

# POULTRY PUNCH

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August 31, 2019

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No. 10

130 Pages Including Cover

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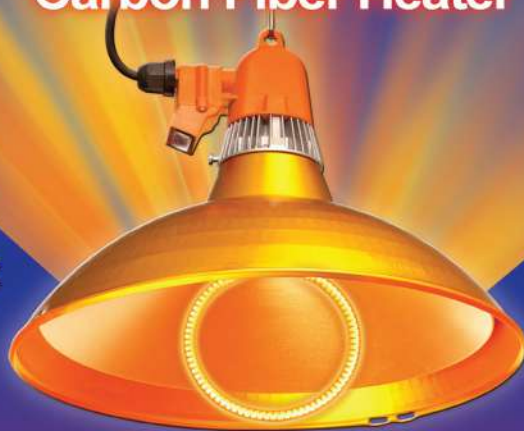
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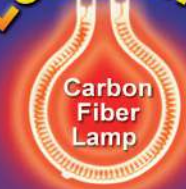


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(MONTHLY)

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### NEWS IN THIS ISSUE

Making a difference: Alltech.....	16
Vamso Biotec organizes .....	18
Animal Husbandry Minister .....	20
Alivira successfully conducts .....	22
PFI conducts Executive .....	23
Excerpts from the interview .....	24
Boost to Srinivasa's expansion .....	30
Govt. invites online application .....	32
KPFBA and Agriculture Skill .....	34
VIP's conducts successful .....	36
Farmakon Nutrivet participates.....	42
Lumis Enzymes Technical Seminar.....	44
Aviagen Broiler Breeder features .....	50
Maize shortage affects small .....	52
HIPRA, a true reference in .....	52
GBPUAT to conduct 106th.....	60
Himalaya conducts technical seminar at Pune .....	62
Kemin Industries organised .....	63

### ARTICLE IN THIS ISSUE

Production of health promoting .....	66
Poultry Disease Prevention .....	72
RESPONSE - Eases respiratory .....	82
Organic Egg Production .....	86
Management factors for.....	92
EMU Farming-A Successful.....	107
A Brief Overview on Major.....	116
E. coli infections in poultry.....	120

### DEPARTMENTS

View Point	11
News Section	16
Monthly Egg & Chicken Rates	127
Advertisers' Index	127

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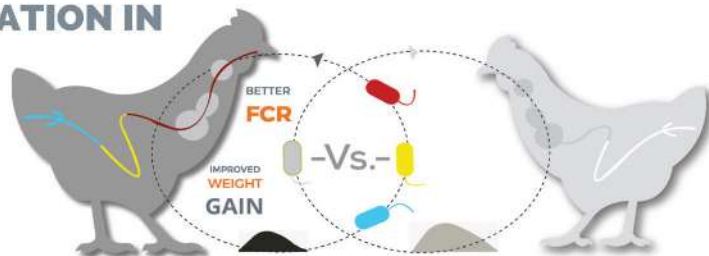


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## Maize scarcity hits poultry business hard

An aggregate of nearly 70 per cent expenditure in poultry production is made on poultry feed. Maize happens to be the most important feed ingredient followed by soybean meal etc. These days feed grade maize availability is a huge problem and even the rates are higher. Various poultry associations have submitted a memorandum citing the necessity of maize import minus duties. The Government effort is praiseworthy but a bit belated and that too partial fraction against the actual requirement of maize. The actual annual maize requirement is to the tune of 14-16 MMT.

Apart from this, the maize market price has touched Rs 27 and even the soybean costs have increased to Rs 37. These days the layer and broiler farmers are facing constant loss with no hope around the corner. Since last one year the farm-gate price has increased to around 20 per cent and pegged at Rs 85 per Kg. The poultry industry farmers are seriously contemplating to reduce their production volume as during this time of the year the poultry consumption is quite low, which may yet again result in higher prices of egg and poultry meat. The poultry farmers hope that in October this year when the new maize production hits the market, there could be a chance in drop of the escalated prices.

Meanwhile NAFED has invited Expression of Interest for Empanelment of Indian Poultry Feed Manufacturers for sale of feed grade Maize to be imported by NAFED under TRQ Scheme of Govt of India.

-Editor

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This way you can keep yourself updated on the latest know-how on poultry. The news and articles displayed are very informative.

Thanks

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## Making a difference: Alltech initiative in India supports children's nutritional needs

*As part of its commitment to serve people and to improve the nutritional status of children, Alltech initiated its Nutri Milk Project in November 2017, partnering with the Thribhuvandas Foundation in Anand, Gujarat, to supply milk to young students in the region.*

*“If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have the safest way to health.” – Hippocrates*

### Bangalore:

India is the second-most populous country on the earth and is home to more than 400 million children, who account for 37 percent of the entire population of the world. Unfortunately, India is no exception to the global struggle to feed its younger generations a nutrient-dense diet. Around 73 percent of all Indian diets are protein-deficient, and the shortfall is even more alarming among vegetarians (IMRB survey, 2017).

The Indian Council of Medical Research (ICMR) recommends a daily intake of 200–300 grams of milk for children, and many states are still striving to achieve this goal. India is a leading producer of milk, but, in many regions, elevated agricultural performance does not necessarily equate to an improved diet.

As part of its commitment to serve people and to improve the nutritional status of children, Alltech initiated its Nutri Milk Project in November 2017, partnering with the Thribhuvandas Foundation in Anand, Gujarat, to supply milk to young students in the region.

“It is an absolute honor to be associated with Thribhuvandas Foundation in this project,” said Dr. Aman Sayed, managing director of Alltech India and regional director of Alltech South Asia. “As a nutrition company, we feel it is our responsibility to provide practical and proven solutions to enhance the nutrition level of children, who are tomorrow’s future.”

Alltech initiated the project in Gujarat, a mostly vegetarian state where milk is the main source of animal protein. Milk, a whole food that provides many essential nutrients, is a crucial part of the diet of growing children in this region. In the selected schools, 98.5 percent of school children can be categorized as undernourished on the body mass index (BMI) scale.

Five schools in the Tarapur cluster were selected for the program, as children in this region were noted to be especially malnourished. Alltech began providing 150 ml each of flavored, fortified milk every day to around 1,200 children, aged 5 to 13, as well as a weekly supplement of iron. The sole aim of this is to improve the nutritional status of these children — and, by doing so, to build a healthier India. On its journey to nourish the children of Tarapur, Alltech has delivered 1,78,754 milk pouches in the project’s first year alone.

Along with a 5.45-percent average improvement in the BMI of their students, the schools involved in this program have also experienced a considerable increase in attendance. These results inspired Alltech to expand the project, and in 2018, six more schools were added. Alltech plans to expand the program even further.

“Childhood is a critical time in the growth and development of a person and is a key stage in the establishment of their physical and mental abilities,” said Sayed. “We are proud to see the positive impact Alltech is having on the lives of children in the program. These children are benefiting daily from Nutri Milk, not just by improving their nutrition but by increasing their attendance and education, and this is a proud moment for Alltech.”

Alltech is committed to improving the health and performance of people, animals and plants around the world through natural nutrition and scientific innovation. At a global level, Alltech works extensively with local schools to build science labs and encourages students to pursue science with a greater curiosity about the world around them.



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## Vamso Biotec organizes expert talk on: "Strike through the CHALLENGE"

### Panipat:

Vamso Biotec and Eastman Inc together conducted technical seminars at Hotel Swarna Mahal, Panipat and Hotel Le Maridien, Coimbatore on 17th and 19th June 2019 respectively. The seminars were well attended by more than 40 poultry breeder farmers and veterinary consultants at each location. The central theme of the seminar was to explore the latest trends to minimize the pathogenic challenges in internal environment (gut) and external environment (poultry house). Dr. N.K. Mahajan, Retd. Professor, Lala Lajpat Rai



University of Veterinary and Animal Sciences and Dr. S.B. Rukadikar, a well known poultry pathologist and eminent consultant, were our keynote speakers for the seminar at Panipat and Coimbatore respectively. The event started by welcoming of all the guests by Dr. Arindam Chatterjee, Sr. GM, Vamso Biotec, followed by a technical session by Dr. Poh Soon, Global Technical Manager, Eastman INC. He shared his expert knowledge on how to optimize the usage of Antibiotic Growth Promoters (AGP) in poultry with relevant feed additive alternatives. His informative session explained the complexities involved in gut health maintenance. He

also elucidated the role of organic acids containing SCFA & MCFA in mitigating poor gut health and enhancing production. Comprehensive discussions were followed wherein Dr. Arindam Chatterjee explained the commercial benefits of using organic acids in poultry feed.

Dr. N.K.Mahajan & Dr. S.B.Rukadikar emphasized on major disease challenges in poultry industry and provided an insight about Biosecurity measures to be applied in poultry farms. With an increasing pressure on



poultry producers to reduce the use of antibiotics, Biosecurity is emerging as one of the most important disease control option.

Dr.Ashwani Jadaun, Business Head-Poultry Division, Vamso Biotec, delivered vote of thanks to all the participants and elaborated the technical strength of the company and future vision to deliver more of innovative nutritional solutions to the poultry industry. Both the events were supported & made



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## Animal Husbandry Minister Shri Giriraj Singh suggests solutions for Bihar poultry problems

In the Modi government, the Minister of Animal Husbandry, Mr. Giriraj Singh is working tirelessly to address the problems of cattle rearing, in the same order he met the delegation of a progressive poultry farm association of Bihar headed by Mr. Sanjeev Srivastava on August 11, 2019. Through the delegation, the Hon'ble Minister was told in detail how the State's Layer Farmer and Broiler Poultry producers are going through a difficult phase, their cost price is also escalating.

During this, the Minister discussed how various aspects of broiler and egg producers can reduce the cost of poultry production. He suggested that if poultry products are produced in an organic way, it will also be better for health and fetch more revenue. In addition to this there was a discussion on opening a NECC center in Bihar. The minister explained how the drumstick, can be used as a supplementary feed for the poultry birds.



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## Alivira successfully conducts product training on new launches at Bangladesh in association with Business partner Catapol Bioscience Limited, Dhaka

Dhaka, Bangladesh:



Chick-Pro™ was conducted in highly professional manner by Senior Product Manager Dr. Sanjay Gapat - Poultry Division, Alivira Animal Health Limited, Thane - Mumbai along with Mr. Rajib Saha - Director Marketing, Mr. Subinoy Saha- Managing Director, Mr. Sonatan Ghosh - Director, and other team members from Catapol Bioscience Limited, Dhaka -



VIT®, VIPRAL®-ET and Chick-Pro™ in front of entire team of Catapol Bioscience.

Dr. Sanjay conveyed that these newly launched solutions will serve the purpose of every poultry entrepreneur in Bangladesh. They will ensure the Bird's Growth, Health & Business Profitability. They will shortly gain the trust at buyers end in terms of product efficacy and quality.

Session was marked as highly interactive. All the participants took keen interest in new product launch discussion and cleared their queries with Dr. Sanjay Gapat and happily accepted every product's concept.

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Product Launch of SEQU-VIT®, VIPRAL®-ET and



Bangladesh.

