

# Poultry Fortune

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November 2019

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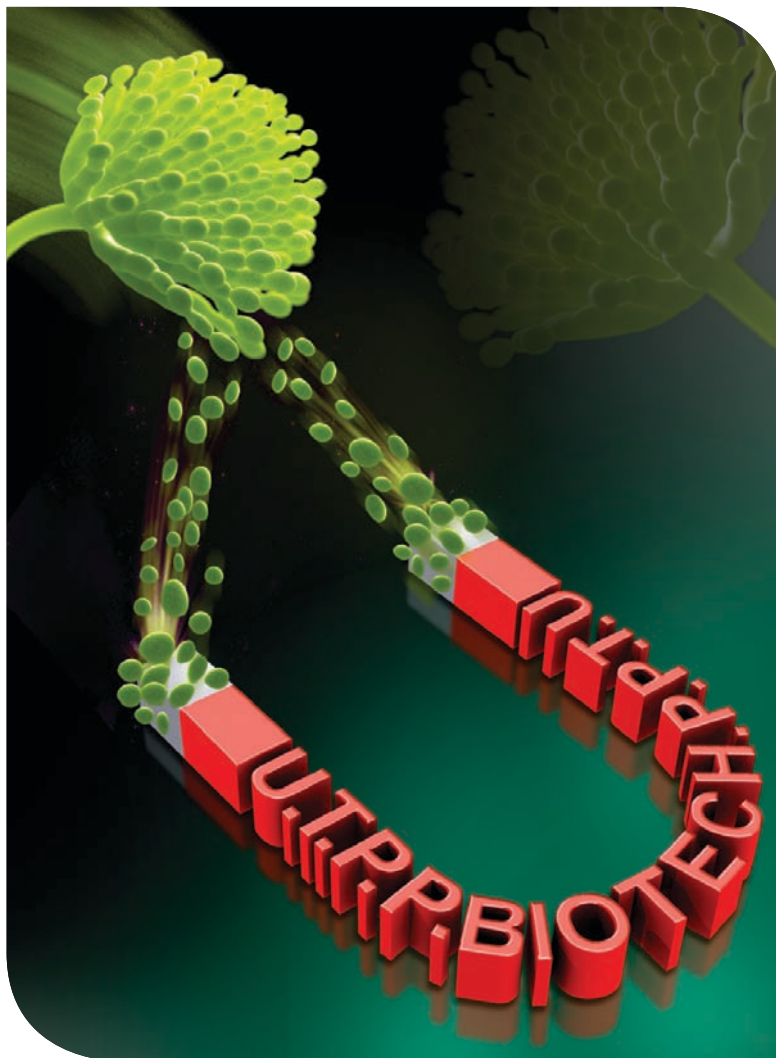
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- Editor



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## Farmers should spend quality time in the farms ....



The November 2019 issue of **Poultry Fortune** is in your hands.

Poultry Fortune, Editor, M. A. Nazeer had an interview with Mr Suresh Chitturi, Managing

Director, Srinivasa Farms Pvt Ltd; Mrs Ruby Sharma, CEO, Vesper Group and Mr Abhilash Nair, Managing Director, Zeus Biotech Pvt Ltd recently.

In the News section, you may find news about Srinivasa Farms Pvt Ltd, Franchisee of Hy-Line International, a US-based player in poultry layer genetics, for India for Hy-Line W-80 launched the breed in August 2017 in the country. Most of the initial batches of W-80 completed first cycle. Currently, they are supplying Hy-Line W-80 chicks in 14 States and will shortly introduce the breed in West Bengal and North-East parts of the nation. They are currently supplying day old chicks of both Layer and Broiler, Soya De-oiled Cake, Poultry Feed and Processed Chicken. Srinivasa Farms have Ross AP95 Broiler breed and is operating in Southern India and shall soon start operations in other states in the country.

Indian Herbs, a pioneer herbal Animal Health Care products manufacturers since 1951, hosted a series of Technical Seminars at Kolkata, Pune, Bangalore and Karnal from 23 to 26 September 2019 on its range of phytogenic poultry products with message "Food Safety through Feed Safety".

There is a special feature published on Vesper Group established by a visionary veterinarian Dr Suresh Sharma. The company has the Research and Development Centre focused on manufacturing pharmaceutical products and poultry ND Killed vaccine in India. Mr Dhruv Sharma managed the company for the first 15 years. Later Mrs Ruby Sharma, CEO of Vesper Group took over the reins of the company

and is continuing the legacy of Vesper Group, which has emerged as a leading player in domestic as well as international market.

Another special feature published on Mysore based Zeus Biotech Pvt Ltd, the company founded by late Dr Jay Prakash Nair, who always believed that Quality will be recognized though it takes time. Indian companies are no where below international companies in maintaining quality standards, says Mr Abhilash Nair, Managing Director of 28 years old company, Zeus Biotech Pvt Ltd and son of Dr Jay Prakash Nair. Zeus Biotech is manufacturing over 35 products for Animal Nutrition and Healthcare.

In the Articles Section, article titled "Garlic as herbal feed additive in broiler chicken" by Bornalee Handique discussed about feed is the major component of total costs of poultry venture as 80 % of the total expenditure is on procurement of feed.

★★★★★

Farmers, both Layer and Broiler, can avoid many of the farming and viability issues like better farm gate price for the produce, maintenance of farm cleanliness & hygienic conditions, proper feeding & feed wastage, clean drinking water to birds, proper lighting & ventilation, timely collection of eggs & grown up birds, monitoring workers behaviour & attitude, selling of the produce at a better price — if every farmer spends eight hours a day in the farm and for the farm. The farmer should not depend much about these aspects on others.

There is no point of blaming others like Traders, NECC, Leaders in poultry etc. You need each other. Farmers and Traders should go hand in hand, understand each other and cooperate to make farming business successful and profitable. Also make sure that consumers are not over burdened with exorbitant prices to eggs and chicken meat.

M.A.Nazeer  
Editor & Publisher  
Poultry Fortune



### 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.

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# Srinivasa Farms supplies over 3 Cr Hy Line W-80 Chicks in India; Covers 14 States

**Srinivasa Farms launched Hy-Line W-80 in August 2017. Most of the initial batches completed one cycle. Currently they are supplying Hy-Line Chicks in 14 States and will shortly introduce the breed in West Bengal and North-East part of India.**

**They are currently supplying day old chicks of both Layer and Broiler, Soya De-oiled Cake, Poultry Feed and Processed Chicken. Srinivasa have Ross AP95 Broiler breed and is operating in Southern India and will soon start operations in other states in India. Poultry Fortune Editor M. A. Nazeer had an exclusive interview with Mr Suresh Chitturi, Managing Director, Srinivasa Farms Pvt Ltd. Excerpts:.**



**Suresh Rayudu Chitturi, Managing Director,  
Srinivasa Farms Pvt Ltd**

Mr Suresh Rayudu Chitturi, Managing Director, Srinivasa Farms Pvt Ltd, producers of Hy-Line W-80 chicks in India said that this year (2019) we have expanded our Layer Chick business in North India and hired a strong technical services team. We have recruited about 50+ Veterinarians during last one year in Srinivasa Farms.

## **Hyline W-80 completes one cycle in India**

Srinivasa Farms launched Hy-Line W-80 in August 2017. Most of the initial batches completed one cycle, said Mr Suresh chitturi.

Currently Srinivasa Farms are supplying Hy-Line

Chicks in 14 States Viz. Andhra Pradesh, Telangana, Tamilnadu, Karnataka, Orissa Maharashtra, Gujarat, Rajasthan, Madhya Pradesh, Chattisgarh, Haryana, Punjab, Uttar Pradesh & Bihar. We will shortly start supplying Chicks to West Bengal and North-East Part of India, he stated.

The Performance at all three stages are excellent. Farmers are saving about Rs 10 per Grower upto 18 Weeks compared to other breeds in production cost. Mortality is about 3% and feed consumption is about 5.5 Kg (about 200 to 300 grams less than other

breed) from 0-18 Weeks (age).

According to Suresh Chitturi, on an average Srinivasa Farms are getting about 5 Pullet eggs per Hen Housed (50 gram weight) and average feed Consumption in Laying Period is about 103 gms/day. Srinivasa Farms are getting Peak of 90% by 25th week (age) and Production nearer to the breed standard. Srinivasa Farms have seen about 400 Eggs in 90 Weeks in the initial batches supplied in 2017. Hy-Line W-80 is resistant to MD & CAV and disease recovery is faster in some of the

diseases compared to other breeds available in India.

## **Merits of Hyline W-80 for a farmer**

The main features of Hy-Line W-80 are its feed efficiency, Less Mortality and Persistency of production upto 100 weeks (age). It can lay upto 470 Hen Housed Eggs in 100 weeks. Hy-Line W-80 produces eggs with about 20 paisa per Egg less cost compared to other breeds. On an average, farmer will get about Rs 60 per Bird more profit compared to other competing breeds, he told.

**Supplied over 3 Crore Hy-Line W-80 Chicks**





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Srinivasa Farms supplied more than three (3) Crore Hy-Line W80 Chicks in India so far.

#### Acceptance of the Breed

Farmers are happy with Hy-Line W80 chicks quality and performances. Most of the farmers have taken repeat batches based on the performance of earlier batches. On an average farmers are saving about 5 to 8 grams per day feed compared to other breeds. Hy-Line is the global market leader in Layer Chicks having more than 50 % market share world-wide. Compared to other breeds available in Indian market, Hy-Line W-80 customers are saving 3 to 5 kg less feed in a flock cycle.

#### Ross AP95 Broiler breeding operations

We are already in the Broiler Breeding Operations. We have Ross AP95 Broiler breed. Currently we are operating in Southern India and soon will start operations in other states in India, informed Suresh Chitturi.

#### Group activities in Poultry

Srinivasa Farms is the exclusive distributor of Hy-Line Layer Chicks in India. They are currently supplying day old chicks both Layer and Broiler, Soya De-oiled Cake, Poultry feed and Processed Chicken.

We have broiler integration and Poultry Feed Sales business. Presently we are

focusing on Andhra Pradesh and Telangana States for Broiler Integration and Poultry Feed Sales business.

#### Future plans and targets

Srinivasa Farms are aiming to be the leading Poultry company in India present across the value chain.

They are setting up a Mega Food Park in Prakassam district of Andhra Pradesh which is centrally located to Bangalore, Hyderabad and Chennai. It is one of its kind Mega Food Park focused on animal protein and value added products. They are setting up Egg processing, Chicken processing and Ready to Eat / Cook (RTE/RTC) products and supporting infrastructure facilities in the mega food

park. Mega Food Park will be operational by the end of 2019, Suresh stated.

We have started our own retail operations under "Freshen" brand to provide Chilled fresh and hygienic poultry products to the consumers in their neighbourhood. Currently we have Eight Stores in Hyderabad and our product is also available on e-commerce platform i.e. Big Basket, he said

Suresh also informed that Srinivasa Farms are in the process of setting up breeding and hatcheries facilities in North India which will support their operations across multiple states in India.

## Suresh Chitturi, the First Asian to Chair the IEC



Past Chairman of IEC Mr Tim Lambert and Present Chairman Mr Suresh Chitturi

Mr Suresh Chitturi, Vice Chairman and Managing Director of Srinivasa Farms Pvt Ltd, has been appointed as the Chairman of International Egg Commission on 26 September 2019 at the IEC Global Leadership Conference held in Copenhagen, Denmark.

#### About IEC

The International Egg Commission is the global network for the egg industry. It has members in over 80 countries around the world. It was established at the second International Egg Conference in Bologna, Italy in 1964.

The London, UK-based commission has a number of goals. Among these are the fostering of international cooperation among all sectors of the egg industry, encouraging the development of better statistics and market intelligence for shell eggs and egg products, and collecting and publishing such data, and encouraging the harmonization internationally of marketing standards for shell eggs and egg products.

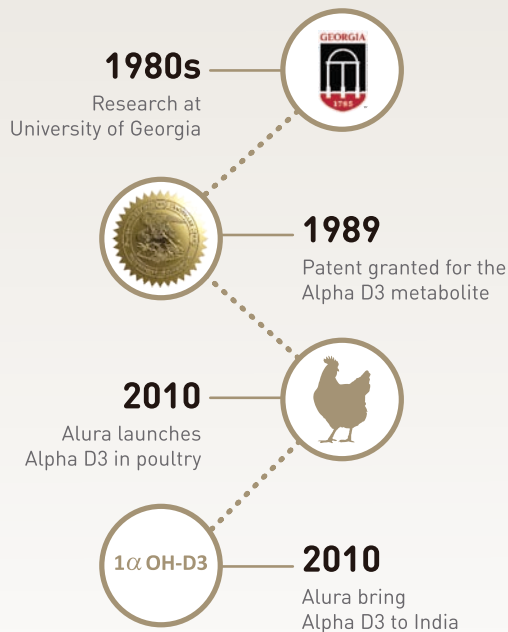
The IEC in fact, is the only organization that represents the global egg industry. As the global voice of the egg industry, the IEC has the responsibility to discuss industry issues as well as to maintain links with other international organizations. The IEC is able to act as

a communication link between industry and international regulators / decision makers, and therefore takes positions on a range of issues.

IEC established International Egg Foundation (IEF) in 2014 to work as an independent charitable foundation.

