	1.25
Corn	0.29	0.26
Corn gluten meal	2.30	2.19
Cotton seed meal, mech extracted	1.31	0.93
Cotton seed meal, direct solv.	1.33	0.95

Fish meal, white	3.00	2.55
Flax seed	0.95	0.81
Linseed meal flax, expeller	1.70	1.49
Linseed meal flax, solvent	1.80	1.58
Meat bone meal	1.70	1.41
Millet, pearl grain	0.52	0.46
Oats grain	0.53	0.47
Poultry by product meal	2.10	1.79
Rice bran, unextracted	0.39	0.30
Rice grain rough	0.33	0.27
Safflower seed meal, expeller	0.28	0.22
Sorghum, milo, grain	0.60	0.53
Soybean meal, expeller	2.18	1.94
Soybean meal, solvent	2.50	2.22
Sunflower meal, expeller	2.40	2.14
Sunflower meal, solvent	1.39	1.25
Wheat, hard grain	0.69	0.61
Wheat, soft grain	0.43	0.38
Wheat bran	0.60	0.47
Wheat middlings	0.70	0.58

Table 4. Isoleucine content (%) of commonly used feed ingredients.

Amino acid digestibility expressed as standardized ileal digestibility. Amino acid values are standardized for 88% dry matter (Source: Hy- Line. W-36 commercial layer management guide).

Beyond Performance Roles of Isoleucine

Immunity

Immune cells oxidize BCAA as fuel sources and incorporate BCAA as the precursors for the synthesis of new immune cells, effector molecules, and protective molecules. Lack of BCAA in diet impairs many aspects of immune function and increases susceptibility to pathogens (Zhang *et al.*, 2017).

Isoleucine and leucine contribute to immunity through the mammalian target of rapamycin (mTOR) signalling pathway. mTOR plays a vital role in the regulation of innate and adaptive immune responses and also various immune functions like promoting differentiation, activation and function in T-cells, B-cells and antigen presenting cells (Soliman, 2013). Isoleucine level also have a strong correlation with the excretion of β-defensin. Deficiencies of BCAA (leucine, isoleucine, valine) cause involution of the thymus (Konashi*et al.*, 2000). Isoleucine could become marginal and its limitation could impair the immune function responses when hens are fed low protein diets (Konashi*et al.*, 2000).

Glucose transportation

The function of isoleucine in enhancing glucose uptake and muscular glucose transporter expression (GLUT1 and GLUT4) was also demonstrated in C2C12 myotubes (Zhang *et al.*, 2017). GLUT1 and GLUT4 are vital glucose transporters in muscle. Similarly, SGLT1 and GLUT2 are important glucose transporters in the small intestine. Isoleucine could potentially increase muscle growth and intestinal development and health by up-regulating the protein expression of GLUT1 and GLUT4 in muscle and enhancing the expression of SGLT1 and GLUT2 in the small intestine (Fig 2).

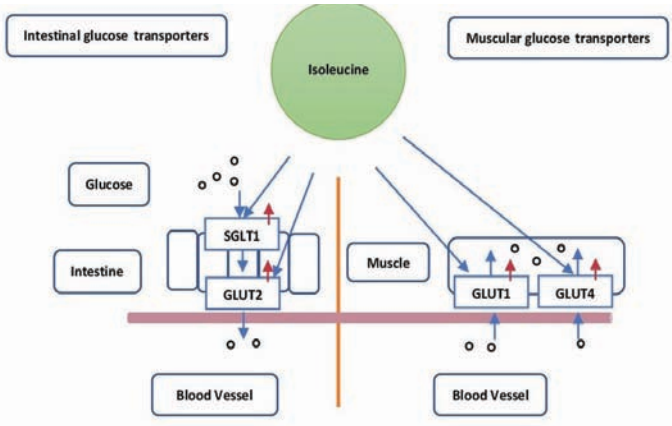


Fig 2. Isoleucine up-regulates intestinal and muscular transporters (Zhang et al., 2017)

Feed consumption

The mTOR signalling pathway plays a vital role in the brain to detect nutrient availability and regulate energy balance (Cota *et al.*, 2006). As isoleucine is also associated with mTOR signalling so low level of isoleucine can cause reduced feed intake.

BCAA deficient diet dramatically reduces feed intake by activating the GCN2 signalling pathway, which might participate in lipolysis (down-regulating lipogenesis genes or up-regulating lipolysis genes) in the liver and adipose tissue.

Conclusion

Lowering the crude protein level in poultry diet is a trend in poultry industry to address the current environmental pollution and for optimization of feed cost and isoleucine plays vital role in maintaining the amino acid balance in a low crude protein diet. Again, isoleucine along with valine and leucine also have positive influence on nutrient metabolism as well as immunity and gut health which can be focused further to have a clear impression.

***More References can be provided on request.**

Team Agrotech

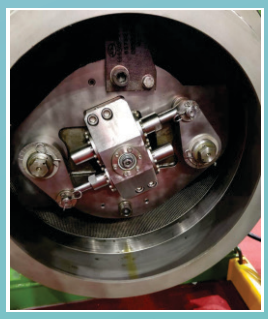
YOUR STEPPING STONES IN SUCCESS!!