The product launch commenced with the welcome address of Mr. Rajib and Mr. Subinoy Saha. They highlighted the importance of Growth promoter, Electrolyte and Synbiotic application in poultry.

Dr. Sanjay Gapat detailed on basic fundamentals of Poultry Nutrition Management and Practices. Dr. Sanjay delivered technical presentation on new launches like SEQU-





game-changers for addressing the issues related to Bird's Growth, Health and Early gut development, respectively.

At the end of the event, Dr. Sanjay owed vote of thanks on behalf of Alivira Animal Health Limited and thanked all the participants for their active participation in product launch discussion and training programme.

## PFI conducts Executive Committee meeting at Coimbatore

### Coimbatore:

A Executive committee meeting of Poultry Federation of India (PFI) was held on July 01, 2019 to discuss on various aspects. The following was finalized.

#### 1. International

#### Poultry Council:

- a. PFI is now a Member of International Poultry Council and will take part in all international activities.
  - b. PFI will have Indian representation on all policies and advisories after creating a document with the support of all associations.
2. PFI call an All Association Meeting initiated to collaborate effectively with all other associations.
  3. PFI will hold its Annual General Body Meeting in Coimbatore on September 20 and September 21, 2019. It will be a 2-day event in Hotel Le Meridien, Coimbatore.
  4. PFI actively participated in a meeting called by Government of India for Poultry Development. PFI has submitted its proposal to the government on various fronts as felt necessary to continue the growth of Indian Poultry.
  5. PFI also checked its preparedness on the hearing of Cage Ban Issue. It further planned to strengthen its case on the same and has initiated the work already.
  6. PFI further discussed on various issues internally and has taken up suggestions from various members on the issues to be addressed further in future and create a roadmap for the same.





## Excerpts from the interview with Interface MD- Mr SK Malhotra

### Q1. Why did you start your company with thrust on immune system, there were other choices as well?

Way back in early 90's, when I was creating on mycoplasma control, I came across a number of other factors which were creating problem of immune-suppression. Later in 1996 during a conference in Nepal, a very effective paper was delivered on how nutrition can effectively control pathological disorders. I was greatly influenced by the lecture and started working on finding effective protein molecules which can provide immune-therapy and finally a protein mix was identified which could provide overall productivity and protection through immunomodulation. The same was put on trial and results were extraordinarily favourable. I also came to know that during severe problem of Newcastle Disease outbreak, mortality was 1.84%, whereas after administering the newly developed product the mortality dropped to 0.56%. Moreover production came back to peak level within 12-14 days which were evidently the best results one can get.

Finally, I discussed the outcome with various eminent doctors who encouraged to go ahead with launching the product in the market. From 1999 to 2000 further trials were conducted which increased our confidence in the concept that "yes diseases outbreak can be controlled with proper nutrition"



### Q2. What is your present distribution network and business volume in India?

At present we are operating in the whole country and many big corporate houses are our esteemed clients. We are having our own distributor network and field force in India to liaison with our valuable clients. We have very strong delivery systems and in emergency when there is viral outbreak, we make it a point that our product must reach to end user well in time, before the disease spreads to their entire flocks.

### Q3. Do you export your products?

Yes, we have been exporting our products for many years, especially in SAARC region. We have a strong foothold especially in Nepal. Also our mission, in the near future is to expand our presence globally and we are in process of taking active step in the same direction.

### Q4. Explain about your R&D set up and are there any new products in the channel?

We first and foremost formulate a product keeping in mind the problems faced by the farmer during viral and bacterial outbreak. We have a well equipped R&D setup for developing new products which are of world class standard and quality. At present we have many products under development or trial phase and the same will be introduced in market in due course of time. Our recently launched product "READYMUNE" has been produced keeping in mind the tough market challenges of 'High Productivity Stress' with the introduction of new breeds in poultry. In today's challenging times, diseases are re-emerging in new forms and we are undertaking continuous R & D to develop new and even better products to check the outbreaks. We have been also working towards giving better productivity and reducing disease load in aquaculture and have also introduced two products "AQUAAMUNE" and "AQUAAGROW" for the same.

### Q5. Please explain your product profile?

Our products are immunomodulators, growth promoters and immune-therapy products. Its end result are well evaluated before they are provided to the end integrators for application to the birds. The results are assured to the farmer whether it is viral or bacterial outbreaks or productivity has been hampered. In our opinion, it is an outdated concept that in summers F.C.R. will be poor amongst the birds, mortality would be high, and production drops during peak summers and winters. Through application of our range of products, the performance and production standards of breed is assured. At present we have eight tried and tested products in the market to assure high standards of productivity and least disease outbreak risk for poultry. These are: Protface Intermune, Multimune Protomune, Readymune Calface, Nutrigrow, Growfast P

### Q6. How do you combat your competitors?

We don't believe that in today's market there are any direct competitors. Every company is having their own unique set



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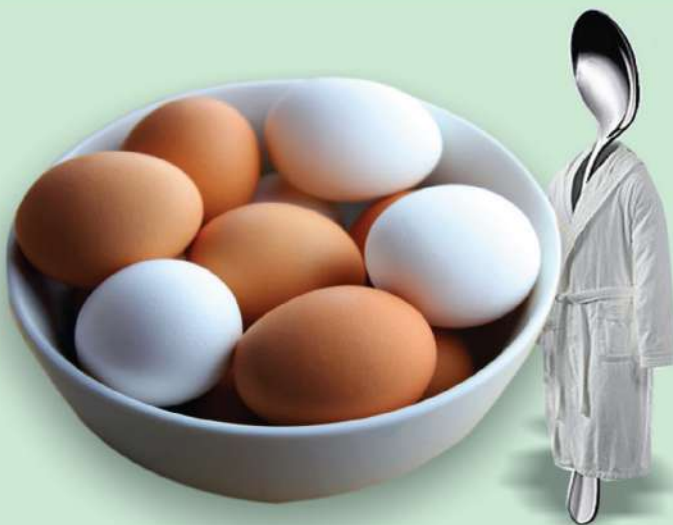




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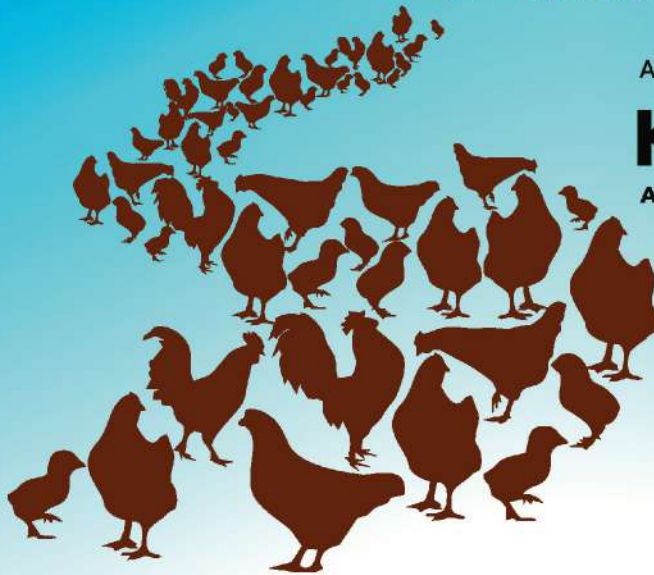
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of claims for their products, but we give a guarantee that our products perform for overall Productivity, Protection and Profits. This has been proved through experience of our valuable farmers who have been using our products, since the formation of our company.

### **Q7. Explain about the ISO certifications of your company/product?**

We have number of certifications to our company ISO-9001-2015, WHO GMP, HACCP, ISO 2200-2005 (FSMS) and our production unit is strictly adhering to norms as prescribed by them.

### **Q8. Just convince me that if I need immunomodulator, why should I go for your products?**

Because the claims we make are backed up by on-field results which the farmers and large integrators are getting for past two decades. Its verifiable, quantifiable and finally its what we deliver our state holder get much better returns on their flocks be it broiler, layer or breeder.

### **Q9. Tell me about the pricing of your product in comparison to your competitors?**

By using products the farmer gets almost Rs 10-35 extra in broiler with a investment of Rs 3.25 per bird, Rs 70-125 extra in layer, with an investment Rs 27-30 and Rs 200-450 extra in breeder, with an investment of Rs 35-40. This provides complete satisfaction to farmers who believe in quality production and good returns. Looking at these figures I can say that our products are competitively priced and the same has never been a subject of hindrance for farmers and intergrators in using our products, once the results are evaluated.

### **Q10. Do you have any CSR activity?**

Yes our company has always been actively undertaking CSR initiatives for many years now. We have been sponsoring complete school education of children of people with limited means and ward of all our employees

### **Q11. Do you comply with GMP and HACCP guidelines, explain?**

Yes, we thoroughly comply with GMP and HACCP guidelines to assure quality products to our clients.

Where as in layers the immunomodulation costs around 8 paise per egg whereas return varies from Rs 125-175 per bird in terms of feed saved, mortality controlled and extra egg gained (almost 10-30 Egg) extra then the average of farmers getting in India ((Based on 315-319H)In breeders the cost is Rs 35/- per bird in 68 weeks but the return varies between 250-400 in terms of feed saved in life, extra H/H taken, extra H/E taken and Hatchability. You get 7-10 chicks extra with a saving of 3-5 Kg feed with least depletion

### **Q12. You also have products for Aquaculture, can you elaborate?**

We introduced our two products Aquaamune and Aquaagrow. Aquaamune is for shrimps & fish and provides protection against rapid viral outbreak. Our other product "Aquaagrow" provides full protection to crop and increases the quality and productivity of the crop. We got some tremendously promising results with these products. No viral outbreak was observed in the crops where shrimps were kept on our products. There was less than 15% depletion with FCR as low 1.24 Kg, total uniformity, and no loose shell in crops from 110count/kg on 45th day to 38 count/kg on 105th day.

### **Q13. Briefly explain the impact of your product on layer and broiler parents, commercial layer and broiler and Day old Chicks?**

The recently introduces high productivity breeds are always under stress whether it broiler, layer or breeders. In broiler there is always a target to improve FCR with overall muscle increase. They are under stress from day old till marketed. Their mortality or any disease outbreak creates impact on overall performance which gives direct loss to farmers. But a perfect immunomodulation saves them from this risk and improves profitability. In boilers we assure FCR up to 1.35 Kg to 1.40 Kg with lowest possible mortality and high percentage of muscles which results in 5-10% extra meat yield.

In layer birds have to reach H/H production of 330+ in 72 weeks where as they have constant threat of disease. With high productivity breeds being introduced, there is an increase in the risk to a great extent and this is going to result in stress throughout the life of the bird. This in turn creates immune suppression effecting total productivity at all the stages. Whether its chicks, growers, pullers or layers, there are diseases like Gout, ND, IBD, IBH, ILT, CIAV and many more attacking them throughout their life. Immunomodulation protects birds at all the stages of life and provides optimum productivity with extra return of investments. In layers, administering our products as per schedule cost around 8 paise per egg whereas return varies from Rs 125-175 per bird in terms of feed saved, mortality controlled and extra egg gained (almost 10-30 eggs extra).