The IEF's goals are to help implement the United Nations Sustainable Development Goals and increase egg production and egg consumption in underdeveloped countries to provide undernourished infants, children and families with an independent, sustainable, high-quality protein supply. To achieve these goals, the IEF works alongside the world's largest and most effective charitable foundations and with the world's largest egg businesses to help ensure high-quality protein is accessible to everybody no matter who they are or where they come from. Suresh Chitturi, leads

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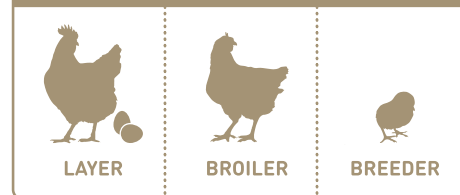
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Srinivasa Farms, a dominant force in the Indian poultry industry. Srinivasa is recognised as one of the builders of the Indian poultry industry in the last 50 years. After assuming leadership, Suresh steered Srinivasa to achieve sustainably high growth through expansion and diversification.

Srinivasa Farms is involved in Chicken Breeding, Chicken & Egg Processing, Feed Manufacturing and Soya Oil Extraction and Processing. His work has led to the company being recognised for always doing what is best for the individual farmers, industry and the country. Adopting a farmer first philosophy, he is passionate about ensuring that the poultry industry is healthy and sustainable through adoption of latest technologies, good rearing practices and welfare of the livestock. Suresh is helping the industry to be more sustainable and responsible in its production and sourcing.

Suresh is driven by the mission of eliminating nutritional deficiencies of women and children in India. He passionately advocates poultry as a vehicle of transformation and empowerment. His work has been recognised at a global level and is engaged in advocacy for the poultry industry internationally as the Chairman of International Egg Commission (IEC).

Besides work, Suresh is active in wildlife conservation through his work with WWF and other conservation minded organizations. He is also a



**Suresh Rayudu Chitturi,**  
Chairman, IEC

talented photographer and has exhibited his photographs for raising awareness and funding for conservation.

Suresh takes pride in the role he played in the two telugu states (Telangana and Andhra

Pradesh) become leaders in ease of doing business through his work in CII in various

capacities. An avid reader, averaging 50 books a year, he also loves to travel and learn about

different cultures and their history.

#### **Education**

Bachelor in Computer Science Engineering from R.V College of Engineering, Bangalore.

Master of Business Administration from Goizueta Business School, Emory University, USA.

The Presidents Programme in Leadership from Harvard Business School, USA.

#### **Professional Affiliations & Board Memberships**

First Asian / Indian to be the Chairman of the International Egg Commission (IEC), U.K. Councillor for The International Egg Commission Foundation.

Co-founder and Board Member of TiE Amaravati.

Vice-President of All India Poultry Breeders Association.

Board of Director - Amara Raja Batteries.

Former Chairman of Confederation of Indian

Industry (CII), AP State Council, (for 2 terms 2014 - 2016).

Former Chair of CII - Southern Region Startuppreneurs Forum.

Member of CII - Southern Region Council from 2016.

## **Draft rules on breeding, transporting poultry birds ready: Centre to HC**

*The court was hearing a batch of PILs by NGOs FIAPPO and the People for Animals which have claimed that keeping egg-laying hens in small wired cages amounts to 'extreme cruelty'*



#### **New Delhi, October 25 :**

The Centre has told the Delhi High Court that draft guidelines for regulating breeding and transportation of poultry birds have been framed by a government-appointed committee after consulting all stakeholders. The submission was made before a bench of Chief Justice Mr D. N. Patel and Justice Mr C. Hari Shankar by central government standing counsel Mr Jasmeet Singh.

The court was hearing a batch of PILs by NGOs Federation of Indian Animal Protection Organisations (FIAPPO) and the People for Animals which have claimed that keeping egg-

laying hens in small wired cages amounts to "extreme cruelty".

The bench listed the matter for further hearing on January 20 to enable NGOs to go through draft rules and give its feedback.

During the hearing, a poultry farmers' association made an oral plea to be impleaded in the matter claiming their interests were being affected.

The court, however, declined the plea saying even though the farmers were aware they would be affected, they had not filed a petition till date.

The high court had in

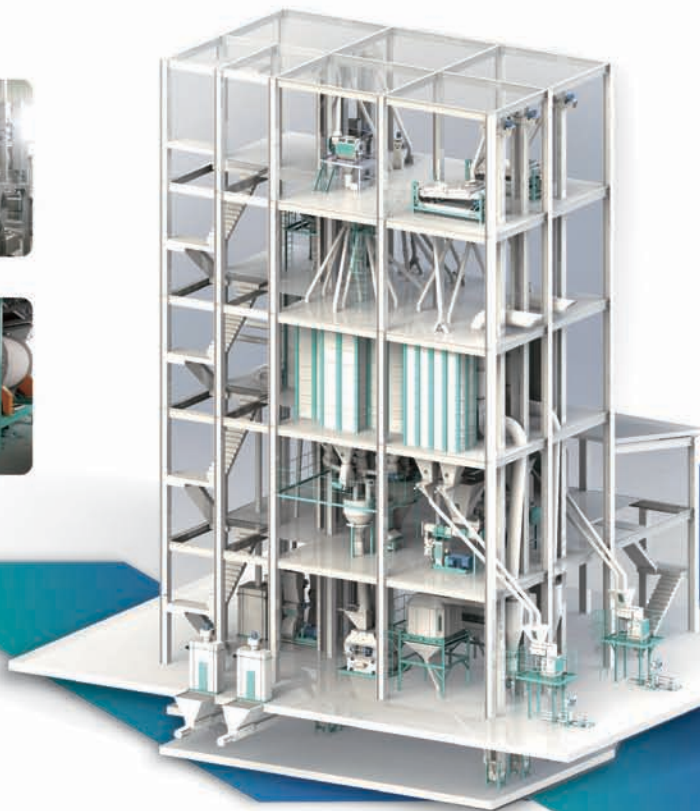
**Contd on Page 20**



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## THE GREEN EGG DAY – Raising Awareness of a Precious Protein Source



*Dignitaries Prof Nadeem, Dr Bhatta, Dr Jeetendra Verma and school staff lighting the lamp.*

GREEN Egg Campaign is a flagship event of Delacon Biotechnik GmbH, Austria, was celebrated on 14th Sept 2019 at Bangalore, INDIA. The Green Egg Project is a global campaign within the framework of Delacon's Corporate Social Responsibility activities. The main aim of this project is that people especially children enjoy eating eggs, while educating them about the nutritional and health benefits of this sustainable source of animal protein, strengthen and support the local layer industry and with a global cause of feeding world with safe and sustainable food.

The Green Egg Day was

organised at Govt. Model Primary School, Govt. High School and Govt. Pre-University College campus of Kodigehalli, Bangalore. The total students attended the program were 1158 along with the 45 teaching and support staff. The chief guest of the function was Dr Mohamed Nadeem Fairoze, Former Professor and Head, Department of Livestock and Technology, Veterinary College, Bangalore. The Guest of Honour was Dr Raghavendra Bhatta, Director ICAR- NIANP, Bangalore. Ms Gina Medina, Group Leader Asia, Delacon Singapore Pvt Ltd, came specially to attend this event and meet and know

the students of India. This was her maiden visit to India.

The event began with traditional folk dance of Karnataka state wonderfully performed by students of Govt. Higher Secondary School, Thindlu, Bangalore. The students and other audience were mesmerised by the stunning performance of the folk dance by the small school kids.

Now it was the turn to make students learn more about the nutritional and magic power of eggs. Prof. Nadeem elaborated the nutritional values of eggs and emphasized on the need of taking two eggs

per day. He said that each student should go back to their home and ask their parents to give them at least one egg per day which will make them healthier, intelligent and successful person in life. Dr Nadeem also answered the questions raised by students about the egg white and yolk. He clarified the myth of not eating yolk by most of the people, thinking that it increases the level of cholesterol in the body etc.

Dr Raghavendra Bhatta gave very impressive facts about eggs and told students that having eggs and proper nutrition can help them in overcoming the malnutrition problem and brighten their future. Eggs helps in development of brain and eventually helps the students to score good marks in exams and succeed in life.

Mr Ramesh Kumar, Principal of PU College explained in detail about the nutritive value of eggs and requested students to refrain eating junk food and very oily food stuffs which are not healthy.

Ms Gina Medina was very happy to see the enthusiasm and participation of kids. She interacted with students about their health, studies and culture. She also told them to ask your mother to include eggs in your meals every day.



*Ms Gina Medina, Sales Group Leader, Asia, Delacon Biotechnik, addressing the students*



*Ramesh, Principal of Govt. PU College, Kodigehalli, Bangalore*



*Dr Raghavendra Bhatta, Director, ICAR-NIANP, addressing the students*



*Dr Jeetendra Verma, Regional Manager, South Central Asia, Delacon Biotechnik*



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**Distributing eggs to the students**

As a support to the school for their new building, Delacon installed one water purifier with capacity of 250 litres per hour for students to get purified drinking water. Delacon also donated text books to 10 meritorious under privileged students of 1st year PU of science faculty. This will help them to secure good marks in exams and excel in their lives.

Delacon distributed pack of 6 eggs to each student so that they take home the eggs and spread the message of eating eggs regularly at home. They were also given refreshment to eat then and there. Nearly 7200 eggs were



**Presenting memento to Principal**

distributed on that day to students, teachers and support staff. The principal Mr Ramesh Kumar, the management of school appreciated the program and praised Delacon for selecting their school and conducting the event. It was a new and innovative program for them.

Dr Jeetendra Verma, Regional Manager Delacon conducted the program and lastly proposed the vote of thanks. Delacon acknowledges the support of Mr Sessaiah, Sravan Poultry Farm, Anekal, Bangalore for providing the clean and fresh eggs and packing them for the occasion.



**A view of Govt Model Primary School and High School students**

## Draft rules on breeding, transporting poultry birds ready: Centre to HC

*Contn from Page 16*

November last year observed that hens should be able to "move around comfortably" in cages, suggesting that they be kept in cages which are bigger than the small wired ones being used currently.

It had directed the Environment Ministry to set up, and chair, a committee to lay down guidelines on the breeding and transportation of poultry birds.

The court had said the committee should consider the Law Commission's recommendations on the issue, the suggestions of other states and the views of the Animal Welfare Board of India (AWBI) as also other stakeholders including poultry farmers, and submit a report.

"Till a decision is taken, no further battery (small wired) cages would be permitted to be used," the court had said and added, "use big cages where they can moved around comfortably. They should be able to move around freely."

The petitions were transferred from Maharashtra, Uttar Pradesh, Punjab and Andhra Pradesh to Delhi by the Supreme Court.

The NGOs have contended in their pleas that under the battery caging system, egg-laying hens are confined to space equivalent to an A-4 size paper sheet.

They told the court such cages are still the common method of housing chickens, despite the AWBI suggesting states to phase them out.

They have also claimed before the bench that poultry farmers cut out a portion of the beaks of the birds and they are kept in cramped and dirty cages.

According to the NGOs as well as the AWBI, egg-laying hens need much more space than the confined area provided by small cages which are stacked one on top of another. They have alleged that there was hardly any space for movement of birds in these cages.

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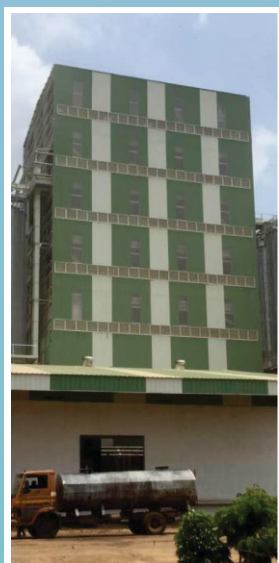
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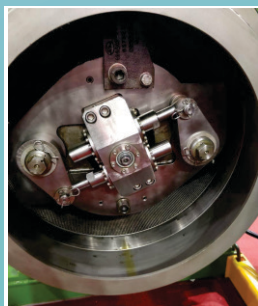


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## Shadnagar Farmers felicitate Suresh Chitturi, Chairman, IEC



*P. Venkata Rao, Jakka Rami Reddy and Jakka Sanjeev Reddy with Suresh Chitturi*

**Shadnagar:** Layer poultry farmers of Shadnagar area, near Hyderabad, felicitated Mr Chitturi Suresh Rayudu, Managing Director of Srinivasa Farms Pvt Ltd, who has been elected as the Chairman of International Egg Commission (IEC) at the Global Leadership Conference held at Copenhagen, Denmark in the last week of September 2019. He is the first Indian and Asian to have been elected as IEC Chairman.

Mr Pathuri Venkata Rao, Shadnagar zone President of Telangana Poultry Federation and NECC Hyderabad Zonal

Committee member, organised the felicitation function in a grand way in which over 200 farmers took part.

Presiding over the function, Mr P. Venkata Rao said that poultry farmers in India are proud of Mr Suresh Chitturi on his becoming the President of IEC and wished him to acquire further greater heights in future.

Mr Jakka Rami Reddy, Vice President, Telangana Poultry Federation, said that

Suresh Chitturi should take leadership and resolve the issues of poultry farmers in the country.

V. Balakrishna Reddy, Jakka Sanjeev Reddy and other prominent farmers spoke on the occasion.

Mr C. Jagapati Rao, Chairman, Srinivasa Farms Pvt Ltd, was also present as a special invitee.

Replying to the felicitation, IEC Chairman, Mr Suresh Chitturi, said "After my family, poultry farmers and poultry industry is my priority. And I will do my best for the welfare of farmers and the sector".

M. Srinivasa Rao, M. Satish, M. Venkataramana, M. Malleswar Rao, G. Vasanth

Rao, K. Prabhakar, P. Raghupathy and others took active part in the felicitation ceremony.

Mr D. S. Subrahmaniam, Proprietor, Tara Enterprises expressed confidence that Mr Suresh could well take-up promotion of egg consumption by several means as Chairman, IEC.

Mr M. A. Nazeer, Editor, Poultry Fortune anchored the felicitation programme. Felicitation citation was recited by Mr M.N. Rao, Editor, Poultry Voice of India.