TEAM AGROTECH PVT LTD

Country Representative of
CPM ASIA

Your Single Stop Source for

CPM Pellet Mill



CPM Lineator

Complete Project management of Turnkey Solutions in the following areas:

- Integrated Feed plants for Poultry, Floating Fish, Sinking Fish, Shrimps, Cattle etc.
- Balance of plant equipments for Pre/Post processing
- Complete Plant Automation Solution, on GATE In to GATE Out concept.
- Environmental Controlled Sheds for Large Scale Poultry
- In-house design and manufacturing of Pre Fabricated steel structures for Plants, Warehouses, Grain Storage Silos etc.

CPM Lineator Technology: Remotely Control the distance between roll and die surface, even when the pellet mill is on. This technology provides swift, accurate and safe roll adjustment, with no downtime , so no production loss.

Contact Today:

Team Agrotech Pvt Ltd
1-4, 249, Hill Road, Gandhi Nagar,
Nagpur, Maharashtra - 440 010, India
Email - info@teamagrotech.com; www.teamagrotech.com
Call Us - +91 - 96505 59095

For Queries Contact

Scan me

MANAGEMENT OF POULTRY DURING RAINY SEASON

venugopal.adigonda@shgroup.in

Team Hy-line International

India receives 75 – 80% of its annual rainfall via southwestern monsoons, lasting from June through September. Monsoon season typically begins in the state of Kerala and slowly progress across India, reaching the far north by mid to end of June. High heat, high humidity, extensive clouding, and several spells of moderate to heavy rain with strong surface winds are the chief characteristics of monsoon season. There is a significant fall in temperature at the commencement of the rainy season (3–6°C); however, a subsequent rise in temperature whenever there is break in the monsoons and rain does not occur for several days. This rise in temperature is associated with high humidity, which causes significant risk of severe heat stress, especially at the start of the season and between monsoon breaks.

Month	Weather Conditions	Heat Stress
June	High humidity, high temperature	Heat stress due to high humidity
July	High humidity, slight decrease in temperature	Heat stress due to high humidity
August	High humidity, moderate temperature	Monsoon breaks bring heat stress
September	High humidity, moderate temperature	Monsoon breaks bring heat stress

Monsoon conditions favor replication, growth, and spread of pathogens such as viruses, bacteria, and fungi, as well as vectors like flies, mosquitoes, and other vermin.

Most common disease outbreaks during rainy season:

Viral Diseases	Bacterial Diseases	Others
Fowl pox	Salmonellosis	Mycotoxicosis
Gumboro	E. coli infection	Coccidiosis
Newcastle	Fowl cholera	Round and tape-worm infestation
Avian Influenza	Chronic respiratory disease complex	
	Gangrenous dermatitis	
	Clostridial enteritis	
	Infectious coryza	

Highlight Points

- Indian rainy season plays a crucial role in Indian agriculture and it lasts from June through September months.
- High heat, high humidity, extensive clouding, and several spells of moderate to heavy rain with strong surface winds are the chief characteristics of monsoon season. During the season flock performance affected due to high humidity, decreased brightness of sun light and increased day length.
- Monsoon conditions also favour replication, growth and spread of pathogens such as viruses, bacteria and fungi, as well as vectors like flies, mosquitoes and other vermin.
- It is very important to prepare for monsoon season and minimise the negative effects by implementing and adopting better management practices which discussed in this article.

Key Management Practices for the Rainy Season:

- Check for and repair any leaks in the roof or walls.
- Prepare side curtains to keep rain from entering the shed. Take special precautions to protect the feeder from rainfall due to high wind gusts.
- Ensure drainage systems are working properly before the rainy season to allow for proper run off rainwater. Water stagnation near sheds creates a breeding ground for vectors.
- Brooding chicks in winter is always a challenge. Rainwater splashing inside and high humidity with poor ventilation can increase the ammonia level inside the shed. Moreover, as coal used for brooding is detrimental to young chicks, keep the side curtains closed tightly to avoid rainwater entering the shed. Allow a 1 – 2 foot opening at the top of side curtains during the day to ventilate ammonia and other undesirable gases out.

Fig 1: Brooding shed with curtains

- Wet litter is the main challenge during rainy season. The main causes for wet manure are the birds (infectious/ nutritional), as well as direct water entering onto manure either by leaky nipples or rainwater splash. Once the litter moisture exceeds 250g/kg, its cushioning, insulating, and water holding capacity is compromised and manure becomes wet. Replace any leaking nipples to avoid wet manure. Rainwater entering the manure pit should be strictly controlled or entirely prevented. High moisture levels in the manure allow for germination of spores, multiplication of vectors (flies, insects), and promote other pathogen growth. Contaminated rainwater may contaminate bore wells and nearby water bodies.

Figure 2. Bottom mesh and side curtains.