In breeders the cost is Rs 35/- per bird in 68 weeks, but the return varies between Rs. 250-400 in terms of feed saved in life, extra H/H taken, extra H/E taken and hatchability. One gets 7-10 chicks extra with a saving of 3-5 Kg feed with least depletion. Be it pureline, grandparent or parent, the farmer gets least rejection on grading and depending on the breed one can earn Rs 1,000 to Rs. 10,000 extra per grandparent as you get 25-30% less rejection because of regular



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immunomodulation. There also will be 15-20% extra availability of pureline birds. Parent give almost no trouble throughout their life and intum produce quality chicks. The uniformity of these chicks gives extra edge to the hatchery in terms of their reputation in the market. Hatchery gets more hatchability and 'A' grade chicks. In short immunomodulation always pays you at all stage of life which is proven for millions of birds and hundreds of farmers.

## Boost to Srinivasa's expansion plans with IFC's Partnership

Hyderabad:

As part of strategic investment to support India's agribusiness sector, International Finance Corporation (IFC), a member of the World Bank Group, has committed to invest INR 1,300 million (or USD 18.75 million equivalent) in Srinivasa Farms Pvt. Ltd. ("SFPL" or "Srinivasa" or the "Company") to partner with the Company in its pursuit to expand pan India with capacity enhancement and product diversification. The first tranche of INR 650 million (or USD 9.37 million equivalent) has already been invested.

Srinivasa Group had its moorings way back in 1965 when Mr. Jagapati Rao Chitturi (Chairman) forayed into poultry business in Hyderabad. The Company is a leader in the integrated layer and broiler business which has diversified interests in soya, feed, contract farming, chicken processing and retail.

Hy-Line International, the world leader in Chicken layer (egg laying) genetics, has tied up exclusively with Srinivasa Farms in India, which is a testimony to the Company's legacy and sound fundamentals in poultry. Hyline were first to invent hybridization and hold 50% of the world market share. Mr. Suresh Chitturi said we have 12 to 15% market share in the country.

One among its many achievements that the Company has embarked on was setting up of the state-of-the-art chicken processing plant near Hyderabad, India, to produce a variety of value-added chicken products for hotels and restaurants and fast food segment. The Group is also putting up a Mega Food Park as part of its diversification plans to provide food processing infrastructure to small and medium enterprises in Andhra Pradesh in a plug and play mode.

The poultry sector generates economic benefits along the value chain by integrating small farmers into production processes. In India, it is one of the most organized sectors in agriculture with a market value of \$16.8 billion. Even though India's per capita consumption of eggs and chicken has grown in the last five years, it is expected to grow further at 7-10 percent per annum. India already ranks 3rd in egg production and 4th in broiler production, globally.

"Strengthening the agribusiness sector is at the heart of India's development agenda. It is a sector of strategic focus for IFC. Investment in the poultry sector can lead to job creation for low-skilled workers who are entering formal labor force for the first time," said Mr. Jun Zhang, IFC Country Head in India. "Srinivasa's successful expansion will create jobs, improve rural logistics, and help create a market linkage for small farmers."

Apart from funds infusion, IFC will contribute to the partnership by bringing to the table its global expertise in the poultry sector, technical advisory





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on best operating practices and climate-smart agricultural practices, corporate governance, and food safety standards. IFC's investment will help roll out the Company's network to new areas and expand farmer reach. KPMG was the exclusive financial advisor to the company for the transaction.

Mr. Suresh Chitturi, Vice Chairman and Managing Director of Srinivasa Farms (and also the Vice Chairman of International Egg Commission, UK & Vice President of All India Poultry Breeder Association) said – "over the next 2-3 years we will invest over INR 3000 MN in doubling our capacities. The plan is to pursue a collaborative growth model to expand allied businesses such as retail, processed foods and agri-businesses, besides value added products. Our project expansion will create many more jobs with best practices in work force management and sustainable development keeping environment in focus."

He said we shall triple our capacity in next 4-5 years, presently producing 3.5 crore layer chicks and same number of broiler chicks. We will start production of ready to eat products shortly. People want hygienically processed quality poultry products. We go for environmentally controlled houses and attain best FCR in poultry production. How we do more with less has become very important. He said we advice our farmers to maximize production with minimal financial input. We are not getting into medication and vaccines. Biosecurity is essential and we shall stick to it, he added.

Mr. Suresh Chitturi said Srinivasa was very active in the 8 districts of Andhra Pradesh but today we are working in 16 states and still expanding. Mr. Suresh Chitturi said Srinivasa farms is in the business since 50 years and proud to say that we are one of the companies that built the Indian poultry industry from nothing to now globally at number 3 in egg production but in number of eggs we are number 2 now. We are also working on litter processing and generate power out of it. He said we are also looking for alternates in food and also working on converting waste into protein. He said the mega food park is nearing completion and we can start production, chicken processing plant and egg processing will also be part of that.

### **About Srinivasa Group**

Srinivasa Group was founded by a pioneer of the poultry industry by establishing his first poultry farm in 1965. Today, Srinivasa is fully backward integrated in the poultry value chain, with presence in soya & feed, layer and broiler breeding and broiler integration (contract farming) with a vision to move up the poultry value chain, the Company recently set up a chicken processing unit and opened company owned retail outlets. It further plans to venture into egg processing and chicken value added products.

Srinivasa is a leader in the poultry industry with long standing relationship with poultry farmers. Srinivasa entered into exclusive pan-India distribution agreement with Hy-Line International for layer chicks. The Company is headquartered in Hyderabad with over 2,500 employees and serves over 1,000 customers / farmers across 30 plus cities in the region. Currently, Srinivasa is present in 16 states across India.

### **About IFC (International Finance Corporation)**

IFC - a sister organization of the World Bank and member of the World Bank Group - is the largest global development institution focused on the private sector in emerging markets. We work with more than 2,000 businesses worldwide, using our capital, expertise, and influence to create markets and opportunities in the toughest areas of the world. In fiscal year 2018, we delivered more than \$23 billion in long-term financing for developing countries, leveraging the power of the private sector to end extreme poverty and boost shared prosperity.

## **Govt. invites online application for poultry farm set up, assures support**

### **Patna:**

The Bihar Government has invited online applications from all districts of the state to set up poultry farm. The Government has assured to extend financial help to the start up entrepreneurs. The application can be made by ST, SC and General category candidates for 10,000, 5,000 and 1,000 layer bird farm. The Government will offer 30 percent subsidy to General category candidates and 40 percent subsidy for SC and ST candidates.

Animal Husbandry Director, Vinod Kumar Gunjijal said the applications for opening a poultry farm has been sought from all the districts of the state. He said for the 10,000 capacity layer farm 105 candidates are to be selected. The total expenditure in this will be around Rs 87 lakhs and for the 5000 farm the expense will be around 48.50 lakh. The subsidy given by the Government in this would be nearly Rs 19 lakh. Bihar procures egg from Andhra Pradesh and Tamil Nadu. To augment egg production in the state the Government had made the provision of allocation in the year 2014-15.

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## KPFBA and Agriculture Skill Council of India (ASCI) Collaborate for Skill Development in Poultry Sector

### Bangalore:

The Karnataka Poultry Farmers and Breeders Association (KPFBA) today announced that the Agriculture Skill Council of India (ASCI), part of the Ministry of Skill Development & Entrepreneurship, is collaborating with the KPFBA for expanding skill development in the poultry agriculture ecosystem in Karnataka.

Dr Satender Arya CEO of ASCI stated, "The poultry sector is getting more and more organised by the day with modern equipment and practices, requiring skills at the ground level. The KPFBA as an organisation has been in the forefront of imparting skills to the poultry farmers as well as those in the organised poultry sector. By doing this, a new poultry eco-system is coming in place in the country which is good for the growth of the sector, per se."

The President of KPFBA, Mr. Akhilesh Babu, thanked ASCI for the collaboration and said, "The Association is continuously working on improving the efficiencies in the poultry sector. The sector has come a long way with state-of-the-art equipments, handling and other practices. As an association, we are keen on best practices in the sector and it goes a long way in adding to the economic development of the country."

"With this collaboration, KPFBA will open up avenues for employees in their member companies to get assessed and certified in alignment with the government's certification norms; will have a voice in the National Occupational Standards which is updated by ASCI; and will have access to consultancy services to enhance competencies of manpower", added Mr. Akhilesh Babu.

The poultry sector (both breeder and commercial farms) are run with semi skilled or illiterate workforce and there is constant short supply of workforce. The collaboration would help increase skilled manpower and also be in line with modern practices.

### About KPFBA

Karnataka Poultry Farmers & Breeders Association [KPFBA] is an Apex body, representing Poultry Farmers & Breeders of Karnataka, India. It was established in 1991 to promote the development of poultry breeding and farming in Karnataka, where the occupation is a major activity. The association is registered under the Karnataka Societies Act 196, u/s 12 A (a) 80G of the Income-tax Act 1961.

KPFBA aims at providing facilities for exchange of information and opinion of interest to poultry breeding farms and poultry farmers. It believes in the advantages of united action to accomplish goals where individuals will not be in a position to accomplish on their own.

### About ASCI

Agriculture Skill Council of India (ASCI) is a Section 8 Not for profit concern working under the aegis of Ministry of Skill Development & Entrepreneurship (MSDE). ASCI works towards capacity building by bridging gaps and upgrading skills of farmers, wage workers, self-employed & extension workers engaged in organized / unorganized segments of Agriculture & Allied Sectors.

ASCI is contributing to nation building through Skill Development in Agriculture especially at the times when country's agriculture is experiencing stagnant growth, exodus of quality manpower to other sectors, changing climate with increased variability in production parameters and transformations in international agriculture markets that are especially too much subsidized challenging the competitiveness of Indian Agriculture.

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## VIP's conducts successful EggChi Walkathon at Pune

**Pune:**



"VIP's EggChi Walkathon" 28th July 2019, Sunday is a fruitful day for Poultry Industry! Together Team VIP & Team Poultry completed the perfectly executed event organised by Vets In Poultry (VIP) for reaching the common people for explaining science behind the egg and chicken products in a methodical way. It was a remarkable example of well-organized-executed industry-cum-public rally. We VIPian's are overwhelmed by the kind of dedicated participation from each segment of industry and society.



Just a year-old VIP has successfully completed the event of "EggChi Walkathon". The event with support from all bodies and members of industry cannot be better to have such a blockbuster opening to our association. The success of this mega-event was due to involvement of active participants from the industry and society who participated including their family, young children in a shower drizzling road show. This event will be a trigger point to Indian poultry and we expect many such events to happen in future. VIP will always stand along such promotional activities.

### 28th July was super Sunday and created many historic landmarks:

- 1- First of its kind in the history of poultry industry
- 2- Active participation from families and children are our valuable participants
- 3- More than 500 plus participants enjoyed EggChi walkathon
- 4- Walkathon started in spite of rainfall and continued as per decided agenda
- 5- The effective tool of public interview by our team to reach common public overcoming their routine doubts about the egg and chicken food product. This interactive event had more than 70 interviews within two and half hours.
- 6- Distribution of frozen chickens & scientific pamphlets (Egg & Chicken) to walking civilians
- 7- Voluntary and active participations, support and endorsement from each segment of industry across India
- 8- Distribution of boiled eggs and chicken nuggets
- 9- Displayed banners, placards and slogans to break myths for mass awareness
- 10- The event is appreciated & supported by almost all Associations of India in one go

-PF&BA-MH, CLAFMA, NECC, TPFBA-TA, KPFBS-KA, IVPI-KA, BCC-TN, PVF-TN, BFCC-GJ, WBPf-WB, IPJA, IPEMA and all others associations and bodies.