Farmers generously garlanded Suresh Chitturi with flowers and bouquets. Venkata Rao arranged dinner to the participants on the occasion.



*C. Suresh Rayudu, IEC Chairman being felicitated by Shadnagar farmers near Hyderabad*

## Include egg in daily diet



*Different egg dishes prepared by the members of the Wayanad district Kudumbashree Mission in connection with International Egg Day at Kalpetta in Wayanad on Friday.*

**Kalpetta , Oct 12:**

International Egg Day celebrated

The need for including at least an egg in the daily diet was stressed at a seminar that concluded here on Friday. The programme was organised by the district Animal Husbandry Department in connection with International Egg Day.

At a session on 'Nutritive value of egg and prospectus of backyard rearing of poultry', Mr R. Sudhi, veterinary surgeon, Palakkad, said people had concerns over the

cholesterol content of egg. But it's the only natural food with high quality protein and contained all vitamins except vitamin C, Dr Sudhi said. Mr Abdul Muneer, Assistant Professor, Department of Poultry, Kerala Veterinary and Animal Sciences University, Pookode, said egg was an ideal food. The programme was organised in association with Indian Veterinary Association, Kudumbashree Mission, Wayanad, Wayanad Egger Nursery Association and Moopainad grama panchayat.

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## Which came first, chicken or the egg? For Kemin, 'You' are the one who comes first!

*Kemin celebrates World Chicken Day  
and Egg Day 2019*

World Chicken Day is celebrated on the second Thursday and World Egg Day is celebrated on the second Friday in October each year. Kemin, being the pioneer in celebrating the World Egg day in the country, has come forward to celebrate the World Chicken Day this 2019.

Kemin South Asia Pvt Ltd, conducted campaigns and activities to further strengthen

the awareness on the nutritional importance of chicken and egg which intends to help eliminate the protein malnutrition from the population. The campaign underscores the significance of protein in our daily nutrition and urges individuals to incorporate eggs in their everyday diet.

Kemin organized various contests for its employees on the 10th and 11th of October 2019 as a part

of World Chicken and Egg day celebration. Our employees participated in the 'Eggshell crafts' and social media contests respectively. The theme of the contest was "What if eggs had emotions?". It was truly inspiring to see the participants' creative art and enthusiasm.

We also organized photo

booths at our office and factory premises respectively. It was indeed a memorable Chicken and Egg day celebrations 2019 for Kemin.

We thank our customers and well-wishers for being a part of our journey in providing quality protein to the people.

## Boost egg consumption, handle sustainability issues: IEC Chief

*Push poultry sector to increase output  
and improve efficiency, says Suresh  
Chitturi, the first Asian to head a global  
egg industry*

Hyderabad | October 11:

An average Japanese eats 340 eggs per year. The Chinese consume 300 eggs per capita. What's your guess on the per capita consumption of an Indian?

According to estimates, the per capita consumption is around 70 eggs per year, with a total production of about 84 billion eggs. The Indian Council of Medical Research (ICMR) recommends at least 180 eggs per head per annum.

Mr Suresh Rayudu Chitturi, Chairman of the International Egg Commission

While the adage "An apple a day keeps the doctor away" was popularised to promote health, attempts are on to encourage consumption of "An egg a day for good health and nutrition".

Taking into account the nutritional value of having an egg and the growth of the poultry industry, Mr Suresh Rayudu Chitturi, the



**Suresh Chitturi, IEC Chairman**

newly-elected Chairman of the International Egg Commission (IEC), wants to give a big push for the growth of the sector, keeping in mind the global environmental and sustainability issues.

Top priorities

Mr Suresh Chitturi, who took over the post in Copenhagen recently, said his top three priorities would be, one, to expand



**Eggshell crafts by our employees**



**(from right) Mr Sreejith Janardhanan Mr.Sushanta Dey distributing the prizes to the team**

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Product colour change will not affect performance.

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the IEC membership from the present 80 nations so that more poultry farmers, especially in the developing countries, can participate. Two, to create a comprehensive database on the nutritional value of eggs with an intent to increase its consumption in poor nations and, three, address the environment and sustainability issues, especially biosecurity.

Mr Suresh Chitturi, currently, Vice-Chairman and Managing Director of Srinivasa Farms is not only the first Indian, but the first Asian, to head the London-headquartered

IEC, which was formed in 1964. It brings together egg producers, processors and related industry players on one platform.

**Exhaustive study**

The IEC will soon form two scientific panels with representatives from the best universities in the world to undertake an exhaustive study on the benefits of eggs and the environmental aspects, related to production and sustainability. Efforts will be initiated to work more closely with the WHO and medical fraternity to highlight the nutritional value of eggs and to enable

poultry industry bodies to deal with the rational use of antibiotics, anti-microbials, vaccines etc, he added.

It's important to realise that Japan, China and India drive the global egg industry, and Asia produces two-thirds of the world production. The Indian poultry sector, estimated to be about ₹30,000 crore, is growing at a healthy pace too and will soon be the second largest after China.

In the Indian context, the IEC Chief said: "the focus should be on promoting consumption of eggs in children, pregnant mothers and boost the overall per

capita consumption. This will require some innovative thinking in terms of including eggs in a variety of snacks and in midday meals".

As the Indian poultry industry grows, its emphasis should be on increasing production, improving efficiencies and ensuring bio-security concerns.

Better feed, reducing usage of antibiotics, ethical practices in production units, controlled houses and many more such initiatives need to be put in place, Mr Suresh Chitturi feels.

## Vamso Speaks of Marketable Innovation at ICAR Sponsored Winter School



**Dr Arindam Chatterjee, Senior General Manager, Vamso Biotech Pvt Ltd.**

Cutting-edge technologies were discussed at an ICAR Sponsored Winter School on 'Recent Biotechnological Advances on Precision Feeding of Livestock and Poultry'. The event was organised by Department of Animal Nutrition, WBUAFS, Kolkata from 4 - 24th September, 2019. Around 25 distinguished veterinarians, nutritionists & scientists across India joined open-forum discussion on recent advancements & innovations in animal

nutrition. The primary objective of conducting the proposed course was to provide background knowledge and hands on training to animal & allied science specialities on recent advances in livestock & poultry feeding for higher return. The recent feed biotechnology & nano-biotechnology advances have opened up newer avenues & unprecedented opportunities to accelerate the productivity, product quality & net return to farmers without compromising the safety issues. Considering the five decades of eminent market presence of Vamso Biotech Pvt. Ltd. in the field of livestock & poultry nutrition, Dr Arindam Chatterjee, Sr General Manager, was called up on to speak about 'Marketable Innovations' at this event.

"Any organisation's product

*innovation process starts with welcoming 'Ideas'. A robust, process driven and customer centric innovation pipeline is one of the greatest competitive advantages of today's commercial organisation"* – **Dr Arindam Chatterjee**, Senior General Manager, Vamso Biotech Pvt Ltd.

*"Academic and commercial research work on different mandates and their very nature of priority differ to a large extent. Dr Arindam Chatterjee showed us how marketing orientation of an innovation is the lifeline of new product development activities in business organisations operating in livestock sector"* – **Prof. Barun Roy**, Course Director, ICAR Sponsored Winter School, Dept. of Animal Nutrition, West Bengal University of Animal & Fishery Sciences, Kolkata. Animal nutrition accounts

for more than half of the cost of raising farmed animals. There is a huge opportunity unexploited yet because, on a global level, the current animals performance reaches only 60-70% of their full genetic potential. Today's economy is far more dynamic and the comparative advantage is less relevant than competitive advantage which rests on "making more productive use of inputs, which requires continual innovation. The key for the next few decades will be to deliver a new model that balances innovation with sustainability. Innovation is a buzz word in the arena of commercial research especially in the field of animal nutrition today. Recent advancements in precision nutrition has opened up new windows of opportunity for Commercial Nutritionists, Feed Manufacturers and even Farmers to bring about value added products for their customers in India and sub-continent. "Many ideas for innovations, even





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though may sound exciting at first, may not hit the market and eventually die at idea or concept stage of product innovation funnel. The biggest reason for early abortion of the apparently innovative ideas lies in the fact that all the ideas don't find takers in the market. It is

the Marketability of an idea which boosts confidence of a commercial organization to fund research and bring about solutions which can solve real problems of customers", said Dr Arindam. He concluded by showing how adopting a systematic Product Innovation

Process, a commercial organization can bring about new products into the market at the spent of optimum resources and make the product achieve desired market share and gross margin. Innovation is important to the advancement of industry as well as society

at large as it is responsible for resolving collective problems in a sustainable and efficient way. These new technologies, products and services simultaneously meet a social need and lead to improved capabilities and better use of assets and resources.

## In Raigad, Maharashtra - women take up poultry farming, stop migration

*Last year, around 2,200 families were surveyed in Mahad and 700 economically poor, migration affected women, several of them widows, were selected to do poultry farming.*

**Raigad** October 21, 2019 : A poultry farming programme in rural Raigad for below poverty line women is ensuring a steady income and alternate livelihood source in the paddy-dominated terrain. The region witnesses seasonal migration that has increased due to erratic rainfall pattern over the last few years. While the project was initiated by NGO Childfund India, Raigad district officials are handholding the vaccination of poultry and in providing the list of possible beneficiaries for the programme.

On a hillock in Vinhere village, Ms Shubhangi Rajaram started poultry farming six months ago. She is counting days before her hens will start laying eggs. Having so far sold 40 hens for Rs 10,000, Ms Shubhangi (35) says she earns more than she ever did from domestic work in Mahad, a hilly region in Raigad.

Like Ms Rajaram, 700 women in Mahad are indulging in poultry farming. Each paid Rs 3,000 to get a shed for 100 chicks constructed last year. They underwent a two-day training program under experts. Mr Dilip



**Shubhangi Rajaram in Vinhere village has sold 40 hens**

Khambate, project manager in Raigad, said in Mahad 90 per cent families have at least one member who migrates to Pune or Mumbai for additional income. During monsoons, they return to Raigad for paddy cultivation, but with scanty rainfall in last three years, the rice cultivation has been badly hit.

Last year, around 2,200 families were surveyed in Mahad and 700 economically poor, migration affected women, several of them widows, were selected to do poultry farming. "We helped them construct a shed and gave them 100 chicks, all 21 days old and fully vaccinated. Thirty kg of poultry feed was given free to start poultry farming," Khambate

said.

Raigad's deputy commissioner of animal husbandry department, Dr Subhash Mhaske, said they provided support in vaccination of chicks.

Ms Shubhangi's husband had migrated to Mumbai to work at a press unit. Two years ago, the factory shut. "He was jobless. My income was not enough to feed our two kids," she said. Last June, the landless couple was informed about the poultry project. They borrowed Rs 5,000 and bought a 100 square ft land. Today, Ms Shubhangi does three daily visits to feed the chicks and sweep the shed. Locals from nearby villages come to buy meat at her shed. "I sell a hen for Rs 250," she says, then

adds, "Now even my kids eat chicken regularly". She has also started brinjal, ladyfinger and cucumber plantation nearby to grow enough to feed her family.

The chicks take at least 70 days to gain over a kg weight before they are ready to be sold, and 80 days before they start laying eggs. Dapoli, 40 km away, provides a good market as several tourists have a taste for country chicken.

Poultry farming in this water-scarce region has become a profitable revenue model as these women need only 2-5 litres per day for 100 chicks.

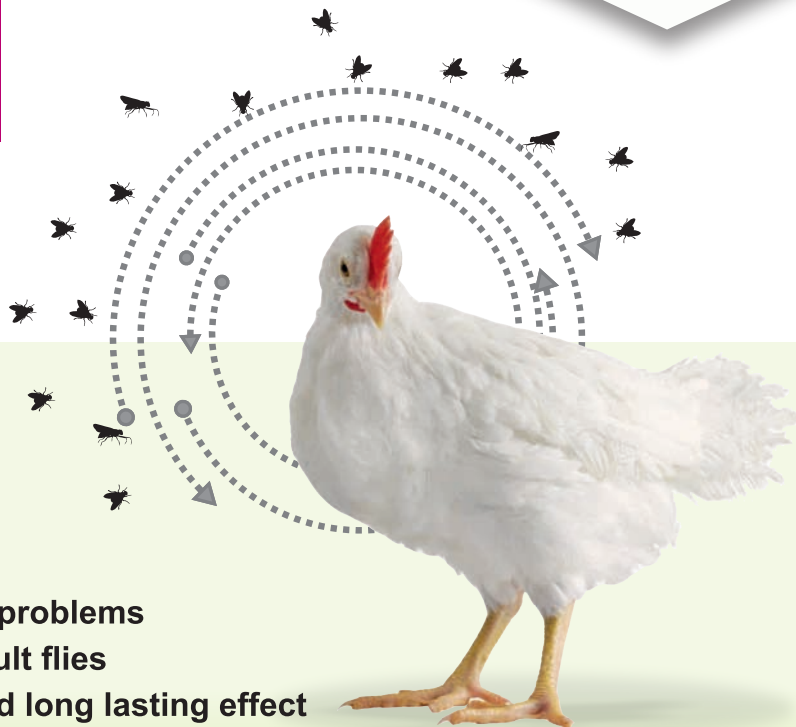
"Poultry farming has been carried in Vidarbha and Marathwada pockets too. In Raigad, we are seeing it as a good income source for women. This will prevent migration," said Mr Mhaske, deputy commissioner of animal husbandry. He added the government has also started similar poultry program in 45 tribal villages with over 840 beneficiaries.

Ms Neelam Makhejani, country director of Childfund, said they plan to scale up to include 5,000 women.

Mr Arvind Sutar, who coordinates with vendors to sell the hen, said there are 44 vendors in the region where chicken at the wholesale rate of Rs 125 per kg can be sold. "The women plan to use self-help groups to sell the hens in neighbouring villages to fetch better prices".