- Due to the change from hot and humid weather at the beginning of winter, birds can feel heat stress; double-check the water flow at the nipple and ensure a minimum 60 ml/minute for birds under heat stress.
- Larva control is the key to fly control during the rainy season (for more information, see Fly Management: Surveillance and Control at hyline.com). Wet manure is the perfect environment for larva multiplication. Larvicides can be used to great effect in conjunction with preventive measures to keep manure dry.
- Wet manure with larva in absence of a bottom mesh will attract wild birds. Utilizing a bottom mesh wall prevents entry of wild birds, which will have close contact with the flock. Preventing wild bird contact prevents potential disease outbreaks such as bird flu.
- Feed ingredients should be kept in waterproof conditions. Increases in moisture level increase the risk of some mycotoxin contaminations in feed. Waterproof conditions of the feed mill, feed bin, and feeders inside the shed should be ensured. Feed and feed ingredients should be stored on slats to avoid direct contact with surfaces.
- High relative humidity, direct exposure of the feeder to rainwater, and caking of feed in the feeder can lead to the formation of some mycotoxins, which negatively impacts the flock. Remove old and caked feed from the feeder regularly. Regular complete cleaning of the feeder is recommended. Avoid leaving excess feed in the feeder.
- Inclusion of toxin binders in the feed is highly recommended, especially during this season, as the environmental conditions will favor mycotoxin contamination.
- Water quality can be easily affected during rainy season especially surface water. Chances of E. coli outbreaks are higher during high temperature and humidity, as bacteria and other germs can multiply quickly, leading to increased infections in chickens. Contaminated water sources can also cause outbreaks, so it is essential to maintain regular water sanitation. Clean pipelines thoroughly, as this will help in reducing the biofilm levels inside the line, which are a source of contamination.
- High relative humidity and temperatures, especially between June and August, can cause high mortality due to heat stress. This condition is primarily associated with the lack of adequate air speed. Use enough fans to ensure the shed is well ventilated, a speed of 3.5m/s is recommended for sufficient cooling. Fogger usage should be minimal during this period.
- Rodent activities increase during monsoon season as

Fig 3: A clean surrounding area for rodent control

a result of local crop growth. Increased rodent activity leads to increased transmission of disease. Strict rodent control measures should be implemented during this period and vegetation close to the poultry house and farm should be cleared regularly.

- With the rainy season comes a reduction in daylength. Flocks in the growing stage and starting production face the challenge of poor stimulation resulting in delayed onset of production. Light stimulate the flock on time; delaying the stimulation will delay the flock coming into production.
- Dirty bulbs should be cleaned as they reduce the brightness. Follow the Hy-Line recommended lighting program to prevent issues concerning delayed onset of production.
- During rainy season, due to high relative humidity, birds experiencing heat stress will decrease their intake. Careful monitoring of feed and nutrient intake is especially important during heat stress conditions and especially surrounding peak production. Remember to reformulate all nutrients according to the decreased feed intake, including the vitamins and trace minerals premix.

Figure 4. Dirty (left) and clean bulbs (right).

- Rains can affect brooding conditions, and lack of ventilation increases ammonia levels inside the shed. Monitor the shed temperature and humidity often and adjust temperatures based on chick comfort to ensure quality care for young chicks. Side curtain height can be adjusted to control ammonia buildup inside the shed.
- Pullets grown in summer and early rainy season will have low body weights and poor uniformity if they are not provided balanced feed and adequate spacing. Poorly conditioned flocks with low body weights and uniformity are likely to face delayed onset of production. Moreover, feed intake may not be adequate to support the rising nutrient needs during the production jump. It is very important provide a pre-peak diet during this period to ensure adequate nutrient intake and support production.

The key to minimizing the negative effects of the rainy season is to anticipate and implement appropriate management and nutritional measures prior to the start of the rains.

A novel combination of the Bromochloro molecules (BCDMH)

Bromo Grane™

A Dual Action Water Sanitizer

chembond®
Animal Health

- Broad spectrum water sanitizer
- Slow releasing & sustained action
- Effective at low concentration

Chembond Biosciences Limited

Works: E-6/3 & 4 Tarapur MIDC, Dist. Palghar - 401506, Maharashtra, INDIA.
Office: EL-71 Mahape MIDC, Navi Mumbai - 400 710, Maharashtra, INDIA.

Effect of Supplementing Endotoxin reducer to the Feed on the Performance of Broilers

Jesse Stoops, Dr Amit Patra and Geert Van de Mierop
Email: amit.patra@nutrex.eu

Introduction:

Endotoxins are potentially toxic compounds from bacterial origin. Once absorbed, endotoxins induce an inflammatory response, thus wasting energy and nutrients meant for growth and production. The most well-known endotoxins are lipopolysaccharides (LPS), which are a component of the cell wall of Gram-negative bacteria. In poultry, the gastrointestinal tract is the most important source of endotoxins and the main risk site where endotoxins can be transferred from the lumen into the bloodstream.

Nutrex developed a new innovative feed additive, EndoBan, by combining different strategies to reduce the leakage of endotoxins and improve animal's performance.

The aim of this trial was to investigate the effect of EndoBan on growth performance and LPS absorption in broilers undergoing an intestinal challenge.

Materials and methods:

A pen trial was conducted in which Cobb 430Y male broilers were reared in a poultry house (AgriVet, India) for 42 days. A total of 198 broilers were randomly allocated to 3 treatments (Table 1) with 6 replicates per treatment (11 birds / pen at the start of trial). For all animals, a three phase dietary program (starter d0-14, grower d15-28 and finisher d29-42) was used in which all diets were fed ad *libitum*. The composition of the dietary diets is listed in Table 2.