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challenges, all industry mates come together with different schools of thoughts for a noble cause of overcoming malnutrition through the VIP's EggChi Walkathon which has been a grand success.

The "EggChi Walkathon" started from Balgandharva Rangamandir travelling JM Road - FC Road to end up at Sambhaji Udyan with the distribution of egg & chicken products. The group marched from start and kept discussing it with bus drivers, shopkeepers, auto rickshaw drivers, on their way to local residents of JM road and FC road. Toddlers, youngsters and female participants were enjoying the drizzling showers during the rally with all due arrangements of safety.

The request letter for Promotion, egg inclusion in mid day meal and overcoming social misconceptions was handed over to former agriculture Minister Mr. Sharachandra Pawar and acting member of parliament Mr. Girish Bapat, BJP, Pune.

"The rally was impressive because of public interaction and conducting interviews of pedestrians who came for morning walk on JM & FC road and for breakfast as well" said the president of VIP, Dr Ajay Deshpande.

We a technocrat face of industry, conveyed the fair message about the production system, it's rigorous controls for addressing nutritional requirement of the society especially when we as a country are topmost in production of eggs. This was also a good platform to clarify the myths and misleading of media, society towards consuming egg and chicken added by the Dr Pedgoankar, GM Venkateshwara Hatcheries.

Dr. Ajit Ranade, Dean at Mumbai Veterinary College, addressed the requirement of protein in our diet and relative importance of eggs and Chicken. He also appealed the general health conscious morning walkers to focus on protein rich diet along with exercise.

Dr V R Kulkarni while talking to media also addressed the importance of current protein requirement of Indian population and meeting the demand through poultry products. He also converted the attributes of poultry products from health & beauty point of view.

The public interaction was addressing the questions from public about the nutritional composition, its safety as table eggs are non fertile & high in nutritive value. They also stressed on the importance of chicken & why local produced chicken is safe to consume

### The managing committee of VIP, explained the motto behind this initiative as:

- 1- Address protein malnutrition and way-outs to overcome through Egg & Chicken (EggChi)
- 2- Spreading awareness of poultry products (Chicken, Egg and its byproducts) in society
- 3- Explaining scientific background to break the false propaganda and fear against the egg and chicken consumption in the society along with improving connect of technocrats in the poultry industry.

We as Team VIP, are grateful to all the 8 teams to execute flawless show. Each team putting their efforts as an individual and as a team was beyond expectations and the real reason behind its success.

#### 1. Promotional Tool Management Team-

Dr Prasad, Dr Rahul Sawarkar, Dr Pankaj, Dr Satbhai, Dr Nitesh Kadam, Dr Vijay Gadge, Dr Vinayak, Pramod Joshi

#### 2. Statutory Authority Management-

Dr Santosh Ire, Rulesh Kherde, Rahul Pedgoankar, Shailesh Rasinkar, Manish Pingale





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3. Participation drive management with all communications-

Dr Ajay Sir, Dr CB Pathak Sir, Dr VRK Sir

4. Public interaction team-

Dr Jeevan, Dr CB Pathak Sir, Dr Ajay Sir, Dr VRK Sir, Dr Sujeet Kulkarni, Dr Ajit Ranade Sir, Dr Pankaj Tuptewar, Dr Vinayak Surve, Dr Satyjit Jagtap, Vinay Kulkarni, Rahil Somjee, Ganesh Bhosale, Girish Bodhe, Pradeep Gadekar, Charuhas, Varun, Jagdish Patil & Vasantkumar Sir.

5. Traffic & Rally management team-

Dr Atul Rajput, Dr Sachin Patil, Dr Sachin Badane, Dr Vaibhav Akkewar, Dr Pradeep Doiphode, Pradeep Gadekar, Alok Upadhy, Yogesh Autade, Manish Pingale, Milind Padwal, Pardeshi & all volunteers

6. Untoward incidence handling team.

Dr Sunil Bhinge Sir, Dr Baswaraj Sir, Rahil Somjee, Alok Upadhy, Rahul Pedgaonkar, Dr Satbhai

7. Refreshment Team

Rahil Somjee, Rulesh Kherde, Anant Patil, Shailesh Rashinkar, Pramod Joshi, Parshuram

8. Media Team

Dr Ranade, Dr Ajay, Dr Pedgoankar, Dr VRK and Dr Sujit

Hearty Thanks to each one who was involved directly and indirectly.

This event would not have been completed without proactive support of industry corporate houses to distribute chicken and eggs. Godrej and



Baramati Agro distributed frozen chicken, Venky's express helped for Fried Chicken Nuggets, Yojana Poultry & Om Layer (Chicks) helped to distribute boiled eggs after the event as a refreshment. Great response from all Mumbikar industry mates to attend even despite of red alert due to rain was remarkable. We are also thankful to poultry fraternity people from Hyderabad, Kolhapur, Sangli, Nasik and the adjoining states to add value to the event. We are thankful to all media friends from regional newspaper, channels, FM and national media for giving desired coverage. Tons of thanks to all Indian Poultry associations and bodies for their unconditional support and value added inputs. Thanks to Major participants form big houses: Japfa, VH, Godrej, Baramati Agro, Premium, Siddhivinayak, KuKooChaKu, Khadkeshwara, Urja, Kiran Breeding, Om Chick India, Jumbo Rooster, Bhairavnath Breeder, Yojana, Bhairavnath Layer, PDRC, CP & Pharma Distributors & Companies and all farmers and groups. Thanks to the man who initiated the idea and he's Dr G Gopal Reddy.

**VIP Committee:**

- Prof Dr Ajit Ranade ( Tech Advisors ) - Dr VR Kulkarni ( Vice President )
- Dr Prasad Kulkarni ( Treasures ) - Dr CB Pathak ( EC Member )
- Dr Sujit Kulkarni ( EC Member ) - Dr Jeevan Sonwane ( EC Member )
- Dr Pankaj Tuptewar ( EC Member ) - Dr Sachin Patil ( EC Member )
- Dr G Gopal Reddy ( EC Member ) - Dr Sahebrao Rathod ( EC Member- Nasik )
- Dr Rais ( EC Member- Anand ) - Dr Badal ( EC Member- Chandigarh )
- Dr Maity ( EC Member- Kolkata ) - Dr Jyoti ( EC Member- Hyderabad )
- Dr HB Natraja ( EC Member- Bangalore ) - And all VIP Working Committee

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## Farmakon Nutrivet participates in IPDL Expo at Karnal

Karnal:



**Farmakon Nutrivet**  
participated IPDL Expo-Karnal, Haryana



Farmakon Nutrivet participated at the Indian Poultry Dairy and Livestock Expo (IPDL) at Karnal, Haruana organized from August 9-11, 2019. The company made its presence felt at this expo and the team management deftly handled the customers. The IPDL Expo offers an impressive platform for different livestock sectors to showcase their products under one roof. The purpose is simple as it has always brings both exhibitors and visitors together and provides opportunity to transform the business of the exhibitors.

The Farmakon Nutrivet management got the privilege of interacting with the visitors and the probable customers and this interface opened up channels for the extension of its present business prospects in future.



**Award of Honor from IPDL Expo**



**Salim Malaviya (Marketing Executive)**  
giving cattle product information to farmers



**Mr. Meghal Mehta (Managing Director)**  
giving technical information of products to visitor



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# LUMIS ENZYMES

## Technical Seminar, Thailand





# LUMIS ENZYMES Technical Seminar, Thailand





# LUMIS ENZYMES

## Technical Seminar, Thailand





# LUMIS ENZYMES

## Technical Seminar, Thailand





# LUMIS ENZYMES

## Technical Seminar, Thailand





# LUMIS ENZYMES

## Technical Seminar, Thailand





## Aviagen Broiler Breeder features at Poultry Entrepreneurship Seminar and Expo in Jammu and Kashmir

*Event promoted self-sufficient poultry production for Jammu and Kashmir*



*Paul Gittins (right) discusses the benefits of local poultry production with Dr. Samoon*

### Udumalpet:

On June 29, Aviagen® India exhibited at the one-day Poultry Entrepreneurship Seminar and Expo 2019, which was held at Sher-e-Kashmir University of Agriculture Sciences & Technology of Kashmir, Srinagar and Jammu and Kashmir (J&K). The aim of the annual event is to encourage poultry production in the state and to inspire up-and-coming professionals to take up poultry as a career.

### Strong support for J&K broiler producers

The Expo was officially opened by Dr. Asgar Hassan Samoon, J&K's Principal Secretary to Government, Animal/Sheep Husbandry/Fisheries/Transport Department, who expressed his determination to develop the poultry infrastructure in the state of J&K. To do so, he has supported incentive programs for would-be investors and entrepreneurs to invest in the state, which currently imports the majority of its poultry meat. Aviagen and other supporters of the development of the industry in J&K assert that the state is well-positioned to become self-sufficient in meeting the growing needs of its people for high-quality, nutritious and affordable chicken meat.

"The state's climate is ideally suited for broiler production with plenty of fresh air, clean water and low humidity," commented Paul Gittins, Senior Advisor for Aviagen India. "Aviagen is committed to helping farmers feed people in their local communities, and we work closely with them to ensure their success. We appreciate the efforts of Dr. Samoon and share his commitment to help J&K farmers become self-sufficient in providing their current and future generations with a healthy and sustainable source of protein."

### 308AP broiler breeder – the ideal bird for the J&K market

Known locally as the 308AP, the broiler breeder continues to grow in popularity throughout India, and has unique traits to help advance the businesses of poultry producers in J&K, including a strong balance of all-weather robustness, along with a healthy growth rate, good chick numbers and high meat yield.

"Our stand at the event was busy, as we shared the latest flock management advice with J&K broiler farmers," said Dr. Deepak Pratap Singh, Aviagen India Regional Technical Manager. "A typical topic of conversation was how to improve the biosecurity, health and performance of the 308AP. We enjoyed strengthening these important relationships and learning how we can enhance our service to the growers and their communities."





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## Maize shortage affects small and medium poultry farmers, Government urged to import

### Bangalore:

With shortfall in production of maize and also due to skewed import of maize, many small and medium poultry farmers in Karnataka and other states are in distress, thus affecting production of poultry. Fearing that the situation might worsen, the Karnataka Poultry Farmers and Breeders Association (KPFBA) has urged the Union Minister for Agriculture and Farmers Welfare, Mr. Narendra Singh Tomar, to immediately allow import of maize, specifically for the small and medium poultry farmers.