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## Coming together of leader, legend & industry Stalwarts: Co-creating a sustainable future

**INDIAN HERBS**, the pioneer & global market leader and No.1 Company in Herbal Animal Health Care Products Industry since 1951, hosted a series of Technical Seminars at Kolkata, Pune, Bangalore and Karnal from 23rd to 26th September, 2019 on its unique range of phytogenic poultry products with message “Food Safety through Feed Safety”.

More than two hundred and fifty delegates across the country converged to hear about trends, advances and opportunities in poultry sector from Dr Steve Leeson, Professor Emeritus, Department of Animal & Poultry Science University of Guelph, Canada. Dr Steve Leeson chaired this series of four seminars and delivered key note address on current issues and future predictions to broiler nutrition and nutritional options for sustaining gut health in an ‘AGP free production system’. The technical seminars were conducted by highly professional and strong marketing and technical team of INDIAN HERBS. Those present on the occasion were Mr Gaurav Agrawal, Director, Mr Balaram Bhattacharya, Exec. Vice President (Mktg. & Sales) and Dr Shivi Maini, DGM (Technical).

### Leader and Legend Come Together

The Chief Guest and Speaker of the seminars was Dr Steve Lesson, who is a legend and is one of the most respected and followed leading poultry consultant in the world. The aim of these seminars is to provide Asian poultry industry and their technical advisers an

opportunity to network with Dr Steve leeson who is having more than 40 years of rich experience of poultry nutrition. Also, to help poultry producers, integrators and feed producers improve productivity and profit margins with technical information on best alternatives of synthetic products and phytogenic poultry feed supplements.

### Originality Matters – Being Original

INDIAN HERBS is the originator of concept of Veterinary Ayurveda. INDIAN HERBS was the first company to harness the rich treasure of herbs by developing phytogenic products on modern scientific lines. It offers unique phytogenic alternatives for synthetic products with better efficacy at lower cost which are free from side effects and residual toxicity. The focus of INDIAN HERBS is on Food Safety through Feed Safety. These products are useful to produce antibiotic and residue free chicken and eggs.

The Technical seminar commenced with the welcome address by Mr. Balaram Bhattacharya, Executive Vice President (Mktg. & Sales), INDIAN HERBS. He greeted all the guests.

Mr Gaurav Agrawal, Director had given corporate presentation on INDIAN HERBS and informed the participants about the activities being undertaken at R&D Centre of INDIAN HERBS for ensuring best quality and result oriented phytogenic poultry products. He has also

appraised the guests about the various achievements of INDIAN HERBS during its long journey since 1951. Today INDIAN HERBS is the leading company of the world which is providing the efficacious phytogenic products on much economical prices than synthetic products.

Opening the technical session, Dr Steve Leeson, Professor Emeritus, Department of Animal & Poultry Science University of Guelph, Canada gave a comprehensive overview of current issues and future predictions of poultry production that are impacting sustainability. He also addressed the audience about the nutritional options for sustaining gut health in an AGP-free production system.

Dr Shivi Maini, DGM, Technical appraised the delegates about the research initiatives of the organization. Discussing about coccidiosis management strategies, Dr Shivi shared about the in-depth research carried by INDIAN HERBS R&D to cater poultry industry with a phytogenic multistage anticoccidial product ZeeCox which is having a unique philosophy of “Resting the Ionophores to prolong the efficacy” as a part of shuttle or rotation programme. Dr Shivi also appraised the delegates about the initiatives of the company to provide science based non-antibiotic phytogenic products for control of respiratory pathogens (Animunin) and gut pathogens and for improving gut histomorphogenesis & innate immunity

(Herbiotic FS). These trio combinations of Herbiotic FS, Animunin & ZeeCox, apart from promoting food safety also have elements of organic produce as well as animal welfare.

Dr Shivi also appraised about the global research initiatives of organization for in-depth research on Alternate Choline supplement ‘BioCholine’, Natural growth promoter product ‘HerBiotic FS’ and ‘Herbal C’. This research is focused to establish underlying mechanism of action of phytogenic products and is based on advances scientific techniques of transcriptomics, metagenomics, gut microarray, quorum sensing etc.

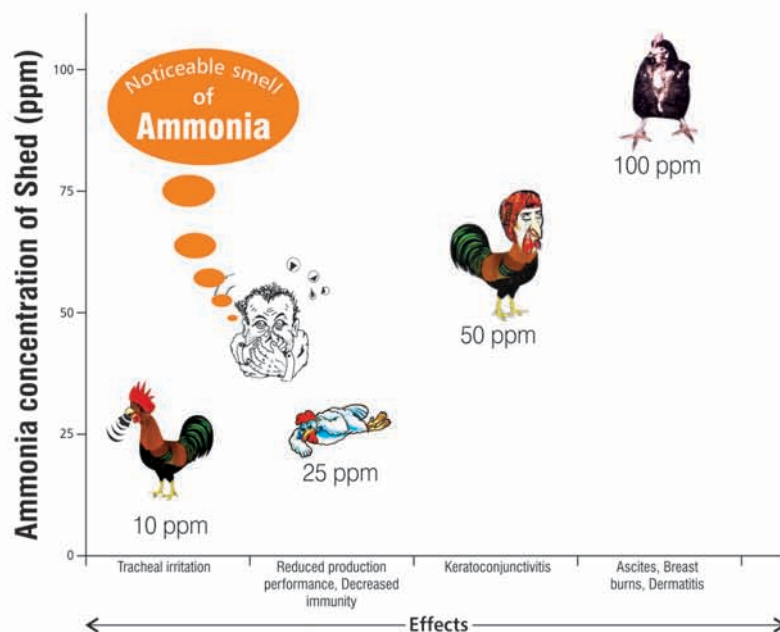
Indian Herbs also hosted a cocktail reception that offered participants ample opportunity to network with Dr Steve leeson and one another. Delegates praised the strong conference program from the knowledgeable expert Dr Steve leeson who advised about future predictions in poultry nutrition, comprehensive poultry management strategies, early chick nutrition, amino acid and vitamin nutrition, new research and solutions on AGP, gut health management and coccidiosis management. The keynote address of Dr Steve Leeson offered delegates a plethora of innovative concepts and their practical implementation for profitable poultry production.

This megaevent was a grand success of INDIAN HERBS to once again showcase organizations commitment to provide the best natural & phytogenics solutions to the industry for better poultry production and profitability.



# AmmoFree Premix

(For Ammonia Control in Poultry House)

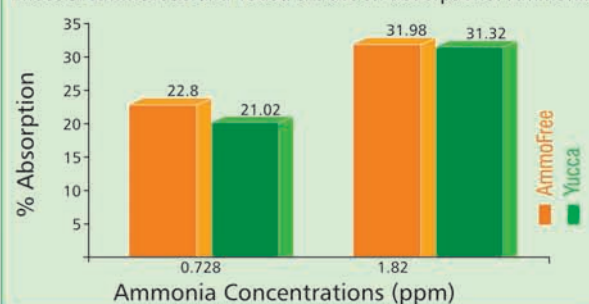


## At 25 ppm Ammonia in poultry shed

- Noticeable smell and eye irritation
- Upto 25% reduction in growth and production

## SCIENTIFIC VALIDATION

Effect of AmmoFree and Yucca extract on absorption of Ammonia



Effect of AmmoFree\* at broiler farm in winter (14° - 15°C) with noticeable ammonia smell

Group	Body Weight (g)	FCR	Livability (%)	Birds showing respiratory discomfort	Faecal NH <sub>3</sub> (g/kg dry faeces)	
					Day 21	Day 42
Control	1921	1.85	95.00	7	3.86	3.92 (+1.55%)
AmmoFree 100g/ton	1927	1.82	96.67	X	3.95	2.71 (-45.75%)

Trial at Commercial Poultry Farm under technical guidance of Dr. Rama Subba Reddy.

\* AmmoFree supplementation started on day 21

## USAGE

- For minimising the level of atmospheric and systemic ammonia and other noxious gases.
- To create healthier living conditions, reduce stress levels and to improve farm environment.
- For enhancing the level of beneficial gut microflora and to reduce disease susceptibility especially intestinal and respiratory diseases.
- For better farm productivity and profitability.

## FEED INCLUSION RATE

100g /ton of feed.  
200g/ton of feed, when the level of ammonia is more than 25ppm.

## PRESENTATION

1 kg



1 kg

**INDIAN HERBS SPECIALITIES Pvt. Ltd.**

C-215, 2nd Floor, Elante Offices, Plot No. 178 - 178A, Industrial & Business Park  
Phase - 1, CHANDIGARH (U.T.) - 160002, Ph. No. +91 9023247217 [ihspl@indianherbs.org](mailto:ihspl@indianherbs.org)

**We Know Herbs Better For Over 65 Years**











# Vesper Working with a New Vision

*Ruby Sharma takes over the reins of the company and is continuing the legacy of Vesper Labs*

**VESPER LABS, part of Vesper Group, was established by a visionary veterinarian Dr Suresh Sharma. Later Mrs Ruby Sharma, CEO of Vesper Group and Proprietor of Vesper Labs took over the reins of the company and is continuing the legacy of Vesper Labs. Poultry Fortune Editor M. A. Nazeer had an interview with Mrs Ruby Sharma, CEO, Vesper Group and Proprietor, Vesper Labs. Excerpts:.**



Mrs Ruby Sharma, CEO, Vesper Group  
Proprietor, Vesper Labs

**Bangalore:** VESPER LABS part of Vesper Group, was established by a visionary Veterinarian Dr Suresh Sharma for his son Mr Dhruv Sharma in 2002. The company has the best Research and Development Centre focused on manufacturing of pharmaceutical products and Poultry ND Killed vaccine by Vesper Group in India. Mr Dhruv Sharma managed the company very efficiently for the first 15 years.

Later Mrs Ruby Sharma, CEO of Vesper Group and Proprietor of Vesper Labs took over the reins of the company and is continuing the legacy of VESPER LABS, which has emerged as a leading player in domestic as well as international market.

Some of the most innovative products added to Vesper Labs in the last two years by Mrs Ruby Sharma's guidance

are like Ves Premix 250, NutriVes, Digestim, Mycotox, Orgomin, Spazyme, Sanikleen, VesChrom Lysin for poultry industry.

Vesper Labs has an active multi-disciplinary R&D programme largely focusing on developing new innovative products.

#### Vesper's vision:

- ▶ Create New Products and Catalyse research
- ▶ Maintain Quality and Ensure efficacy
- ▶ Provide Customer Service with practical solutions
- ▶ Double its turnover by 2020

#### Activities of both Vesper Group and Vesper Labs:

The main activities of both Vesper group and Vesper Labs are to

manufacture and distribution of Animal Feed supplements for Poultry, Cattle, Aqua and Pets, and also

Veterinary drugs and Biological products and poultry vaccines.

#### Range of products and services provided by Vesper Group and Vesper Labs:

As per the requirements of the market, Vesper Group manufactures "Quality Medicine" and supply the medicines to the farmers within stipulated period and save the animals from sickness and weakness, so as to lead to the development of farmer and provide healthy welfare to the society. Vesper produces unique products like Toxol, CMI plus, Respirom, Thermocare plus Masticare, OxyVes 1a inj and various Canine products etc.

#### Production units of Vesper Group:



**Unit 1:** Vesper Pharmaceuticals,  
No 104, Village Singapura,  
Vidyaranyapura Post,  
Bangaluru – 560 097.  
Herbal Farma  
Orchid Spa  
Vesper Labs

**Unit 2:** Vesper Pharmaceuticals,  
No 61/1 and 61/4,  
Village Sasuveghatta,  
Soladevanhalli,  
Hesarghatta Hobli.  
Bangaluru - 560 107.

**For more information one can contact:**  
Vesper Labs, C/o Vesper Group,  
Village Singapura, Vidyaranyapura  
Post – 560 097,  
Bangaluru, Karnataka.  
Email: vespergroupvet@gmail.com

## 42<sup>nd</sup> Vesper Foundation Day Celebration



*Dr Suresh Sharma along with wife Mrs Vijaya Sharma, daughter in law Mrs Ruby Sharma and grand children during 42nd Foundation Day of Vesper Group at Bangalore on October 25.*

Dr Suresh Sharma, born on 24th July 1948, is a Veterinary Science graduate from Bangalore Veterinary College, Bangalore, Karnataka and he graduated from this college in 1972.

He was proudly called as “Toxol Man” by late Dr B V Rao, Chairman of Venkateshwara Hatcheries Group those days.

Dr Suresh Sharma started Vesper Group on 25 October 1978 having modern Poultry, Cattle and Aqua Feed Supplements manufacturing facilities at Village Singapura, Vidyaranayapura Post, Bangaluru, Karnataka.



*Mrs Vijaya Sharma offering celebration cake to Mrs Ruby Sharma*

On 25 October 2019, Vesper Group celebrated its 42nd Foundation Day at its Head Quarter Vill. Singapura -Bangaluru, which was attended by Vesper Group, Managing Director, Dr Suresh Sharma, Mrs Ruby Sharma, CEO, Mrs Vijaya Sharma and other family members apart from office staff of Head Quarter.



Celebration was a fun filled function, a special cake cutting ceremony and launching of a new product RC-Ves from Vesper Labs - Bangaluru.



# UPDATE

## Knowledge on Poultry

A One Day Conference

### Topics for Presentation in 'UPDATE Knowledge on Poultry'

- Scenario of Egg and Broiler industry development globally. And state wise in India.
- Advanced models / practices in poultry sheds construction for Layers & Broilers.
- Technology advancement in Cages, Feeders, Waterers & Egg Collection systems etc.
- Advantages of Automation for better productivity and long term saving in costs in Layers & Broilers.
- Feed & Nutrition, Bio-security & Management.
- Diseases: Prevention & Control.
- Chicken & Egg Processing.
- Branding & Marketing of Eggs & Chicken to promote consumption.