On day 17, birds from the challenge groups were administered with a coccidial suspension consisting of

TABLE 1: DESCRIPTON OF DIETARY TREATMENT

TREATMENT	CHALLENGE	DOSAGE
Control	-	-
Control	+	-
Control + EndoBan	+	500 g/T

Highlight Points

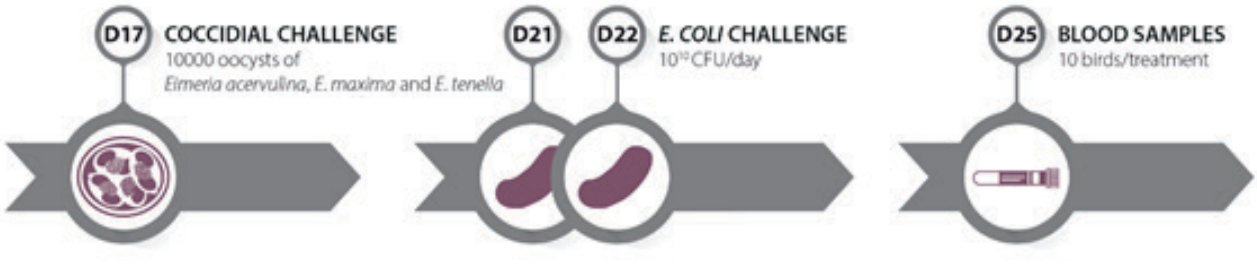
Endotoxins are potentially toxic compounds from bacterial origin. Once absorbed, endotoxins induce an inflammatory response, thus wasting energy and nutrients meant for growth and production. The most well-known endotoxins are lipopolysaccharides (LPS).

Nutrex developed a new innovative feed additive by combining different strategies to reduce the leakage of endotoxins and improve animal's performance.

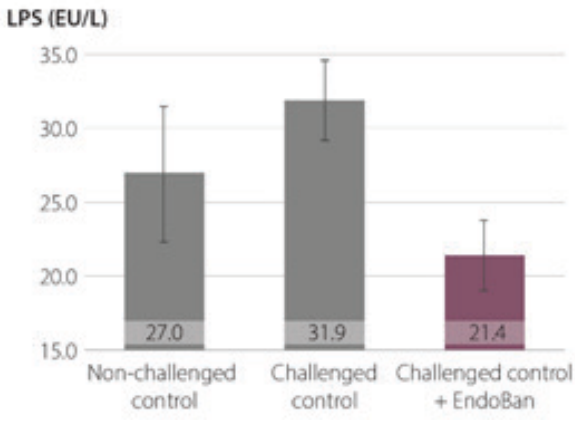
TABLE 2: NUTRIENT COMPOSITION OF THE DIET

	STARTER D1-D14	GROWER D15-D28	FINISHER D29-42
Composition (%)			
Corn	56.66	59.52	62.29
Soybean meal1	29.66	22.88	22.04
Full fat soybean	3.66	8.00	8.00
Meat-bone meal	2.50	2.50	2.50
Rape seed meal	2.50	2.45	-
Rice bran	2.00	2.00	2.00
Soybean oil	-	-	0.82
Nutrase BXP 200 TS	0.02	0.02	0.02
Nutrients (%)			
Crude protein	23.0	21.0	20.0
Lysine	1.28	1.15	1.08
Methionine	0.62	0.56	0.54
AME (kcal/kg)	2800	2900	3000

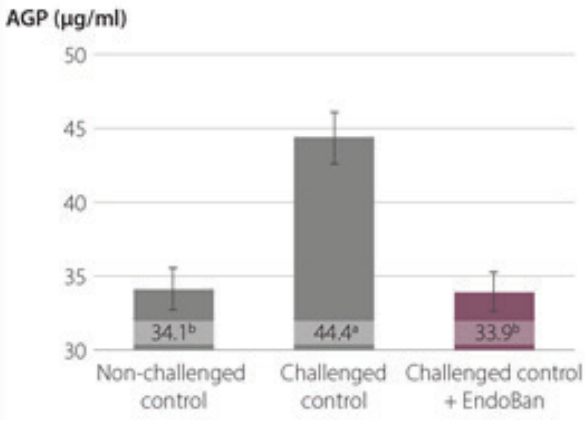
FIGURE 1: SCHEMATIC OVERVIEW OF THE INTESTINAL CHALLENGE



LPS (EU/l)



AGP (µg/ml)



10000 sporulated oocysts of E*imeriaacervulina, Eimeria maxima* and *Eimeriatenella* via oral gavage. After the coccidial treatment, a bacterial suspension consisting of E. *coli*(10^{10}cfu / bird) was given daily by oral gavage from day 21 till 22. At day 25, blood samples were taken (10 birds/ treatment) to analyze the LPS concentration and the concentration of α-1-acid glycoprotein (AGP). A schematic presentation of the protocol is shown in Figure 1. Body weight and feed intake were recorded at weekly intervals. Feed conversion was calculated from the measured weight gain and feed intake. Pen mortality was recorded to correct feed intake.