In a letter addressed to the Minister, the President of KPFBA, Mr. Akhilesh Babu has urged the government to import maize (feed grade) to resolve the problems of the Small and Medium farmers. About 17 Small and Medium broiler poultry farmers had applied for import of 61,050 metric tonnes, while one major player alone had applied for 50,000 MT to the MMTC (Metals and Minerals Trading Corporation) which Mr. Babu said was not a 'fair proportion'. The government, he added, should come to the immediate rescue of the Small and Medium poultry farmers.

### Big Players May Garner all Import

The KPFBA President pointed out that the Directorate General of Foreign Trade had allowed import of 50,000 MT each to both MMTC and NAFED (National Agricultural Cooperative Marketing Federation), but these imports may not reach the Small and Medium farmers. These two organisations have floated global tenders separately to source non-genetically modified organism (GMO) maize to be used by poultry farmers. The KPFBA has suggested that there should be common allotment in consultation with each other thus giving equal opportunity to all applicants.

In Karnataka, all the Small and Medium poultry farmers had applied in April 2019 for import of non-GMO maize under TRQ (tariff rate quota) scheme through the KPFBA paying the prescribed fee of Rs. 18.5 per ton to MMTC. A few big players have also applied for import of maize in large volumes. The KPFBA fears that the big players may get all the maize, leaving nothing for the Small and Medium poultry farmers.

Meanwhile, the KPFBA has got to know from its sources that the MMTC has not received the expected response from global suppliers for the tender floated, thus adding to the stress levels of farmers who have stopped placing chicks due to non-availability of maize. The Small and Medium farmers for whom poultry is a livelihood are in severe distress.

It may be mentioned here that the Government of India had allowed import of nearly 5 lakh MT of maize under TRQ scheme between December 2018 and April 2019 which mitigated the problem to some extent. While thanking the Government for the same, the KPFBA has sought its immediate intervention.

## HIPRA, a true reference in prevention for animal health

### Rajamundry, Chandigarh, Karnal, Kolkata:

#### INTRODUCTION

HIPRA is a multinational veterinary company dedicated to the research, production and marketing of products for prevention in Animal Health

Our history spans more than half a century and do currently occupy one of the top positions amongst pharmaceutical companies producing Biologicals for the veterinary industry worldwide.

At HIPRA we are convinced that the future lies in prevention. In fact, R&D is the core of our knowledge. Currently, 16% of HIPRA staff and 10% of annual turnover are dedicated to R&D and Regulatory Affairs. There is a single objective to all of this: to generate and apply the latest scientific advances in the development of innovative solutions that provide differential advantages.


We are specialists in developing innovative preventive solutions that make it possible to identify existing threats on any poultry or livestock farm before they occur, in such a way that we can act to prevent them or minimize their effects. We have a broad range of highly innovative Biological products, an advanced diagnostic service and our own line of Diagnostic kits.


The company is carrying out a steady and solid process of international expansion and has its own branches in 38 countries and two strategically located production plants, one in Europe (Spain) and another in South America (Brazil).

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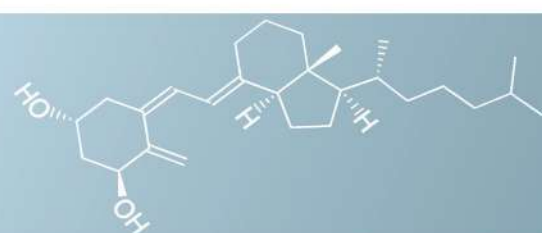
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Together with a worldwide distribution network, HIPRA's products are available to customers in more than 100 countries across the five continents.

The company's future strategy is clearly expressed in its vision: to be the reference in prevention for Animal Health. HIPRA has a great potential for growth and the most products launched in recent years, and this line will continue in the coming years. This enables us to continue our international expansion, while always maintaining the independence that we are characterized by and the entire dedication to the world of animal health and serving our customers.

## And HIPRA launch event continues

HIPRA organized its first company launch event at India's largest poultry hub in the city of Hyderabad on 28th May, 2019 at Hotel Novotel. Post the successful launch events of HIPRA at Hyderabad, Coimbatore and Namakkal, the events continued in the cities of Rajamundry on 11th June at Hotel Shelton, Chandigarh on 13th June at Hotel Holiday Inn and Karnal on 14th June at Hotel Noor Mahal. Later in the month of July, the launch event were organized at Kolkata on 16th July at Hotel Novotel and concluded at Pune (HQ of HIPRA India) on 18th July at Hotel Conrad. The launch events were conducted in different regions of India as well in series to spread the awareness of HIPRA's entry in the Indian poultry market and its unique products.

The events commenced with the welcome note by Dr. Shyam Vane, Business Manager, HIPRA India in which he addressed the gathering. He then called upon the key functionary to invite important dignitaries on the stage to light the lamp and mark the inauguration of the Launch. After the lighting of lamp, he introduced the HIPRA team including the distributors of the region. poultry Industry.

Dr. Shyam Vane invited Ms Panicha Thanahiranchai, Regional Manager, Asia & Oceania, to start the occasion with the inauguration of HIPRA to announce the initiation of its techno-commercial operations in India. Following this, Ms Panicha Thanahiranchai, Regional Manager, Asia & Oceania, had given a corporate presentation on HIPRA. She informed the guests regarding the company's history, vision, mission and future goals. She also described about its aim to be the reference in prevention for animal health by ensuring the best quality vaccines for poultry both in terms of efficacy and even safety. Ms Panicha Thanahiranchai, even briefed about the recent activities of the HIPRA in the poultry industry worldwide. She even enlightened the delegates on HIPRA giving an insight on the company strategies, briefing about its range of products and services, including its future plans, the facilities it has worldwide and its team. Explaining about the company strategies she threw light on HIPRA's vision to be the reference in prevention for animal health.



*Dr. Shyam Vane, Business Manager, HIPRA India*



*Ms Panicha Thanahiranchai, Regional Manager, Asia & Oceania*

Ms Panicha Thanahiranchai even described about its global positioning giving an idea about the vaccines and diagnostic kits HIPRA had developed till date. The audience was informed about the technological solutions which HIPRA offers through smart vaccination which is a state-of-the-art vaccination technique for the hatchery with specific precision mechanisms and has HIPRALink Software for the traceability of synchronized vaccination. She even elaborated about HIPRA's own diagnostic service called Diagnos in 9 different areas. The importance of the continuing educational programme called HIPRA University which the company offers in the field of disease prevention intended for veterinarians was very well described by him. At the end, Ms Panicha Thanahiranchai, concluded her presentation by thanking the entire HIPRA team along with the distributors of the region and requested them for extending their support in future for establishing HIPRA in the Indian Poultry Industry.

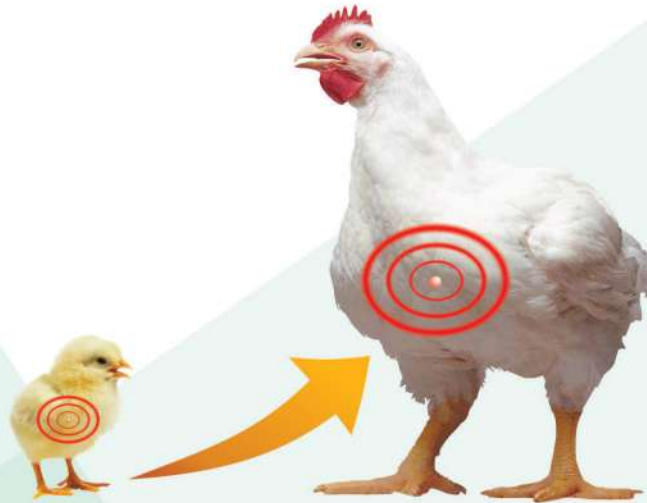
The launch events conducted in the evening was attended by layer and breeder farmers, integrators and reknowned consultants from the field of poultry industry as well, who graced the occasion with their presence.

It was followed by detailed and comprehensive presentations on HIPRAVIAR CLON – Live cloned vaccine against Newcastle disease including HIPRAVIAR CLON/IB H120 - Live combined vaccine against Newcastle disease and Infectious bronchitis by Dr. Jorge Vinas Villa, Regional Technical Manager, Asia and Oceania, from Philippines. He stressed upon the advantages HIPRAVIAR Clon which can be administered to all types of birds providing long lasting immunity without manifestation of secondary reactions. He shared more ideas on HIPRAVIAR CLON with his vast field experience in HIPRA. Dr. Jorge Vinas Villa, Regional Technical



*Dr. Jorge Vinas Villa, Regional Technical Manager, Asia & Oceania*

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Manager highlighted on efficacy and safety of HIPRAVIAR CLON against Newcastle disease by sharing valuable information based on the various published field trial reports conducted across various countries. It was interesting to know how.

HIPRAVIAR CLON is beneficial to prevent all genotypes of Newcastle. The interaction of the HIPRA technical team with the poultry experts in each of the areas was very informative and useful. Subject matter expert Dr. Shyong Weh Ong, Regional Technical and Marketing Specialist, Asia Oceania from Malaysia apprised the delegates about the advantages of cloned vaccines of HIPRA. He also presented on CORIPRAVAC, a trivalent inactivated vaccine with oil adjuvant against Infectious Coryza containing inactivated *Avibacterium paragallinarum* (serovars A, B, C).



*Dr. Shyong Weh Ong, Regional Technical and Marketing Specialist*

Dr. Shyong Weh Ong, Regional Technical and Marketing Specialist also presented on HIPRAGUMBORO CH/80 – Live cloned vaccine against Infectious Bursal disease. He stressed upon the technical support that HIPRA offers for Gumboro prevention programme among which unique are Lymphostimer, the ready smart application that helps to determine the exact date of vaccination and Bursometer that helps to check the health of the bursa.



*Dr. Kakoli Ahmed, Technical and Marketing Manager*

Dr. Kakoli Ahmed, Technical and Marketing Manager, HIPRA India presented on Avisan Secure – Killed vaccine against Salmonellosis. She emphasized about the benefits of using HIPRAGUMBORO CH/80 against Gumboro disease. While presenting on Avisan Secure, she mentioned that in view of major food and animal feed safety concerns, HIPRA has taken key initiatives to provide an effective and safe vaccine against *Salmonella enteritidis* and *S. typhimurium*. It is well proven in published scientific trials that HIPRA products are highly efficacious, safe, for profitable and sustainable poultry production. Vaccination with AVISAN SECURE will allow the producer to optimize the microbiological quality of table eggs and prevent *Salmonella enteritidis* and *S. typhimurium* which are the most common sources of food poisoning through poultry products.

Dr. Shyong Weh Ong, Regional Technical and Marketing Specialist and Dr. Kakoli Ahmed, Technical and Marketing Manager were the presentors in the Kolkata and Pune launch events. Dr. Shyong Weh Ong, Regional Technical and Marketing Specialist spoke on the Killed vaccines of HIPRA - CORIPRAVAC, a trivalent inactivated vaccine with oil adjuvant against Infectious Coryza and Avisan Secure – Killed vaccine against Salmonellosis whereas Dr. Kakoli Ahmed, Technical and Marketing Manager presented on the Live cloned vaccines of HIPRA - HIPRAVIAR CLON, a live cloned vaccine against Newcastle disease including HIPRAVIAR CLON/IB H120, a live combined vaccine against Newcastle disease and Infectious bronchitis and HIPRAGUMBORO CH/80, a live cloned vaccine against Infectious Bursal disease. The curtains came down on the Launch at the end of the technical presentations when Dr. Shyam Vane, Business Manager, delivered the vote of thanks for the active participation of the delegates from all fields of poultry industry in spite of their busy schedule.