*Note: Knowledgeable Speakers on the subject with good communication skills are invited to contact us to make presentation in "UPDATE" on the above topics on or before 30 November 2019.*

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- Gold Sponsor
- Silver Sponsor

#### Benefits to Sponsors:

Would incorporate Sponsor company name & logo on Event Backdrop & other display / promotional aspects.

**Conference - UPDATE**  
9:30 AM to 4:00 PM



## PF International Awards 2020

For Excellence and Contribution to Poultry Sector

National and International Awards for Best Performance and Contribution to Poultry sector development.

### Categories of PF International Awards

1. Best Layer Farmer Award
2. Best Corporate Layer Farmer Award
3. Best Broiler Farmer Award
4. Best Broiler Integrator Award
5. Best Sales & Customer Service in Poultry Award
6. Best Poultry Feed & Healthcare Products Distributor Award
7. Best Egg & Chicken Consumption Promotion Award
8. Best Manager in Production in Poultry Award
9. Best Marketing Man in Poultry Award
10. Best Poultry Scientist Award
11. Best Poultry Equipment & Automation Award
12. Best Poultry Healthcare Products Manufacturer Award
13. Best Poultry Feed Miller Award
14. Best Layer Breeder Hatchery Award
15. Best Broiler Breeder Award
16. Best Young Entrepreneur Award
17. Best Executive with Long Service Award
18. Best CEO in Poultry Industry Award
19. Life Time Achievement Award

**PF International Awards**  
6:30 PM to 8:00 PM

**12 March 2020**

**Venue:** CIDCO Exhibition & Convention Center,  
SION-Panwel Highway, Swami Pranabananda Marg, Sector 30-A,  
Vashi, Navi Mumbai - 400 703, Maharashtra, India.



11<sup>th</sup> Edition from NRS Group



**12-13-14 March 2020**

CIDCO Exhibition & Convention Center,  
Vashi, Mumbai, India

*Exhibition and Conference on Poultry  
Sector to update Knowledge and for  
Better Business Opportunities*



## Venue:

CIDCO Exhibition & Convention Center,  
SION-Panwel Highway,  
Swami Pranabananda Marg,  
Sector 30-A, Vashi,  
Navi Mumbai - 400 703,  
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AND ORGANISING EXPOS ON POULTRY &  
AQUACULTURE SECTORS.**

## CONTACT FOR PARTICIPATION:

The Chief Executive, IIPE 2020, NRS Events,  
BG-4, Venkataramanna Apts, 11-4-634, A.C. Guards, Hyderabad - 500 004, T.S, India



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# Zeus Biotech – A Core All Natural Nutrition and Healthcare products Mfg Co focusing on Quality

*Late Dr Jay Prakash Nair, Founder of Mysore-based Zeus Biotech Pvt Ltd, always believed that Quality will be recognized though it takes time, and it happened in case of Zeus Biotech. Indian companies are no where below international companies in maintaining quality standards, said Mr Abhilash Nair, Managing Director of 28 years old company, Zeus Biotech Pvt Ltd and son of Dr Jay Prakash Nair. Zeus Biotech is manufacturing over 35 products for Animal Nutrition and Healthcare. Poultry Fortune Editor M. A. Nazeer had an exclusive interview with Mr Abhilash Nair, Excerpts:*



**Mr Abhilash Nair**  
Managing Director, Zeus Biotech Pvt Ltd

## About Zeus Biotech and its Promoters

Zeus Biotech Private Limited was founded by the great visionary and Enzymologist,

Dr Jay Prakash Nair. Dr Jay Prakash Nair started his career in this industry in the year 1979. His vision was to introduce world class products at economical prices in the Indian poultry industry.

The company has three production units and a world class state of the art R&D and Quality Control facilities.

### Administrative Office (Office and Production Unit -1):

Zeus Biotech Pvt Ltd,

A-115, Industrial Estate, Hebbal, Mysore – 570 016



*Late Dr Jay Prakash Nair*

### Registered Office (R&D facility and Production Unit-2):

Zeus Biotech Pvt Ltd,  
Plot No.18 & 19, Belagola Food Industrial Area, Metagalli, Mysore – 570 016

### Production Unit-3:

Zeus Biotech Pvt Ltd,  
No.64#, Hootagalli Industrial Area, Hootagalli, Mysore – 570 018

### Overseas Office:

Zeus Biotech LLP,  
Umm Al Quwain (UAQ), United Arab Emirates (UAE)

The company exports its products to more than 19 countries. They are currently in the process of registering their products in three more countries.

**Poultry Fortune:** Do you have tie-up /



collaboration with any international company?

**Abhilash Nair:** No. All the products of Zeus Biotech are developed and manufactured by our own team.

R & D facilities

The company has Research & Development center spans over an area of more than 10,000 square feet with dedicated departments including Research & Development, Quality Control & Culture Collection. The state-of-the-art research facility is equipped with world class infrastructure and advanced equipments including Liquid Chromatography, Atomic absorption Spectrophotometry, Horizontal & Vertical electrophoretic apparatus, thermocycler, UV-Vis Research spectrophotometers, advanced microwave digesters etc to cater to our product / process development as well as product improvement needs, said Mr Abhilash.

The R&D team is currently working on various projects, some of which includes:

- a) Development of in-house production facilities for improvising Solid State and Submerged (liquid) Fermentation processes.
- b) Developing customized and feed formula-based enzyme solutions.
- c) Isolation and characterization of novel enzyme producing microbial strains.
- d) Isolation and characterization of novel probiotic strains.
- e) Novel process strategy for improvising organic mineral proteinate production.
- f) Novel process strategy for herb



**Mr Jose Jinesh, Director-Marketing**

based Solid State Fermentation.

- g) They are currently in collaboration with Bionest, which is an initiative of one of the premier CSIR institute i.e., Rajiv Gandhi Centre for Biotechnology for advanced microbial and molecular research.

analysis of various quality and safety aspects of the products to guarantee consistent quality. The QC department also carries out routine inspection of environmental conditions to assure quality and safety of water, air and surface of the production facilities. The culture collection has more than 10 in-use microbial strains which cater to our solid and submerged (liquid) fermentation requirements, stated Mr Abhilash Nair.

#### Key persons of the company

- a) Mr Abhilash Nair, Managing Director, who is the son of the founder of the company Dr Jay Prakash Nair, focusing on the key responsibilities of Production, R&D and Quality Control
- b) Mr Jose Jinesh is Director-Marketing
- c) Mr Silambu Selvan is Director-Material Management
- d) Mr Vinodh P.K is Director-Finance



**Directors of Zeus Biotech**

The company dedicated Quality Control laboratory facility ensures the quality of raw materials, semi-finished and finished products through systematic

**PF:** When and how did you start this company and how are you able to build up growth in business?

**Abhilash:** The company started in the year 1991 and established its first fermentation unit to manufacture Feed Specific SSF Enzymes. During that period, the concept of enzymes was very new to the poultry industry in India and the company had to struggle a lot to bring the concept of better nutrition by the addition of enzymes. Later on, Zeus Biotech introduced Probiotics with a very well established brand name, **MICROGUARD**. The company then introduced Organic Minerals in the year 2010 using fermentation technology. The company was keen on introducing the latest concepts to the Indian Animal Industry through the visionary Dr Jay Prakash Nair. Since the company was



**A view of Zeus Biotech Administration office and production Unit –1**



*Poulrty Fortune Editor M. A. Nazeer with Abhilash Nair and Jose Jinesh*

mainly focusing on concept products, it was struggling in the initial stages to educate about the efficacy of the concepts aimed at improvising the efficiency and profitability of the livestock industry. These concepts were well accepted later which paved the way towards the growth of the company seen in the later years. On the basis of the solid foundation laid by our founder, the company has been growing at an appreciable pace.

#### Category / Range of products

##### 1. Feed Specific Enzymes (Brands: POLYZYME, BROZYME, XYLAZYME)

USP: Zeus Biotech was the first to introduce SSF Enzymes produced exclusively for animal feed industry. Our enzymes are produced by Solid State Fermentation (SSF) technology using rice or wheat bran and other feed ingredients as a media, contains no filler or carrier material, making them 100% natural. Our unique process uses feed similar matrices and conditions to create a set of feed specific NSP enzymes with high specificity and stability, proven and established under feed and gut conditions.

##### 2. Probiotics (Brands: MICROGUARD, NE-Guard)

USP : Our probiotic combinations are made from new generation spore forming probiotics – Bacillus species, which are stable and efficient compared to the non-spore forming. The unique set of strains have been isolated over a period spanning 25 years and selected through a series of stringent in-vitro and in-vivo safety and efficacy trials. Our strains are proven and established as an alternative to feed antibiotics and also for its thermostability, ability to colonize the gut to reduce the

pathogenic bacteria.

##### 3. Organic Minerals (Organomin Forte, Mn Yeast, Zn Yeast, Cu Yeast, Se Yeast, Cr Yeast, etc;)

USP: We produce fermented organic trace minerals/ORGANOMIN-FORTE by an exclusive fermentation technology making it one of the most



*Silambu Selvan, Director, Material Management*

bioavailable form of organic minerals. The uniqueness offered is through the proteinated mineral complex

supported by a set of fermentation based micro-metabolites presenting additional matrix support and stability. The complex thus offers high bioavailability which is very evident from the lower product dosage recommendation.

##### 4. Yeast culture (Brands : RUMIYEAST, LIVESAC)

USP : Rumiyeast is an exclusive rumen specific double strain yeast culture supplemented to stimulate growth and multiplication of ruminal microbiota. Rumiyeast is recommended to be included in feed as a probiotic supplement for ruminants including dairy cows, buffaloes, sheeps & goats. A unique product with an inimitable combination of beneficial microbes and fermentation metabolites, Rumiyeast offers a matrix containing cells, fermentation metabolites and enzymes produced by *Saccharomyces cerevisiae*, *Aspergillus oryzae* and *Aspergillus niger* through a unique Solid state Fermentation based technology.

##### 5. Organic acids (Brands : NOVACID, PHYTOPLEX)

USP: Our organic acid products are a combination of selected organic acids and time tested spice extract. This combination gives the best result to check contamination in the feed and also helps to reduce the bacterial load in the gut.

##### 6. Toxin binders (Brands : NILTOX, ZENOTOX)

USP: A unique combination of Phytomolecules, Curcuminoids and Diatomaceous earth which acts by three way detoxification strategy including selective binding and removal of toxins, protection against toxin induced tissue damage and detoxification.



*A view of Zeus Biotech R&D Facilities and Production Unit-2*





**Dr Channegowda, Vice President-Technical**

**7. Production enhancers for broilers, layers, breeders (Brands: GROMIX, LAYMORE, BREEDON)**

**USP:** Production enhancers produced by Zeus helps to optimize the productivity by improving digestibility, gut integrity, absorption and utilization of nutrients and health status of the animal/bird. Specific production enhancers are available for Broilers, Layers and Breeders.

**8. Non AGP Growth Promoter ( Brands : NATUSOL)**

**USP :** NATUSOL is a combination of probiotics, organic acids, phytomolecules and mannan oligosaccharides. NATUSOL is a natural alternative to feed antibiotics.

**Sales & Technical Services network in India**



**Zeus Biotech production Unit-3**

Zeus has a sales and technical team spread all over India. The sales team consists of 35 well qualified and experienced persons. They have 4 in-house technical experts and a group of technical consultants to support the sales team. The company has a well-established distribution channel to ensure proper reach and timely supply of their products.

**Acceptance level of your products**

The products are well accepted and established among the customers due to its quality and proven efficacy. Our customers appreciate our products for its quality and consistency. Many of our customers have been using our products consistently for years together because of the confidence they have on us and our products. This is the scenario not only in the domestic market, but also in the international markets.

Our sales and technical team are prompt in providing post sales service to ensure constant support and guidance to the customers on the usage of our products and also to provide nutritional and health care solutions in challenging conditions, which is one of the major reasons for our expanding customer base. We also support our customers by providing analytical services for various nutritional and critical parameters of feed and feed related materials as a value addition.

**Customer Care division in the co**

We have a dedicated customer care team to take care of all queries from our customers. Our customers are happy with the timely response from our customer care team, he stated.



**Vinodh P.K, Director-Finance**

**Quality of products and services**

All our products are well accepted in the domestic as well as international markets due to the quality standards we maintain, which is at par with international products. Our products compete with the leading international products in terms of quality and product effectiveness.

**PF: What are the best aspects of Zeus Biotech ?**

**Abhilash:** Research & Development: Strong technical based in feed specific Solid State and Submerged Fermentation process and technology, with in-house facility to carry out designing, characterization, screening, monitoring and evaluation of novel molecules and products.

**Quality Standards**

Stringent analysis and monitoring of the entire production process initiated from quality and safety analysis of raw materials, semi-finished and finished products, all carried out by our in-house team with a support of a world class and state of the art quality control laboratory.

**Expertise & Market presence**

One of our major strength is our experience and expertise in development and manufacturing of quality and effective feed supplements spanning over a period of more than 27 years.

**Cost effective & efficient products**

As an Indian company our ultimate goal was to improvise the quality as well as the commercial viability of livestock farming, which to a very good extend

has been achieved through the wide range of economical and effective nutritional and health care solutions offered.

We always ensure quality products at an affordable cost to make poultry and dairy farming effective, efficient and economical. We also offer customized solutions for the large integrators and breeders to suit their varying nutritional needs.