Results:

The intestinal challenge resulted in reduced animal performance. At the end of the trial (day 42), the best results were obtained for the non-challenged control group. Nevertheless, challenged birds supplemented with EndoBan could alleviate the negative effects of the challenge and had an improved BW (+ 83g) compared to the challenged control group.

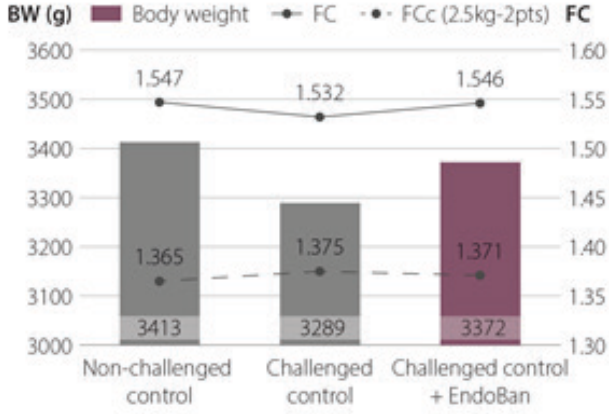
In this study, an oral coccidial and E. coli suspension were used to induce intestinal challenge. Any damage to the intestinal barrier could increase gut permeability and the translocation of endotoxins from the intestinal lumen into the bloodstream. The challenge used in this study led to a higher leakage of LPS molecules into the bloodstream and the production of acute phase proteins (e.g. AGP). Dietary supplementation of EndoBan decreased the LPS concentration in blood compared to the challenged control group and even the non-challenged control group. Moreover, birds fed the EndoBan supplemented diet had significantly ($p < 0.01$) lower serum AGP concentrations compared to the challenged control group.

CONCLUSIONS:

The intestinal challenge used in this study was efficient to cause a disturbance in the intestinal barrier leading to reduced growth performance and higher LPS absorption.

EndoBan showed improved or similar responses as the non-challenged group, indicating that EndoBan neutralizes the negative effects caused by the challenge model. Therefore, we see that EndoBan can effectively reduce the translocation of endotoxins from the lumen into the bloodstream and improve animal's performance.

PERFORMANCE DAY 1-42



The Effects of Phytogenic Feed Additives on Performance

toarvindchauhan@gmail.com

Gina Medina, L. Jungbauer and K. Wendler, Delacon Biotechnik, Steyregg, Austria and C.W. Kang, Konkuk University, Seoul, South Korea.

Highlight Points

- NATUROGEN™ 510 is a plant derived (phytogenic) feed additive for poultry.
- Increases nutrient digestibility (+ 7 % crude protein, ↑ AA, + 3 % crude fat).
- Improves gut integrity & morphology. Enhances performance in breeder, broiler & layer.
- Reduces noxious gas emission - reduction of NH3 (up to 50 %).
- Improves anti-oxidant status (↑ SOD, ↑ GSH-Px).
- Return of Investment over 3:1.

The poultry industry today faces challenges such as rising feed and production costs apart from the demand of being one major source of animal protein in response to the growing global human population in the perspective of food safety and security.

The ban on the use of in-feed antibiotics in Europe has influenced the increasing awareness of the consumers for food safety and health risk. Documented negative effects of using antibiotic growth promoters in feed triggered the continuous evaluation of in-feed natural growth promoter as an alternative. For the last 10 years, the studies on the use and benefits of natural products in the animal industry increased significantly.

Phytogenic feed additives (PFA) are products of plant-origin that includes herbs, spices, essential oils and other plant extracts. PFA are known to stimulate digestive processes and to improve gut health. Increased nutrient digestibility is reflected in better animal performance.

Different effects of PFA compounds like antioxidative properties (especially monoterpenes thymol and carvacrol, flavonoids, anthcycanes), antimicrobial actions (phenolic compounds being the prin- cipal active components), growth promoting efficacy (for example stabilising feed hygiene, by affecting the ecosystem of gastrointestinal microbes, improving digestibility) and improvement of flavour and palatability of feed are reported for broilers.

In several publications Awaad et al. (2010), Jafari et al. (2009) and Liu et al. (2010) show positive effects of plants and plant extracts on the immune response and antibody titers to NDV of broilers. The aim of the study was to determine the effects of phytogenic feed additive (Naturogen- 510) on zootechni- cal performance, immune response and nutrient digestibility in broilers.

Table 1. Zootechnical performance results.

Treatments	Day 1-35			
	ADG (g/d)	ADFI (g/d)	FCR (g/g)	Final body weight (g)
T1 (Control/ basal diet)	48.01^{bc}	91.88^{a}	1.92^{a}	1721
T2 (reduced nutrient density diet	47.56^{c}	89.16^{ab}	1.88^{ab}	1656
T3 (T1 + PFA at 150g/mt feed)	50.41^{ab}	91.71^{a}	1.82^{ab}	1754
T4 (T2 + PFA at 150g/mt feed)	48.75^{bc}	87.68^{b}	1.80^{b}	1698

Values with different superscripts differ significantly at P<0.05

Materials and methods

A total of 840 male day-old Ross 308 male broilers were randomly distributed to four experimental treatments based on a 2x2 factorial design, supplementation of commercial phytogenic feed additive (Naturogen-

510) and the recommended and reduced dietary nutrient levels respectively.