The events concluded with a good note followed by networking dinner and group photography.



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Dr. Shyam Vane, Business Manager had extended his special thanks to the regional HIPRA distributor and the Key Account Managers individually for their active participation and cooperation in organizing the events at each place making it a success. He once again welcomed them all to the HIPRA India team.



Our team of Key Account Managers have - Mr. Vikash Kumar (North Region), Mr. Sourav P Das (West Region), Dr. V Palani Kumar (Tamil Nadu and Karnataka Region), Mr. Manikyala Rao Andey (Andhra Pradesh and Telangana) and Mr. Dibyendu Pal (East Region). The distributors for HIPRA India are: Mr. D. S. Subramaniam, Tara Enterprises, Mr. Sugumar Gopi, Hindusthan Animal Care, Mr. Mohan Sridevi, (Sri Sara Groups, Gokul Traders), Dr. Atul Deshmukh, (H. R. Multiples), Mr. Pintu Das, (Das Drug Centre) and Mr. Manjit Singh Kooka, Astra Marketing.





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## GBPUAT to conduct 106th All India Farmers Fair & Agro- Industrial Exhibition at Pantnagar

### Pantnagar:

Govind Ballabh Pant University of Agriculture & Technology (GBPUAT) Pantnagar-263145, (U.S. Nagar), Uttarakhand, is poised to conduct its 106th All India Farmers Fair & Agro- Industrial Exhibition at Pantnagar.

Govind Ballabh Pant University of Agriculture & Technology, Pantnagar, popularly known as Harbinger of Green Revolution in India was dedicated to the Nation in 1960 by Late Pt. Jawahar Lal Nehru, the first Prime Minister of independent India, to promote agricultural education in the country. Since then, the University is catering to the needs of the society by imparting quality education, need based research and disseminating farmer's friendly innovations through extension education. The University has grown many folds since its inception and presently houses 8 constituent colleges with Agriculture, Home Science, Veterinary Science and Technology as mainstreams. The University has credit of receiving prestigious Sardar Ballabh Bhai Patel Best Institution Award twice for the year 1997 and 2005.

### The University has made significant

achievements in producing high yielding disease resistant crop varieties, techniques of crop production and technological tools to enable farmers in increasing their crop production. With a view to display its innovations, the Directorate of Extension Education organizes All India Farmers' Fair and Agro Industrial Exhibition twice in a year mainly to benefit farming community. This year the forthcoming Kisan Mela is being organized from September 27-30, 2019. In this endeavor, we appeal to you all to participate in forthcoming "Krishi Kumbh" and join hands with the University in its noble cause of uplifting rural mass by displaying your valuable products and innovative ideas/techniques. We hope that with your participation and cooperation, the University will achieve its objectives in a most efficient manner.

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## Himalaya conducts technical seminar at Pune

Pune :



Babu - President KPFBA, Dr. Ajay Deshpande, Mr. Rajendra Thorat, Mr. Nabaji Kalbhor.

The technical session was presented by Dr. Sudheer Rukadikar, Senior Poultry Consultant on the topic "Consistent Egg Production- Key factors". The speaker emphasized the issues that hinder the egg production and various ways and means to improve the productivity of the birds.

Mr. Neti Patel, Business Head-

The Himalaya Drug Company organized a technical seminar on 26th July 2019 at Hotel Blue Diamond, Pune. The seminar was organized in collaboration with Poultry Farmers and Breeders Association of Maharashtra.

The seminar was attended by major breeding farm owners, integrators, and consultants. Some of the eminent personalities who attended the meeting were Mr. Vasanth Kumar C Shetty - President PF& BA, Mr. Akhilesh



Animal Health Division, welcomed the gathering and briefed the audience about Himalaya's strengths and achievements.

The meeting was concluded with a presentation by Dr. E Balamurugan, on the recently launched products HimLay and PhytoGrow.



## Kemin Industries organized a ONE-DAY WORKSHOP on 'Holistic Approach for Gut Health Solution' in Dhaka

### Bangladesh, Dhaka :

While the usage of AGPs (Antibiotic Growth Promoters) are restricted in the country, increasing awareness of the consumers towards safe, quality and affordable protein for consumption are imposing more and more pressure on the feed and poultry producers. The efficient gut health management and economical poultry and egg production are becoming the prime criteria for the nation. To overcome these challenges Kemin organized a one- day workshop on Holistic Approach for Gut Health Solution.

Being one among the top corporales of poultry feed industry of Bangladesh, Dr. Chris Nelson, President and CEO, Kemin Industries had excitingly shared the new vision and logo for striving to sustainably transform the quality of life every day for 80 percent of the world with its products and services. Dr. Chris emphasized on Kemin's focus to continue customer services, adding value to customers' business and on a larger perspective towards the vision.

Further discussion was on the gut health scenario in South Asia and approaches for and efficient management shared by Dr. S. Saravanan; General Manager-Technical Services.

Dr. Chandrasekar S, Marketing Manager introduced the "Triple Check" approach, from feed to farm emphasizing on strengthening the gut health of animals using our unique solutions - CLOSTAT™, Acid LAC™ Supreme, ButiPEARL™ & Aleta™.

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novel findings of the solutions and ideal criteria to choose efficient gut health additives.

Mr. Sushanta Dey, Director-Sales, South Asia inaugurated the workshop with his warm welcome note to the poultry producers of Bangladesh and the program ended with the valedictory note of Dr. Azimul Haque, Country Manager, Bangladesh. An interactive networking evening was proved evident in exchanging the thoughts among the participants, industry leaders and experts on gut health solutions.

### About Kemin Industries

Kemin Industries ([www.kemin.com](http://www.kemin.com)) is a global ingredient manufacturer that strives to sustainably

transform the quality of life every day for 80 percent of the world with its products and services. The company supplies over 500 specialty ingredients for human and animal health and nutrition, pet food, aquaculture, nutraceutical, food technologies, crop technologies and textile industries.

For over half a century, Kemin has been dedicated to using applied science to address industry challenges and offer product solutions to customers in more than 120 countries. Kemin provides ingredients to feed a growing population with its commitment to the quality, safety and efficacy of food, feed and health-related products.

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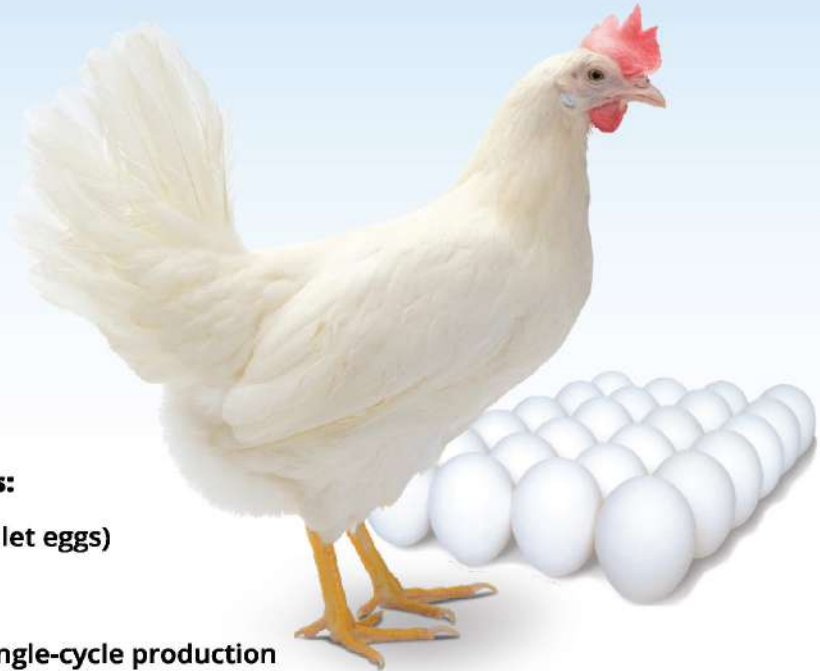
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## Production of health promoting eggs through nutrient manipulation

S. Jayachandran, P. Selvaraj, P. Visha and V. Thavasiappan  
Dept. of Veterinary Physiology and Biochemistry,

Veterinary College and Research Institute, Orathanadu - 614 625

### Introduction

Egg consumption per person has decreased in some parts of the world in the last decades due to the fear of fat and cholesterol as they are associated to the cardiovascular disorders. However, there has been an increasing efforts in our country as well as in rest of the world to improve its nutritional value of eggs by enhancing nutrient manipulation.

According to the World Health Organization, the protein in egg has the highest true digestibility of major foods, and its nutritive value is also high because it contains the essential amino acids in the required proportions. Biologically important bioactive compounds could be increased in eggs by feeding different concentrations of active compounds through eggs.

### Chromium

As chromium enhances the uptake of glucose, insufficient dietary chromium is associated with increased risk factors linked with non insulin-dependent diabetes and cardio vascular disease. Variables in humans that have been shown to be improved following chromium supplementation include fasting blood glucose concentration and glucose tolerance, serum insulin and insulin binding, total cholesterol and HDL-cholesterol.

The chromium content in egg yolk and albumen was higher for chromium supplemented hens than for control ones, without differences from chromium source (organic or inorganic). The chromium content increased sharply the first two weeks while decreased to two-three fold the basal level thereafter. Chromium content of egg was also increased in some experiments more than five folds by supplementation of chromium to the hen's diet. However, chromium content decreased with time of supplementation (30 to 75 d). Therefore, it is possible to accumulate chromium in egg yolk and albumen to supply it as a chromium source for humans.

### Iron

Iron-deficient anemia is probably the most prevalent human nutritional disorder, leading to reduce work performance and increased morbidity. Individuals particularly vulnerable to iron deficiency are those with high iron requirements – children and pregnant women. The relative biological value of yolk iron was not different from that of the reference salt, ferrous sulphate, without any interference of egg yolk in the absorption of organic salt.

Eggs could contribute significantly to the dietary iron supply since one standard egg contains about 1 mg of iron. Furthermore, the ration of iron to calories in eggs, 12.5mg/ 1000 kCal, is about twice that in the average diet. Eggs might be a food of choice for those who require a generous supply of dietary iron and a limited calorie intake, and iron fortified eggs will have an increased value. When hens were fed graded levels of iron from 15 to 65 ppm, a dose response was observed hematocrit and hatchability. Weight gain, hematocrit and hemoglobin were markedly improved when increasing levels of (0 to 80 mg/kg) of added iron from analytical grade ferrous sulphate were fed to the chicks. The iron content of egg yolk was increased up to 125 and 140% with inorganic and organic sources. Organic acids have been characterized as enhancers of iron absorption in human. Then it might be possible that ascorbic, citric, maleic, tartaric or lactic acids increase iron absorption by the hen. However, phytates, polyphenols and several vegetable proteins, all likely to be present in the hen's feed are known as inhibitors of iron absorption. Also there is an interaction between manganese and iron, in which excess manganese impairs iron utilization, but excess iron does not antagonize manganese.