#### On use of chemicals and antibiotics in the product

There is a misconception among the public that our industry use harmful chemicals. However, this is not true since the feed and poultry industry do not use or encourage the use of harmful chemicals.

Zeus Biotech produces all natural feed supplements / additives which do not contain any antibiotics or harmful chemicals, said Abhilash Nair.

#### Zeus Biotech after the demise of Dr Jay Prakash Nair Saheb

Dr Jay Prakash Nair had built a strong base in terms of designing and developing concept based products. He had also built a strong R&D team to ensure that there was continuous work on developing new products and also in improving the existing products. This strong foundation gave us the strength to take the company forward after his death. We concentrated in strengthening the marketing team and also working closely with our dealers and associates in India and abroad to ensure that they are confidence in us did not come down after our founder's death.

In due course, we increased our production capacity by commissioning a new production facility. Our R&D centre was also completely revamped to cater to the growing needs of the industry. All this was possible because of the strong foundation laid by Dr Jay Prakash Nair and also the support provided by the core team of the company, Abhilash told.

#### The two friends Abhilash and Jose Jinesh

Mr Abhilash Nair told, My father Dr Jay Prakash Nair and Jinesh's father were childhood friends. Jose Jinesh joined Zeus Biotech in the year 1995 and I joined Zeus in the year 2000. Our friendship and bonding was much before both of us joined Zeus Biotech



*The Friends – Abhilash and Jinesh*

since both our families were very close from our fathers' time. Since we knew each other from our childhood days, it was natural that our friendship and understanding helped us to build Zeus Biotech to what it is today. We both have seen and experienced the tough times Dr Jay Prakash Nair had while building up the company.

#### Future Plans

1. Introduction on Novel concepts based on current R&D works.
2. Continual product & process improvement.
3. Popularize the use of SSF Enzymes by highlighting its importance in animal nutrition because of its specificity and uniqueness.

#### Targets

1. To achieve an annual turnover of 250 crores by 2025.
2. To expand the market presence to 60 countries by 2025.

#### Give importance to biosecurity

Mr Abhilash Nair said, We normally advise our customers to focus more on quality feed / feed ingredients and nutritional supplements / health care products and to give utmost importance to biosecurity. Quality of raw materials is the key to ensure efficient, effective

and safe final products. Ensure that the manufacturer is having proper infrastructure and facility to assure the quality of the products.

Nutritional / health supplements have a major role in the efficiency of feed and performance of animals and hence do not compromise on quality of supplements.

Our Indian poultry industry has evolved over the years with lot of positive changes and we are proud to be a part of this industry. However, we feel that our industry needs to work more in creating awareness among the public with regard to the food safety and health benefits of consuming chicken and egg.

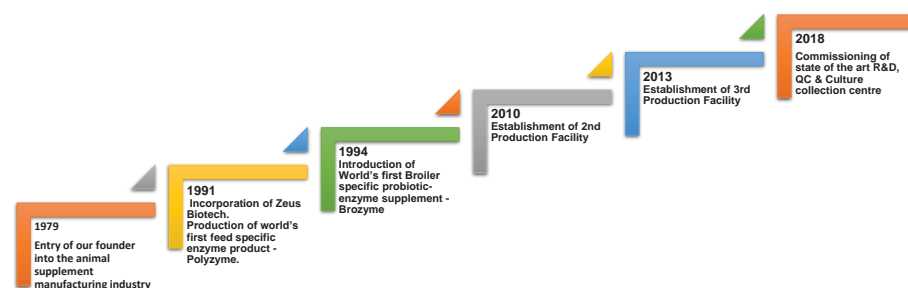
#### 1) Core Production Strength

The core manufacturing strength of Zeus Biotech is its own infrastructure and manufacturing facility to carry out all product related upstream and downstream processing requirements apart from the key process/manufacturing techniques including Solid state fermentation (SSF), Submerged fermentation, processing and handling of liquid and solid products including automatic filling and packing. Zeus Biotech which specializes on various aspects of SSF technology dedicated for manufacturing animal feed supplements currently holds one of the largest SSF manufacturing facilities in the country with more than 18 fermentation chambers.

#### 2) Own strains and details

The in-house microbial culture collection centre of Zeus Biotech currently maintains proprietary fungal and bacterial strains including *Aspergillus niger*, *Aspergillus oryzae*, *Aspergillus ficum*, *Trichoderma reesei*, *Bacillus subtilis*, *Bacillus coagulans*, *Bacillus licheniformis*, *Bacillus polymyxa*, *Bacillus*

### The Beginning & Milestones





megaterium, *Bacillus mesentericus* which are being used regularly for our product and production needs. The copies of the strains have also been deposited at Microbial Type Culture Collection, Chandigarh, India and also in DSMZ, Germany, both of which are recognized as International Depository Authority by World Intellectual Property Organization (WIPO), Geneva, Switzerland.

### 3) Zeus Group details

#### a) Zeus Biotech Pvt Ltd

Zeus Biotech produces and markets all natural animal feed supplements having its expertise in Solid State Fermentation to produce Feed Specific Enzymes, Fermented Organic Trace Minerals and Yeast culture. It also has a state of the art liquid fermentation facility to produce Spore forming Direct Fed Microbials (Probiotics). Apart from these, it offers formulations to enhance production, to replace AGPs, to enhance pigmentation and to provide solutions for Toxins. It also provides customized and specialized solutions based on the requirement of the customers.

#### b) Jaysons Agritech Pvt Ltd

(Nutritional Supplements for Dairy, Sheep, Goat & Beef Cattle)

Jaysons Agritech manufactures nutritional feed supplements which includes Ruminant specific Yeast culture, Organic trace mineral complexes to enhance reproductive capabilities, Herbo-mineral complexes to optimize milk yield.

#### c) Zeus Feed Supplements Pvt Ltd

(Water Soluble Farm Care Products)

Zeus Feed Supplements is engaged in the marketing of innovative water soluble and liquid feed supplements manufactured by Zeus Biotech Private Limited. The products range include water soluble enzymes-probiotics complex, antibacterial preparations, water soluble immunomodulators-cum-stress inhibitors, organic acids-phytomolecules complex, etc.

#### d) Zymonutrients Pvt Ltd

(Nutritional Supplements for Equine, Aquaculture, Zoo Animals & Pets)

Zymonutrients offers some unique Natural solutions ranging from Natural Herbs & Spices based product to replace Antibiotics, Digestive stimulants, Yeast mannoglucans,



**Abhilash Nair**

Organic immunostimulants, Direct Fed Microbials and Nucleotides catering to the Equine and Aquaculture industry and also for Zoo Animals and Pets.

### 4) Note on SSF Enzymes

Feed is basically a raw and unrefined matrix containing unprocessed ingredients including corn, soya, rice bran, wheat, ragi etc. Due to its raw form, a near to complete digestion of these ingredients especially the non-digestible NSP fraction, requires a complex set of enzymes with very high specificity and efficacy to degrade each and every chemically defined structure of the NSPs including the most abundant Xylan and Cellulose as well other less abundant fractions including pectins, glucans, mannans etc., to explore the exact nutritional potential of feed ingredients.

Zeus Biotech which has been specializing in feed specific Solid state fermentation from the last 28 years, explores and adopts the same practical concept detailed above in its enzyme manufacturing to produce feed specific enzymes using a proprietary Solid State fermentation technology. Our exclusive process uses microbial intelligence to understand the molecular and chemical nature of feed based NSP ingredients and thereby induces the microbe to secrete a set of enzymes with the ratio and concentrations purely targeted on the biochemical nature of feed and feed ingredients. The process uniqueness thus delivers enzymes having very high specificity and efficacy solely towards feed and feed based ingredients which however are lower in Submerged/Liquid fermentation.

This shortcoming in specificity is owed to process limitations including restrictions to use raw and unrefined media under the liquid conditions, which only allows refined, water soluble and non-feed specific media for production. The process which may lead to production of very high levels of enzymes, unfortunately will lack the specificity and complexity, which is a basic prerequisite of enzyme based products for feed application. Further, the liquid based enzymes are targeted for a broader industry including textile, leather, fruit, paper, detergent etc, rather than for a specific requirement.

The SSF based enzyme products produced by Zeus Biotech, caters only for the feed industry using selected strains, unique process and a technology mastered over years of tests and trials. Finally, when it comes to the efficacy of enzymes in digesting feed based substrates, the specificity of the enzyme which is acquired by an enzyme during the process of its creation is what matters rather than the units of activity measured using refined substrate molecules.

### Note on the last project of JP Sir (Equine products)



**Late Dr Jay Prakash Nair**

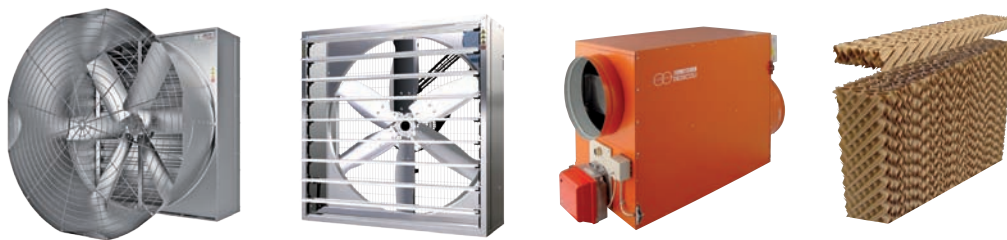
Dr Jay Prakash Nair was known for his passion towards his work. During his last days, he was very keen on introducing equine feed supplements. This was his last project. His passion was so strong that during his last days, inspite of his acute vision problem and deteriorating health condition, Dr J Prakash Nair called his PA to his residence and completed the technical work related to the product development. The next day, he passed away. Since this was his last project, all of us in Zeus Biotech were keen that we make sure that his final project had to be accomplished with the success he wanted it to achieve. It has been 9 years since he has passed away and we are proud of the fact that our equine / horse supplements have been well accepted in most of the race clubs and stud farms in India and some overseas countries, said Mr Abhilash Nair



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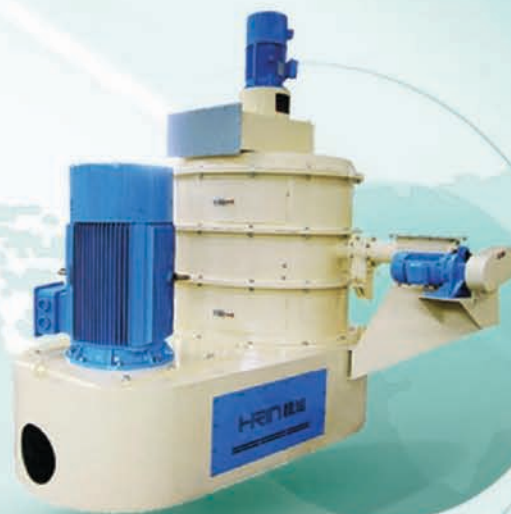


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# Garlic as Herbal Feed Additive in broiler Chicken

## Highlight Points

The poultry farming in India occupies the top most position as compared to its other counterpart livestock. The fast growing nature of broiler chickens and their short generation interval have been associated over the years with the use of antibiotic growth promoters in animal feeds in order to improve the quality of the product. However, the use of antibiotic based growth promoters is presently facing serious problem which is development of microbial resistance to the products and their potential harmful effects on human health. Garlic has several beneficial effects on both humans and animals having antimicrobial, antioxidant, anticancer, immunomodulatory, hypoglycemic, anti-inflammatory as well as antihypertensive properties. Therefore we can use garlic as herbal feed additive for broiler.

**Bornalee Handique**, Ph D Scholar, Indian Veterinary Research Institute, Izatnagar, Bareilly, UP.

## Introduction

Feed is the major component of total costs of poultry venture as 80% of the total expenditure is on procurement of feed. The use of antibiotic based growth promoters is presently facing serious problem and has raised global concern as some reports revealed their ill effects among which are development of microbial resistance to the products and their potential harmful effects on human health. Moreover, antibiotics lead to drug resistance in bacteria and drug residues in meat. These short comings lead to search for alternative substances that eliminate these threats. Garlic, a member of the Allium family (Liliaceae), has been used traditionally for ages to treat a wide array of diseases, namely, respiratory infections, ulcers, diarrhea and skin infections. Garlic as a plant with antibiotic, anticancer, antioxidant, immunomodulatory, anti-inflammatory, hypoglycemic and cardiovascular-protecting effects. Moreover, garlic is very rich in aromatic oils, which enhance digestion and positively influenced respiratory system being inhaled into air sacs and lungs of birds. Also it was found that garlic has strong antioxidative effects. These functions are mainly attributed to the bioactive components present in garlic which is a sulphur containing organic compound known as diallyl polysulphide which possess antimicrobial activity that could be responsible for the growth promoting effects of garlic. Recently, various probiotic in powder form are available in the markets which are commercially used in broiler chicken as growth promoter. Further, to enhance the activity of these probiotics, prebiotics are essential. These prebiotics are found naturally in a variety of food. The most common prebiotics are inulins and fructooligosaccharides (FOS). The inulin is found in significant quantities in several vegetables specially garlic.

## Active compounds present in garlic

The flavonoid and organosulphur components of garlic and garlic derivatives have therapeutic and antioxidant effects in both broilers and layer hens. Garlic has at least 33 sulphur containing substances, several enzymes, 17 amino acids, and trace minerals (selenium). Allicin (of

which allin is the precursor) is the main sulphur containing component and usually consists more than two third of the total thiosulfinates (about 4 g/kg fresh mass). Allicin is formed when slicing or crushing the fresh garlic and breaks the intercellular compartments which separate alliin and alliinase. Garlic derivatives which are produced by means of heating or solvent extraction methods are usually contain alliin, however also are free of allinase; therefore, no allicin may be found in the final product. The oil and steam-distilled derivatives are usually rich in secondary metabolites for example ajoene, but there is no scientific approve on the comparable chemical characteristics of these secondary active compounds in fresh garlic. The another important compound of garlic is inulin and the decreased digesta pH of birds fed garlic could be attributed to higher volatile fatty acids production because of the prebiotic effects of inulin and its hydrolysates which may help to overcome of useful microbes colonization.