Each treatment was replicated seven times with 30 broilers per replicate. The birds were fed with corn/soy starter (1-21 days) and finisher (22-35 days) mash rations for 35 days based on the following treatments:

- Basal/control diet (T1).
- Diet with reduced nutrient level (T2).
- T1 plus 150g of phytogenic feed additive (T3).
- T2 plus 150g of phytogenic feed additive.

The nutritional matrix of the tested PFA was considered

Treatments	Protein digestibility %	Energy availability %
T1 (Control/basal diet)	91.90	84.00
T2 (reduced nutrient density diet	91.50	81.30
T3 (T1 + PFA at 150g/mt feed)	94.80	86.20
T4 (T2 + PFA at 150g/mt feed)	96.80	85.90

Table 2. Effect on protein digestibility and energy availability.

in the formulation of the reduced nutrient density diet. Feed and water were provided ad libitum. Parameters measured were feed intake, body weight, feed conversion ratio, mortality, Newcastle disease virus antibody titer and protein and energy digestibility.

Broilers were inoculated with commercially available live NDV vaccine by intra- muscular injection on the 14th day of the experiment.

Blood was taken from the jugular vein from two weeks after injection. Serum samples were analyzed for anti-NDV antibody titers by ELISA with commercial kits, following the manufacturer's directions.

Table 3. Approximate calculated nutritional content of the starter and finisher diets.

Calculated nutritional content	Starter (1-21 days)		Finisher (22-35 days)	
	T1/T3*	T2/T†	T1/T3*	T2/T4†
TMEn (kcal/kg)	3,100	3,045	3,150	3,100
Crude protein (%)	21.50	20.50	19.64	19.00
Ca (%)	1.00	1.00	1.00	1.00
Available P (%)	0.40	0.35	0.30	0.25
Lysine (%)	1.13	1.07	1.02	0.97
Cys+Met (%)	0.90	0.86	0.73	0.70

* Recommended † Reduced

Feed samples were analyzed for nutritional content. Data were analyzed using a randomized complete block design following GLM procedure of SAS and statistical significance at $P \leq 0.05$.

Results and discussion

The overall zootechnical performance effect on body weight, daily gain, feed intake and feed conversion ratio are shown on Table 1.

The treatment diets with PFA (T3 and T4) showed numerically higher final body weight than diets without PFA (T1 and T2) by 1.9% and 2.5% respectively.

Reduction on nutrient density level low- ered feed intake and daily weight gain which resulted in significantly better feed conversion ratio (T1 vs T2). The addition of commercial PFA product either at the recommended /normal basal diet or at reduced nutrient density diet (Table 3) showed significant improvement in feed conversion ratio after 35 days by 5.2% and 4.2% respectively. The higher protein digestibility and energy availability on diets supplemented with PFA either at recommended or reduced nutrient density as reflected in (Table 2) might contribute to the better body weight and FCR.

An overall statistical analysis has shown that the addition of tested PFA (Naturogen-510) significantly improved ($p=0.006$) feed conversion ratio from 1.89±0.09g/g in the control groups to 1.80 ± 0.05g/g (-5%) in the groups with PFA on day 35. The results supported other studies conducted demonstrating the beneficial effect of phytogenic feed additives. PFA have shown to stimulate secretion of digestive juices, enhances activity of digestive enzymes and reduces intesti-nal ammonia formation. The increased secretion of digestive enzymes might improve nutrient breakdown and thus, increase availability and absorption of nutrients.

Based on the blood serum analysis for antibody titer against Newcastle disease virus, the addition of tested PFA at both control/basal diet and reduced nutrient density diets increased the amount of antibody by 12.2% and 21.5%, respectively.

Similarly, the same positive effect on mortality was reflected in diets with the PFA as shown on Table 3. The results demonstrated that PFA added to broiler diets can enhance immunological activity.

Liu et al. (2010) showed that the addition of plant extracts (Radix astragali, Radix codonopis, Herba epimedii, Radix gly- cyrrizae) to the drinking water improved immune response and increased antibody titers to NDV.

Awaad et al. (2010) showed that eucalyp-tus and peppermint oils are able to implement humoral immune response in chicks against ND. While Jafari et al. (2009) reported that the addition of fresh garlic to broiler diets has the potential to increase serum γ-globuline in broilers vaccinated against common broiler pathogens.

Conclusion

This study has shown the beneficial and promising effects of phytogenic feed additive (Natutogen-510) on zootechnical performance, immune response and nutrient digestibility in broiler production.

	ND titer (log_2)	Mortality (%)
T1 (Control/basal diet)	2.29	7.62
T2 (reduced nutrient density diet	2.00	5.71
T3 (T1 + PFA at 150g/mt feed)	2.57	6.67
T4 (T2 + PFA at 150g/mt feed)	2.43	4.76
Basal diet (control)	2.14	
Diet w/ PFA	2.50	

Table 4. Effect on antibody titer and mortality.