### Iodine, manganese and selenium

Feeding potassium iodide, kelp, iodized linseed meal to laying hens resulted in high egg uptakes of this element that were 10 times the basal level (up to 400 µg/egg) when 16 mg/kg iodine from these source were fed (NRC 0.3 mg/kg). egg iodine can be increased markedly and it has recently been postulated that kelp-fed

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laying hens may produce eggs that reduce blood cholesterol in human subjects.

Manganese levels in egg yolk responded only fractionally of the increase in the dietary manganese supplement. Adding 60 mg/kg of manganese to a laying diet containing 37.5 mg/kg (NRC 30 mg/kg) increased egg yolk manganese levels from 156 to 222 pg/egg. However, there is an impairment of iron absorption when high levels of manganese are fed.

Egg selenium values reflect changes in dietary selenium in a short period of time. In addition, various selenium compounds give different pattern of distribution because egg white proteins are synthesized in the oviduct and yolk proteins are synthesized in the liver. Selenium-methionine was particularly effective in increasing egg albumen selenium concentration while sodium selenite and selenium cysteine were more effective in increasing egg yolk concentration. It is found that increments up to five fold in selenium content of eggs ( from 2 to 10 pg/egg). Appropriate selenium supplementation of rations for laying hens may help to provide for selenium needs of the human via the egg.

#### **Vitamin A**

Vitamins in the egg would be expected to vary with the concentration in the feed. At higher dietary levels liver storage increased markedly while egg yolk level continued to increase at a moderate rate. Over the range of 2600 to 22000 IU/ kg diet liver storage of vitamin approached a 200 fold increase while egg yolk vitamin content doubled (NRC 4000 IU/ KG, 117 IU/egg). There is a delay of 10 weeks on the supplementation of the diet with vitamin A and increase of this vitamin in the egg, as liver act as a regulatory storage.

#### **Vitamin D**

In contrast to the situation with vitamin A, there is a linear relationship of dietary vitamin D to vitamin D in egg yolk. Excess vitamin D is absorbed, transferred to the ovary and secreted in egg yolk during its formation. In other experiments, the concentration of vitamin D<sub>2</sub> in the yolk was 14.5 IU/g when the concentration in the diet was 20 IU/g. Hence egg yolk can be fortified with vitamin D in order to increase its nutritional value.

#### **Vitamin E**

When vitamin E was supplemented at 200 pg/g of feed, the concentration of vitamin E in the egg was 188 pg/g. eggs from laying hens fed diets with 10 (basal level), 200, 2000, 20000 mg/kg of alpha tocopheryl acetate contained up to 2, 15, 100 and more than 200 mg alpha tocopherol per respectively. The increase in vitamin E content of the egg was in a dose dependant manner. It becomes clear that those enriched eggs may be effectively used as a good source of vitamin E for human consumption.

All together from earlier results indicate that vitamin E enriched eggs may have a very good prospect to use in the processing industry and consumer preferences.

#### **Carotenoids**

Singlet molecular oxygen has been shown to be generated in biological systems and is capable of damaging proteins, lipids and DNA. When the ability of some biological antioxidants to quench singlet oxygen was studied, the quenching ability of carotenoids was higher than that of tocopherols. Supplementation of broiler breeder diets with 400 ppm of beta carotene, canthaxanthin or lutein increased their respective concentrations in the yolk up to 14, 426 and 701 ppm respectively, being lutein the most effectively deposited. When single comb White Leghorn laying hens were fed diets supplemented with beta carotene, DL-alpha tocopheryl acetate or their combination, yolk concentration of beta carotene increased from 0.14 to 5.19 ppm at 200 ppm diet inclusion. Therefore, it is possible to significantly increase the concentration of beta carotene and retinol in chicken eggs. However, because of the relative expense involved it may not be very attractive from the commercial standpoint to increase egg yolk concentrations of beta carotene in the diet. Increments in the lutein content of egg yolk are much more feasible and economical.

#### **Omega-3 fatty acids**

In the 1950s, it was discovered that polyunsaturated vegetable oils had pronounced plasma cholesterol lowering effect, and it was also noted that fish oil had a similar effect. In the early 1980s the concept that omega-3 fatty acids could be beneficial to heart health gained nutritional attention. Docosahexaenoic acid decreases blood platelet function and is highly concentrated in the brain where its depletion leads to functional





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impairments.

The physiological effects of omega-3 fatty acids are lowering of plasma triglycerides, increased aggregation time for platelets, decreased viscosity of blood, decreased blood pressure, reduction in atherosclerosis, reduction in inflammation and reduction in tumors. Docosohexaenoic acid and eicosapentaenoic acid enriched eggs reduced serum triglycerides and blood pressure. Related results with linolenic acid enriched eggs showed no such beneficial effects but did improve the ratio of omega-3/ omega-6 acids. There are two main approaches in order to increase the omega-3 content of the eggs, either the enrichment of the diet with linolenic fatty acid or a vegetable source diet (flaxseed, rapeseed, linseed or the addition of any source of eicosapentaenoic and / or docosohexaenoic fatty acids.

The flavor scores of eggs from control diet were more favorable than those of eggs from linolenic acid diet, but their differences were only minor. Some differences were also found among laying hen strains on arachidonic acid and docosohexaenoic fatty acids as well as for the flavor scores of hard boiled eggs with linolenic acid diets. When 2% refined fish oil was added to hen's diet, no differences were found for egg taste not flavor. Dietary herring meal level did not influence the total lipid content of the egg yolk. But significant incorporation of omega-3 fatty acids in the egg was obtained by feeding herring meal at 4-12% to laying hens, with a linear relationship. Three percent of dietary menhaden oil increased yolk omega-3 fatty acids: linolenic acid from 14 to 21-25 mg/egg, eicosapentaenoic acid from 4 to 15-28mg/egg, docosohexaenoic acid from 19-39 to 123-178 mg/egg; while the ratio of omega-6/ omega-3 acids decreased from 15 to 3.

Cooking did not significantly alter the levels of omholesterolega-3 or omega-6 long chain polyunsaturated fatty acids in the egg. Alterations in fatty acid composition did not significantly affect characteristic functional properties of eggs.

### **Cholesterol**

Although cholesterol is a very small part of an egg, it has received as much attention as the major yolk components because of its continuing interest for human nutrition. Attempts at controlling the cholesterol content of eggs by variations in normal diets have not been completely successful. It has been hypothesized that the inability to achieve reduced levels of cholesterol by selection is due to a physiological control mechanism which ultimately causes cessation of egg production when egg yolk cholesterol deposition is adequate for embryo survival.

### **Therapeutic antibodies**

Passive immunization, as opposed to vaccination, consists of oral administration of antibodies for disease prevention, and has emerged as an alternative to the use of antibiotics, without any possible resistance from the microorganisms. Passive immunization requires large amount of antibodies.

Avian IgY can be produced in larger amounts and lesser cost than mammalian IgG, and it has additional advantages: welfare of the antibody producing animals, the collection of antibody source is much easier, there are less cross reactions when administered. Moreover, antigen binding and bacterial cell agglutinating capacity of the IgY remains after heating up to 70 °C for 15 min, after digestion with alimentary tract proteases, freezing and freeze-drying repeated several times. Considering its availability to obtain in the technical scale, it seems a good idea to select yolk gamma globulin, as a food additive to fortify the products ability to last longer and be safer for the consumer. The specific antibody enriched eggs can be directed either to human or livestock disease prevention, and several reports have been published recently confirming its efficacy in both cases.

Since mammal-derived antibodies are immunogenic in patients, egg yolk IgY obtained from immunized laying hens could be the most cost effective treatment, rather than recombinant DNA technology. Therefore, eggs can be considered a convenient source for the production of polyclonal antibody specific to a variety of antigens.

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## Poultry Disease Prevention during rainy season

Dr. R.Jayanthi<sup>1</sup> and Dr.M.Boopathy Raja<sup>2</sup>

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### Introduction:

Seasonal variation is one of the major non-genetic factors that affect livestock production. Poultry and other livestock animals consume less feed and drink more water in the hot season in order to cool their body while during the rainy/winter season, they increase their level of feed intake to generate heat and stay warm. The rainy season is usually with an increase in relative humidity and a reduction in temperature. The rainfall affects both the quality and quantity of feed intake in poultry while wind speed has an impact on the outbreak of diseases. These changes affect the production of birds, most especially in laying birds, as the egg production is reduced in extremely cold or hot weather. Some poultry diseases are prevalent in the wet, rainy or winter seasons because the onset of rain favours the proliferation and spread of causative organisms of particular diseases and parasites. Hence, most of the poultry farmers experience high morbidity and mortality during the rainy season.

Certain poultry diseases which are very important in poultry production, common in rainy season and that can be prevented. They are 1. Aspergillosis, 2. Bacterial diseases,

3. Coccidiosis, 4. Fowl cholera, 5. Fowl pox

### 1. ASPERGILLOSIS

Aspergillosis is the disease caused by *Aspergillus fumigatus* in poultry. Due to the high humidity during rainy season the feeds and litter materials are creating a favourable environment for fungus to grow and thrive. The spores of *Aspergillus* are inhaled by the birds and these spores develop into lesions and filling the lungs further causing respiratory problems or discomforts.

**Acute form:** Young chicks are generally affected by an acute form of Aspergillosis and results in high morbidity and mortality. Commencement of infection is very quick and usually develops within a week. Most affected birds will die within a few days without any emergency veterinary care.