## Antimicrobial effect of garlic

Phytobiotics may reduce growth of pathogenic microbes, thus providing a balance of gut microflora. The active compound in garlic (allicin) has well known antimicrobial properties and decrease gut pathogenic populations. Garlic also showed antiviral, antibacterial, antifungal and antiparasitic activities. Crude extracts of garlic decreased or eliminated *Hymenolepis*, *Aspicularis*, *Histomonas* and *Eimeria* parasites in chicken.

## Hypocholesterolemic effects of garlic

One of the well known therapeutic properties of garlic is its hypocholesterolemic effect. Hepatic cholesterol concentrations in chickens fed 2% garlic 14 d. Increasing the levels of garlic meal and using garlic meal plus  $\alpha$ -tocopherol considerably reduced total and low-density lipoprotein cholesterol and increased high-density lipoprotein cholesterol in broiler blood. Likewise 3% dietary garlic meal decreased plasma cholesterol and breast and thigh muscle cholesterol in broilers. Lower activities of hydroxymethylglutaryl-coenzyme A reductase, cholesterol 7  $\alpha$ -hydroxylase, and fatty acid synthetase when chickens were supplemented with polar





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fractions of garlic powder (garlic equivalent to 1, 2, 4, 6, and 8% fresh garlic paste) for 3 weeks. The different garlic products may be allicin-rich which made from raw garlic or non allicin-rich which is produced from processed garlic. These products may differ significantly in hypocholesterolemic effects.

### Immunomodulatory properties of garlic

Garlic has a positive effect on functions of the immune system. Garlic supplement in broilers augmented antibody production against Newcastle disease virus (NDV). Garlic treatment increased lymphocyte proliferation, white blood cells (WBC) count and the relative weights of spleen and thymus of broiler chickens. The effect of garlic supplement on increases in the size of the spleen, bursa fabricius and thymus of chickens are probably attributed to the more lymphocyte proliferation and the increase in WBC counts. Garlic at 10 g/kg diet increased anti-NDV, anti-SRBC and anti-Brucella abortus antibody productions, while 30 g/kg diet had less stimulatory effects. Supplementation of garlic extract to a culture increased the production of IL-2, IL-12, INF- $\gamma$  and tumor necrosis factor (TNF)- $\alpha$  in stimulated splenocytes. The antioxidative properties of garlic due to improved functioning of the immune cells by protecting them from oxidative stress. Garlic or garlic plus tocopherol would be expected to have a much higher antioxidant power or biological effects, among which are reducing the production of free radicals.

### Effect on performance of broiler

Supplementation of garlic in broiler diet increase feed intake by improving palatability of the feeds. The improvement in body weight and body weight gain of the broiler birds using garlic in their rations is probably be due to the fact that allicin (an antibiotic substance found in garlic), inhibits growth of intestinal bacteria such as Staphylococcus aureus and Escherichia coli and inhibit aflatoxins producing fungi. Garlic supplements in broiler chicken diets have been recognized for their strong stimulating effect on the immune and digestive systems in birds.

### Effect on carcass quality

Garlic controlled and limited the growth and colonization of numerous pathogenic and non pathogenic species of bacteria in the gut leading to improved translation of feed to meat. Supplementation of garlic to broiler chicken diet increase dressing and breast percentage. Inclusion of garlic powder in the diets of broiler chicken lower the percentages of these organs (abdominal fat, liver and gizzard). The reduction in the percentage of abdominal fat for the diets that supplemented with garlic powder may be attributed to the action of garlic which have been reported to possess lipid lowering effects

### Conclusion

Herbal plants have health promoting effects in poultry and these substances are considered as potential alternatives to antibiotics. Garlic and garlic derivatives in poultry improve performance, cholesterol reduction in blood and products and also antimicrobial properties. Therefore garlic can be use as a herbal feed additive for applications in organic and conventional poultry production.

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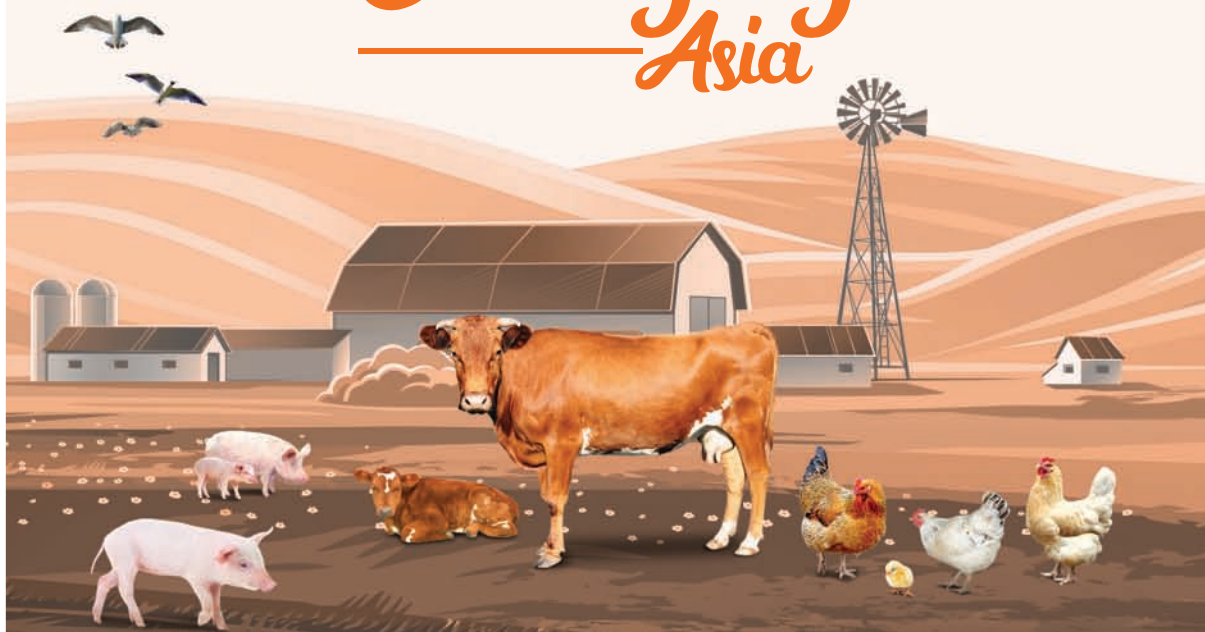
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# Relative Efficacy of Water Acidifiers in Broiler Performance and Economics

## Highlight Points

► The common practice of managing water hygiene in Indian broiler farms is using a water sanitizer along with a water acidifier. ► Drinking water quality for poultry production should maintain a pH between 6.8-7.5 and the absence of *E. coli*. ► Acid LAC W Conc. Liquid is a combination of various organic acids and quaternary ammonium compound (didecyldimethyl ammonium chloride) used in poultry drinking water for managing water hygiene. ► Acid LAC W Conc. Liquid helps in reducing water pH and eliminate microorganisms, thus improving water quality and flock performance.

Venket M Shelke, Amit Kumar Das, Partha Pratim Das and Saravanan Sankaran,  
Kemin Industries South Asia Pvt Ltd

## INTRODUCTION

In Indian broiler farms, the common practice of managing water hygiene is using a water sanitizer along with a water acidifier. A good quality drinking water for poultry production should maintain a pH between 6.8-7.5 and the absence of bacteria, especially *E. coli*. Several products are available in the market like water acidifiers and sanitizers, which are used to reduce water pH and eliminate microbial load in the water. Acid LAC™ W Conc. Liquid is a Kemin's solution for managing water hygiene, which is a combination of various organic acids and quaternary ammonium compound (didecyldimethyl ammonium chloride). It helps in reducing water pH and eliminate microorganisms, thus improving water quality and flock performance. A study was conducted to evaluate the efficacy of Acid LAC™ W Conc. Liquid in comparison with the combination of commonly available water acidifier and water sanitizer containing sodium dichloroisocyanurate (NaDCC) on performance parameters in commercial broiler chicken.

## TRIAL DESIGN

The broiler trial was done at a customer place in Western part of India for a period of 42 days. A total of 4,904-day-old Cobb-430 commercial broiler birds were placed in two houses having deep litter system of rearing. The birds were divided equally into two groups and had separate water tanks. Throughout the trial, birds were fed with crumble feed in pre-starter, starter and finisher diets as per standard ration. Water was provided ad libitum till the end of trial and was treated with experimental products as per manufacturer's recommendations (Table-1). The management practices and vaccination procedures were followed as per breed specifications for both the groups.

During the trial, performance parameters like mortality percentage and body weight were monitored and recorded weekly. At the end of trial, feed intake, body weight, livability percentage, feed conversion ratio (FCR), European efficiency factor (EEF) were measured and, economic benefits were calculated and compared.

**Table-1: Trial design and dosage details of experimental groups**

GROUPS	NUMBER OF BIRDS	DOSAGE
Acidifier + NaDCC	2,452	100ml/500 liter of Acidifier + 1 tablet (5g)/500 liter of NaDCC in drinking water
Acid LAC™ W Conc. Liquid	2,452	125ml/500 liter of drinking water





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## RESULTS

## 1. LIVABILITY PERCENTAGE

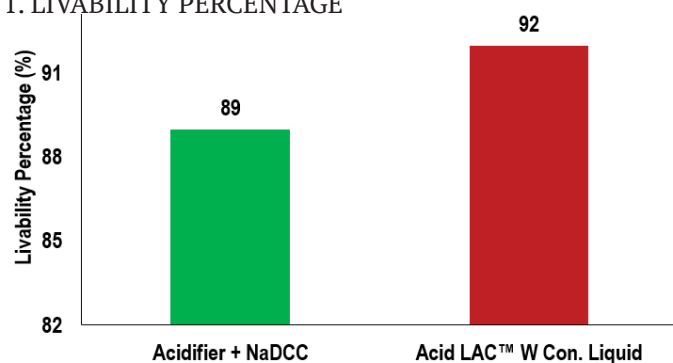


Figure-1: Livability percentage of treatment groups at the end of trial.

## 2. AVERAGE BODY WEIGHT

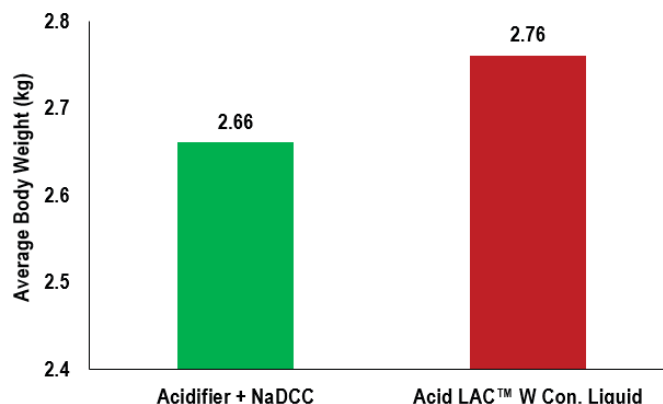
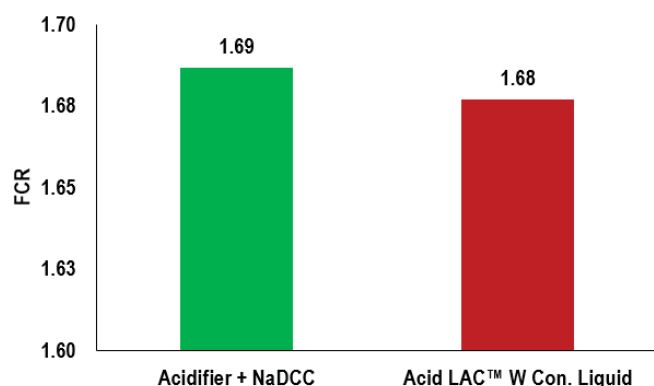


Figure-2: Average body weight of treatment groups at the end of trial.

## 3. FEED CONVERSION RATIO (FCR)



## 4. EUROPEAN EFFICIENCY FACTOR (EEF)

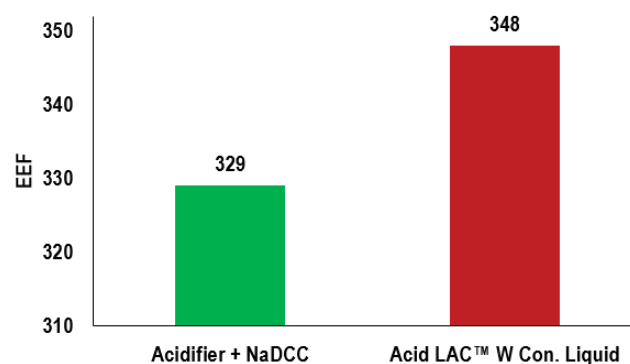


Figure-4: European Efficiency Factor of treatment groups at the end of trial

## 5. ECONOMIC BENEFITS

Table-2: Economic benefits of the treatment groups

PARAMETERS	ACIDIFIER + NaDCC	ACID LAC™ W CONC LIQUID
Number of birds	2,452	2,452
FCR	1.68	1.69
Average body weight (kg)	2.66	2.76
Total live weight harvested (kg)	5,783	6,246
Total feed consumed (kg)	9,698	10,556
Production cost per kg live weight (INR)	69.96	69.42
Net income (INR)	4,03,617	4,35,320
Extra income over Acidifier + NaDCC (INR)	-	31,703
Extra income for 1 million broiler birds (INR)	-	1,29,29,445

## DISCUSSION

Acid LAC™ W Conc. Liquid supplementation showed improved performance than the combination of acidifier with NaDCC in broiler birds. The performance of Acid LAC™ W Conc. liquid can be attributed to the synergistic effect of the blend of mixed organic acids in reducing water pH and microbial load; as well as quaternary ammonium compound which helps in killing microorganisms present in water. The performance improvement based on present study had generated an extra income of ₹31,703 by supplementing Acid LAC™ W Conc. Liquid.