What ? Why ? and How ? of Standardized Botanical Powders

nidhi@naturalremedy.com

Dr Raina Raj,
Marketing Head,
Natural Remedies Pvt Ltd

The future of the animal food industry is invested in the organic revolution, due to the worldwide awareness of the health benefits associated with holistic living. The natural supplement industry is foreseeing a huge surge for evidence-based scientific herbal products. This growing market demands exceptionally high-quality and consistently efficient natural products. One of the major issues in assuring the consistent quality of herbal products is the natural variation of endogenous phytochemicals that occur in plants. The phytochemical "fingerprint" of a particular species of plants can vary drastically depending on the age of the plant, soil conditions, weatherconditions, farming practices, time of harvest, geographical location, post-harvest processing,and many other factors, leading to inconsistent results of the final herbal products.

Herbal powder image

The solution to this is by standardization of the product during manufacturing. Our intention through a series of articles is to provide evidence on what is ? And why is it ? There a mandatory need for standardization of herbal powders to ensure high efficiency and consistency in each batch. This article series will take the readers through a journey of rigorous standardization process ofstandardized botanical powders (SBPs) that begins at the grass-root through the procurement of raw material by supervised contract farming or other means; assurance of evidence-backed consistency in quality until its packaging before reaching the end-user. The current article shall provide in-depth knowledge or of what SBPs are; and their benefits in the poultry diet?

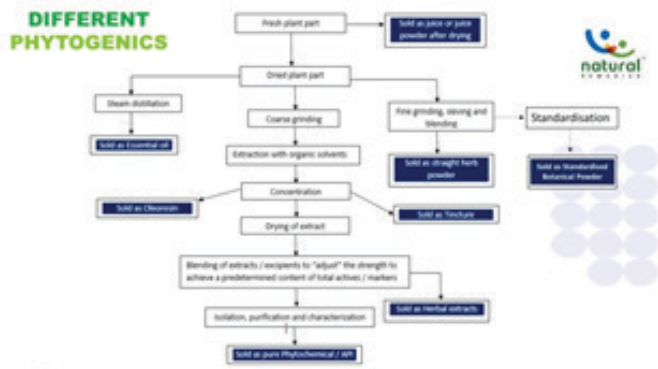


Figure1: Schematic representation of processing of botanicals during manufacture

What are Standardized Botanical Powders (SBPs)?

Standardized Botanical Powders (SBPs) are herbal powders whose specific phytochemical active concentrations are standardized with minimal variation, to ensure efficient phyto-active function in the animal's body. Through standardization of botanical powders, the product can be monitored for consistency and it provides the expected results in the animals.

Processing of Standardized Botanical Powders

Botanicals are processed in different ways as shown in Figure 1 depending upon the end-use and also, sometimes, depending on the inherent nature of the botanical itself. Let us take the example of Withania somniferaknown as "Ashwagandha" in Ayurveda;the phyto-actives are present in its roots. The dried roots are powdered finely to produce Ashwagandha straight powder. This powder is then standardized with reference to the phytochemical markers chosen; this would also be the constituent that is responsible for its botanical effect in the body. The standardization process of the phytochemical assures consistency in its biological effects in each batch, and these are referred to as SBPs.

Why are SBPs a more holistic way to approach phytochemical supplementation?

Phytochemicals like alkaloids, terpenes, phenolic compounds, and flavonoids are produced by the plants for self-defence and are stored in a specialized organelle known as the vacuole, which is encapsulated by a membrane known as tonoplast(Figure 2). Once the SBP is fed to the animal, the tonoplast disintegrates in the gut of the animals, which in turn releases the phytochemicals present in it. The natural

encapsulation that nature provides to plants to protect its phytochemicals is preserved during manufacture. This ensures optimum phytochemical delivery to the animals.

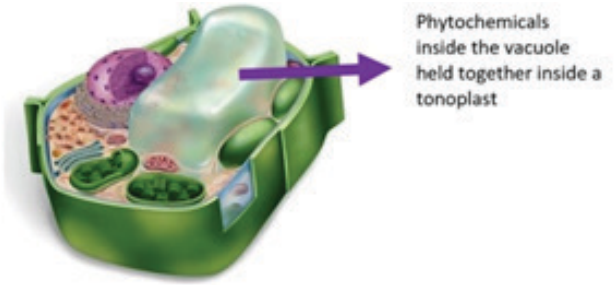


Figure 2: Schematic representation of the Tonoplast

How are the Standardized Botanical Powders different from botanical extracts?

The SBPs are simple straight powders of the botanical plant part which have scientific evidence of health benefits associated with their use. Unlike extracts, the manufacturing of SBP does not involve any extraction, elimination, or concentration of individual components. They can be used as functional food ingredients just as the herbal extracts are used. Generally, SBPs require larger oral doses to attain the health benefits. Extracts are often preferred only when the volume of the oral dose is an issue. Technically the SBPs are as good as extracts because the extracts are produced from the same herbs.

Parameters	SBP	Crude Drug Powder	Essential Oils	Oleoresin	Herbal Extracts
Standardisation	Yes	No	Yes	Yes	Only in standardised extracts
Uniformity in batches	Yes	No	Yes	Yes	Not sure
Active ingredients	Many	Many	Selected few	Selected few	Selected few
Stability	High	Moderate	Low (needs protection)	Low (needs protection)	Low (needs protection)
Particle quality	High (no carrier)	Not sure (depends on sieving)	Not sure (depends on carrier)	Not sure (depends on carrier)	Not sure (depends on carrier)
Other features	- Particle superiority - Holistic Approach - Natural protection of ingredients - Batch to batch consistency - Uniform mixability - Stable at pelletisation temp: - Non hygroscopic - No need for carriers	- Quality varies based on geography, different seasons - Chances of contamination high	- Highly reactive - Activity may be reduced by exposure to air, high temp, UV, moisture, metals etc. - Hygroscopic - High cost of production	- Highly reactive - Hygroscopic - High cost of production	- Higher solubility - Low dosage - Hygroscopic

Table 1: Compared to other phytogenic, SBPs are more holistic since they contain all the constituents of a plant which assist in bringing about the desired results in animals.

Biological advantages of using SBP

1. SBPs have multiple modes of action with a systemic effect on different organ systems in a synergistic manner, due to different composite of phytochemicals inherently present in them. SBPs showsynergistic and/or additive effects due to a composite number of phytochemicals in them.
2. SBPs contain high fibre content that provides several benefits, in digestion and feed absorption. They are also useful to the gut microflora.
3. The raw materials for SBPs are produced by supervised, responsible, and sustainable farming, to assure good quality. Hence, we possess the capability totrace them back to their origin up to the supplier level.
4. Secondary metabolites (the potent phytochemicals) are present in their natural packaging, known as the tonoplast.
5. SBPs are assessed for their physical properties such as particle size, foruniform mixing; Thermo-stability at 120°C for 5 minutes at 15 psi pressure; chemical consistency from batch to batch; and microbial analysis for safety.
6. SBPs are manufactured with the holistic principles of Ayurveda and modern scientific technologies.

Currently marketed SBPs contain a combination of botanicals, whose desired phytochemicals are standardised to give specific biological effects in the animals. In the next issue,we shall discuss how an SBP comes into being, titled "to be or not to be an SBP".

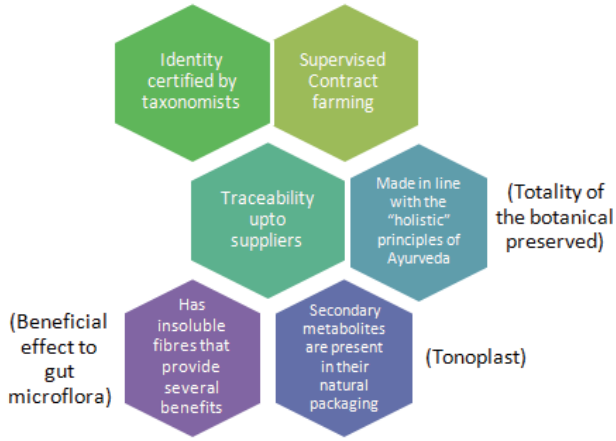
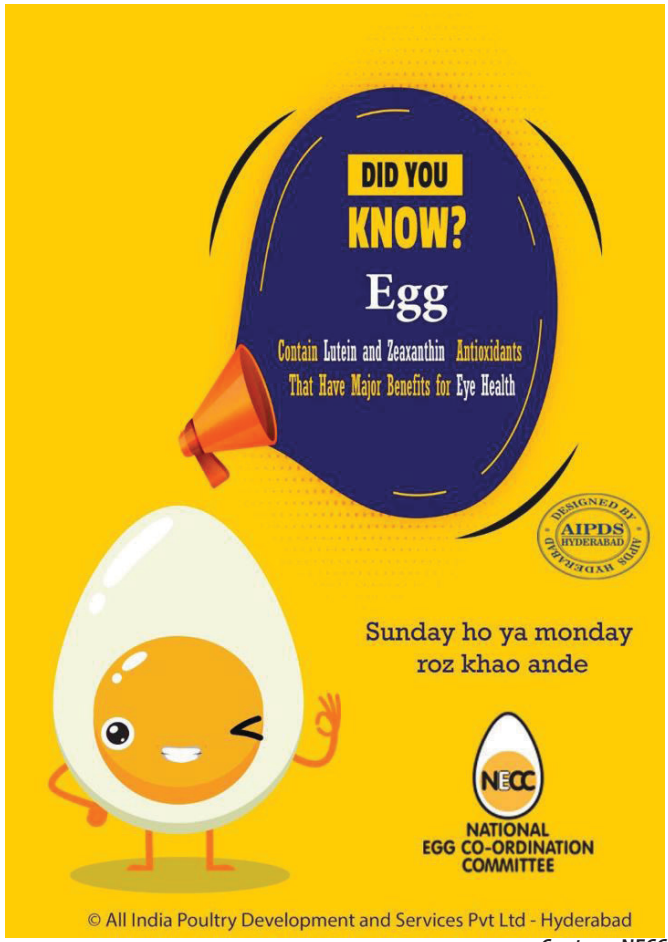


Figure 3: Beneficial Effects of Using SBPs



Coutesy: NECC

Postal Regn. No. HD/1067/2021-2023
Published on 8 August 2021