## CONCLUSION

Supplementation of Acid LAC™ W Conc. Liquid demonstrated better performance against the combination of commonly available water acidifier and sanitizer in commercial broiler chicken in terms of improved livability and body weight gain with better FCR. Thus, water treatment with Acid LAC™ W Conc. Liquid can enhance the broiler performance and livability with better economic returns.

*anitha.j@kemin.com*

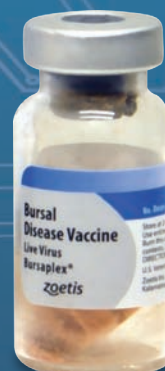


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# Role of Probiotic in Chicken Feeding

## Highlight Points

► Probiotic, an alternative to antibiotics. ► Probiotics are often called "good" or "helpful" bacteria because they help to keep gut healthy. ► Probiotic and prebiotic have a synergistic strategy that beneficially affects the host. ► Probiotics when administered via the feed are safe in human, birds and environment. ► When added to the feed, it boosts microbial population in gut which is responsible for developing natural resistance and fight against diseases.

Kashmiri Begum and Gaichamdinliu Gonmei, College of Veterinary Science, Assam Agricultural University

The modern rearing methods practiced in poultry farming induce stress and commercial diets used for feeding changes the composition of the microflora which makes the birds susceptible to debilitating effects of stress and disease infection.

It is a known fact that in-feed use of antibiotics as growth promoters in farm animals, especially in poultry has been extensive to control sub-clinical bacterial infections and boost the performance. The evolution of antimicrobial resistance among pathogenic bacteria in farm animals and the concern about the side-effects of their use like antibiotic residues in animal products and increased risks for human health has produced a climate in which both consumer and manufacturer are looking for alternatives. In the year 2006, the European Union officially banned the usage of all antibiotics as animal growth enhancer. An alternative is the use of Probiotic, which are made from living micro-organisms. At the end of 20th century, Russian noble prize winner and father of modern immunology, Elie Metchnikoff, a scientist of the Pasteur institute, conceptualized 'Probiotic'. In 1907, Metchnikoff proposed that the acid producing bacteria in fermented milk products could prevent "fouling" in the large intestine and if consumed regularly, lead to a longer, healthier life. Lilly and Stillwell (1965) coined the term 'Probiotics' derived from Greek word "pro bios", meaning "for life". Tortuero (1973) first employed living bacteria to replace antibiotics in poultry.

According to WHO/FAO (2008) "Probiotics are live microorganisms which when administered in adequate amount confer a health benefit on the host." Probiotic are live bacteria and yeasts that are good for health especially for digestive system.

Probiotic are often called "good" or "helpful" bacteria because they help to keep gut healthy.

### Modes of Action of Probiotic:

The mode of action of probiotic feed additives is mainly based on competitive exclusion, bacterial antagonism and immune modulation. The concept of competitive exclusion indicates that cultures of selected beneficial microorganisms supplemented in the feed, compete

with potentially harmful bacteria in terms of adhesion sites and organic substrates to prevent colonization by pathogenic microorganisms, thereby blocking receptor sites and preventing the attachment of other bacteria including harmful species. An antagonist effect is produced through the secretion of substances that inhibit the growth and development of pathogenic bacteria, such as bacteriocins, organic acids and hydrogen peroxide. Micro-organisms, once established in the gut, may produce substances with bactericidal or bacteriostatic properties. These compounds may not only reduce the number of viable pathogenic organisms but may also affect bacterial metabolism and toxin production. Bacteriocins produced by lactic acid bacteria have been reported to be able to permeate the outer membrane of gram-negative bacteria and subsequently induce the inactivation of gram-negative bacteria in conjunction with other enhancing anti-microbial environmental factors such as low temperatures, organic acids and detergents. Probiotics act as a stimulus for the immune system. Regular and judicious use of probiotics has a striking effect on the immune system viz., stimulation of both humoral and cell mediated immunity through enhanced production of natural interferons/cytokines, increased macrophage, lymphocyte and natural killer (NK) cell activity, up regulated oxidative burst in heterophils, and increased immunoglobulin.

### Commonly used Microbes and its key properties

There are several types of probiotics available in the market to be used in poultry, with a wide range of microorganisms present and with different metabolic activities and action modes. As live microorganisms, probiotics include bacteria, fungi and yeasts, when supplemented in feed causes improve host intestinal microbial balance and growth performance. There are two population of microorganisms found within the gastrointestinal (GI) tract of poultry: the autochthonous bacteria, colonising gut by environmental exposure and normal feeding activities and allochthonous bacteria introduced as a dietary supplement through feed or drinking water as probiotics. According to Kabir (2009) the most commonly used species are: *Lactobacillus bulgaricus*, *Lactobacillus*



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acidophilus, *Lactobacillus casei*, *Lactobacillus helveticus*, *Lactobacillus lactis*, *Lactobacillus salivarius*, *Lactobacillus plantarum*, *Streptococcus thermophilus*, *Enterococcus faecium*, *Enterococcus faecalis*, *Bifidobacterium* spp. and *Escherichia coli*, and except for *Lactobacillus bulgaricus* and *Streptococcus thermophilus*, all the remaining ones are intestinal strains. Some of the ideal/key properties of probiotic bacteria are production of antimicrobial substances in the guts, resistant to destruction by digestive enzymes, improve immunity, long self-life when mixed with feed, high stability at room temperature, high survival rate after passing through manufacturing processes (harvesting, processing, storage, etc.), non-toxic and non-pathogenic in nature.

#### Factors affecting efficacy of probiotics:

1. Varying stabilities of microbial strains.
2. Frequency of administration of Probiotic as additives.
3. Stress.
4. Interactions with some medicines.
5. Age.
6. Survival rate of microbial strains.
7. Low doses of probiotic.
8. Health and nutritional status of the birds.

#### Combo strategies

The intestine represents a complex environment, trying to promote the intestinal ecosystem through manipulation of nutrient availability and microbial activity. In this case, application of probiotic cultures, alone or in combination with prebiotic (oligosaccharides) has been found to ameliorate microbial population patterns in the gastrointestinal tract. The combination of a probiotic and a prebiotic can be a synergistic strategy that beneficially affects the host by improving the survival and the implantation of a direct-fed microbial in the gastrointestinal tract and by electively stimulating the growth and/or by activating the metabolism of a limited number of health-promoting bacteria and, in so doing, favourably affect the host.

#### Evaluation of Probiotic on Chicken:

Commercial broiler chicks hatch in extremely clean conditions where they do not have contact with adult animals and are unable to pick up their microflora from the environment. Therefore, it is very crucial to develop a protecting microflora in them, which can be supported by the application of probiotics in the hatchery through spraying or via drinking water during the first day of life. They create conditions in the chicks' intestines that favour the colonization of beneficial microbes. Probiotic can be delivered through feed, water, litter and oral gavages. Inactivated probiotics have positive effects on the production performance of broiler chickens (Huang et al., 2004) and produce more weight (Lan et al., 2003). The live weight gains were significantly higher in probiotic fed chicken (Kabir et al., 2009). Probiotic species have an implicit action on regulation of intestinal microflora and pathogen occlusion (Higgins et al., 2007). It also protects broilers against *Eimeria acervulina* infection (Dalloul et al., 2003). In a research study conducted by Haghighi et al. (2005), improved serum and intestinal antibodies to a foreign antigen in chickens was reported. Supplementation of probiotics in broiler ration enhanced

the meat quality (Kabir et al., 2009), texture, juiciness and general acceptability elevated, higher dressing percentage and values of giblets (Mahajan et al., 1999). Tenderness of meat can be made better by *S. cerevisiae* extract or use of whole yeast (Zhang et al., 2005). The benefits of probiotics includes better fertility and hatchability of eggs, better egg albumen quality, reduced cholesterol concentration in yolk; nullifies effects of enterotoxins, helps in quicker detoxification of mycotoxins, reduces ammonia in faecal contents, stimulates immunity and improves disease resistance; reduce stress after vaccination, transportation, change of feed etc., synthesizes B-vitamins, strengthens skeletal system of birds, reduces carcass contamination, augments the effects of drugs and vaccines and helps to maintain healthy gastrointestinal tract after antibiotic therapy (Hajati & Rezaei, 2010). Probiotics when added in quail feed has been reported to have improved total egg production and lowered cholesterol contents in egg (Kalsum et al., 2012). Probiotic showed positive effect on turkey in regard to growth performance, production and resilience to diseases (Cetin et al., 2005). Reduction in blood cholesterol level and increased rate in egg laying were reported in duck. (Wei et al., 2011)

#### Consequences of using probiotics growth promoters

As probiotics are administered exclusively via the feed, their action is restricted to the gastro-intestinal tract and does not get transferred into foodstuffs which are indicative of its safeness in human for consumption. Use of probiotics results in better protein quality meat with no residues and lower fat content in birds. On their way along the digestive tract, majority of the probiotic bacteria die off, since their growth and proliferation is severely restricted by competition from other microorganisms present in the large intestine and get digested like other organic nutrients in the intestine. Since probiotics are not transferred from the intestine into the body of the bird, it does not affect any metabolic processes nor have any negative impact on the bird.

#### Conclusion

Probiotics do not result in the development and spread of microbial resistance and could be successfully used as nutritional tools in poultry feeds. In adding probiotics to the feed, the host receives a 'boost' to establish a proper microbial population in its gut which is responsible for developing natural resistance to fight against various pathogens in birds. Probiotics constitute a cost-effective alternative to antibiotic growth promoters and are generally recognized as safe without any reported side effects, no residue carry-over in eggs or meat. Understanding probiotics and acquiring more knowledge about their exact mode of action and exploring their full applicability for safeguarding poultry health and productivity in the coming years would help in making further improvements. It is an important aspect of applied biotechnological research to evaluate the genomes of various probiotic species for further development of strains.

*\*Reference can be provided on request.*

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Butyrate, a molecule of great interest in animal nutrition is nowadays emerging as one of the most potent alternatives to antibiotic growth promoters. The effect of Butyrate on improving intestinal health, immunity, achieving eubiosis and thereby performance is well understood. These effects are only possible when the Butyrate molecule reaches upto the lower part of the intestinal tract in an active or un-dissociated form.

It is generally accepted that the major part of unprotected Butyrate gets dissolved in the stomach itself, and rest is quickly absorbed in the proximal part of the intestinal tract. Therefore, in order to get Butyrate in significant amount in the lower parts of the GI tract, it needs to be protected to achieve a targeted release. Generally this protection is provided to Butyrate either by coating it with fat or esterifying the Butyric Acid with Glycerol. Using the fat coating technology has its disadvantages as any type of fat would be unable to withstand pelleting conditions (see below table on melting point of various fats). In case the feed is not pelleted, it would still require lipase enzyme activity to dissolve the fat coating for releasing Butyrate available to the enterocytes. Lipase activity and fat digestion is poorly developed in young chicks. So, the efficacy of coated Butyrate in mash feed is also doubtful especially during the early stages of life. Similarly, the limitation with Glycerol esters of Butyric Acid is that these compounds also require lipase activity to expose the Butyrate to the enterocytes. Moreover, even in the presence of lipase, the release of all the three Butyric Acid molecules

bonded with the Glycerol is not likely.

So, an ideal Butyrate product is one which can withstand pelleting conditions and pass un-dissociated through the stomach to remain available mostly in its active form through the entire length of the intestinal tract.

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Unsaturated Fatty Acids		
Formula	Common Name	Melting Point
$\text{CH}_3(\text{CH}_2)_5\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_2\text{H}$	palmitoleic acid	0 °C
$\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_2\text{H}$	oleic acid	13 °C
$\text{CH}_3(\text{CH}_2)_4\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_2\text{H}$	linoleic acid	-5 °C
$\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_2\text{H}$	linolenic acid	-11 °C
$\text{CH}_3(\text{CH}_2)_4(\text{CH}=\text{CHCH}_2)_4(\text{CH}_2)_2\text{CO}_2\text{H}$	arachidonic acid	-49 °C

**Table 2: Melting Point of Common Oils**

Oil	Melting Temperature	
	Fahrenheit	Celsius
Linseed Oil	-11	-24
Caster Oil	0	-18
Sunflower Oil	1	-17
Soybean Oil	3	-16
Rapeseed Oil	14	-10
Olive Oil	21	-6
MCT Oil	25	-4
Tung Oil	28	-2.5
Cotton Seed Oil	30	-1
Peanut Oil	37	3
Palm Kernel Oil	75	24
Coconut Oil	76	25
Palm Oil	95	35
Mutton Tallow	108	42

Source: The Engineering ToolBox

Butyrate in BUTIREX C4 is made available to the entire length of the intestinal tract. BUTIREX C4 has proven ability to remain stable at pelleting as well as extrusion temperature (1200).

BUTIREX C4 promotes feed intake in chicks by stimulating early Insulin secretion. Insulin increases the glucose uptake by the cells, blood glucose goes down and hence there is an increased appetite and feed consumption by the chicks. BUTIREX C4 acts as a readily available source of energy for enterocytes and improves the health of the enteric wall and the villi. It is also proven in vitro that BUTIREX C4 promotes the proliferation of intestinal epithelium. (Peter Galfi study, 1993)

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