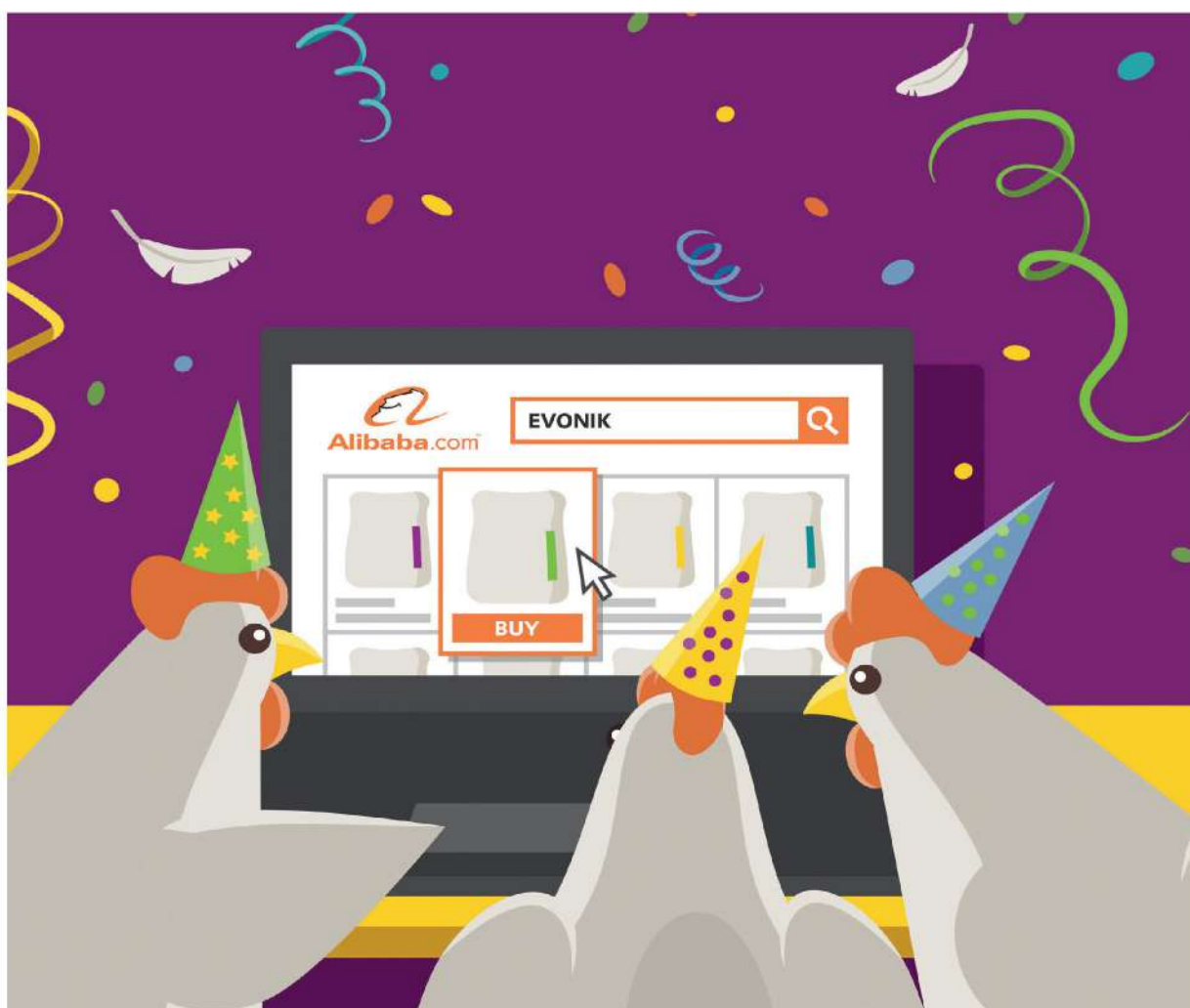
The most common signs: Lethargy, depression, loss of appetite, difficulty in breathing, and cyanosis (bluish/purplish comb).

**Chronic form:** Older birds are affected in chronic form. This is usually very subtle in onset, and it may take several weeks or months to develop. Most of the birds are with the history of malnutrition, stress, concurrent illness, or prolonged antibiotic/corticosteroid use. The entire course of the disease ranges from less than 1 week

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to over 6 weeks in duration.

The most common signs: Weight loss, reduced appetite, exercise intolerance, increased respiratory rate, changes in vocalization (voice), often more apparent in roosters, audible respiratory sounds, tail bobbing, open-mouthed breathing.

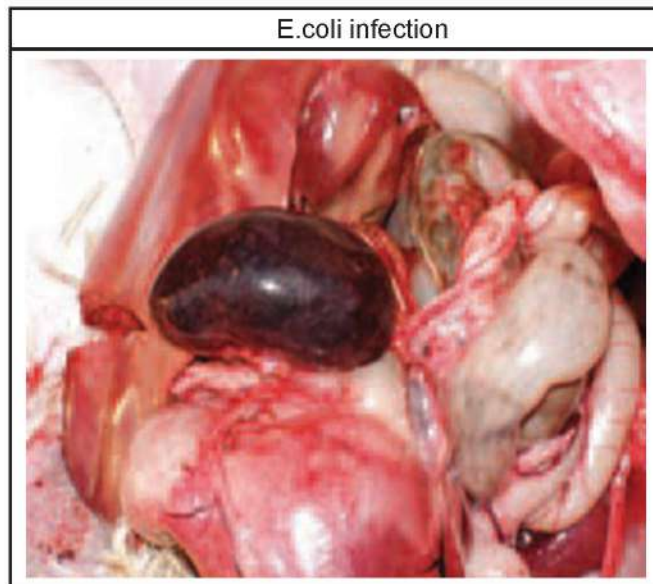
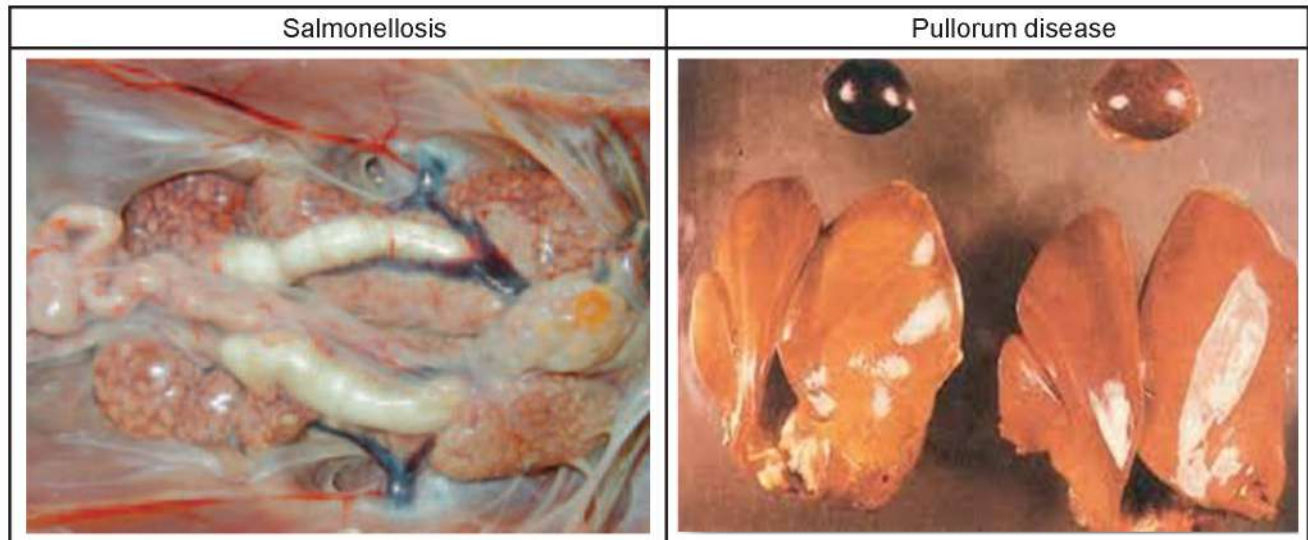
Diagnosis: A presumptive diagnosis of aspergillosis can usually be made based on the history of the flock, clinical signs, and physical examination. Samples can be analysed for the presence of aspergillus.

Prevention of Aspergillosis: Dry, good quality litter and feed and hygiene will help in the prevention of aspergillosis. Antifungal drugs such as Thiabendazole or Nystatin can be used in feed.

Treatment: Usually there is no treatment. Environmental spraying with effective antifungal, antiseptic may help reduce the challenge. Amphotericin B and Nystatin have been used in high-value birds.

**2. BACTERIAL DISEASES:**

Salmonellosis, Escherichia coli and Pullorum Disease (Bacillary White Diarrhoea): These bacterial diseases affect birds of all ages. They are endemic in farms or pens with poor sanitation, such as is seen when wet litter is allowed to stay for a long time. They affect the digestive system of the infected birds.



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**Diagnosis:**

- Severe diarrhoea
- Loss of appetite
- Depression and emaciation
- Chicks suffer omphalitis
- White pasty diarrhoea in pullorum disease
- Huddling together and laboured breathing

**Prevention, Control and Treatment**

Salmonellosis, E. coli and Pullorum diseases can be treated by administering a broad-spectrum antibiotic to the flock. High-level farm/pen hygiene and sanitation must be maintained. Biosecurity measures should be in place. Contaminated feeds should be avoided.

**3. COCCIDIOSIS**

Coccidiosis is caused by a protozoan *Eimeria* sp in poultry which affects various sites in the intestine. The infectious process is fast (4–7 days) and is characterized by parasite replication in host cells with extensive damage to the intestinal mucosa. Poultry coccidia are generally host-specific, and the different species parasitize specific parts of the intestine. However, in game birds, including quail, the coccidia may parasitize the entire intestinal tract. Coccidia are distributed worldwide in poultry, game birds reared in captivity, and wild birds. The wet litter and the hot pen temperature commonly observed in the rainy season favours the sporulation of the coccidian oocyst and therefore, the outbreak of coccidiosis.

**Diagnosis:**

Clinically, bloody faeces, ruffled feathers, anaemia, and somnolence are observed. Other signs of coccidiosis range from decreased growth rate to a high percentage of visibly sick birds, severe diarrhea, and high mortality. Feed and water consumption are depressed. Weight loss, development of culls, decreased egg production, and increased mortality may accompany outbreaks. Mild infections of intestinal species, which would otherwise be classed as subclinical, may cause depigmentation and potentially lead to secondary infection, particularly *Clostridium* spp infection. Survivors of severe infections recover in 10–14 days but may never recover lost performance.

The lesions are almost entirely in the intestinal tract and often have a distinctive location and appearance that is useful in diagnosis.

**Prevention:**

- It is good to ensure that the poultry house is generally clean and dry.

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- Ensure water is clean and fresh. Keep feeding areas clean and dry.
- Ensure the birds have enough space i.e. overcrowding should be prevented as it is a predisposing factor for coccidiosis. Chickens need an average of a square meter for 3-5 birds.
- If the chicks have not been vaccinated against coccidiosis, provide medicated starter feed for them. Anticoccidial medication should be given to the chicks at around 12 days of age (this might vary depending on the vaccination schedule being followed).
- An all-in all-out method should be employed on the farm in order to prevent a horizontal transfer of infection. If this method is not feasible, keep the new batch quarantined for a minimum of two weeks, for the protection of the current stock.

### Treatment:

Once coccidiosis is diagnosed in a flock, all the birds need to be treated. Also, the litter needs to be changed so that birds do not pick up the sporulated oocyst from the droppings of affected birds. Common anticoccidial drugs include; Amprolium, toltrazuril, sulfaquinoxaline etc. can be used to treat the birds.

### 4. FOWL CHOLERA

Fowl Cholera is a bacterial disease that affects birds of age 6 weeks old and above. The bacterium responsible for this is *Pasteurella multocida*. It is highly contagious and mortality in acute cases is high. The causative organism is spread readily during the rainy season because wet litter serves as a habitat of numerous microorganisms.

### Diagnosis:

In acute cases, birds that appear healthy and die suddenly while in chronic cases the affected birds show the following symptoms:

- Yellow, green or grey diarrhoea
- Loss of appetite
- Laboured breathing
- Drooped wings and tail feathers
- Ruffled feathers
- Swelling of the leg joints, sinuses, wattle and foot pad
- Twisting of the neck (torticollis)
- Discharge from the nostril or beak



### Prevention, Control and Treatment

Fowl cholera can be treated using sulfa drugs, tetracycline, and erythromycin. Poultry birds can be vaccinated against fowl cholera by administering a fowl cholera vaccine. Maintain proper hygiene and sanitation. Practice a high level of biosecurity and prevent rodents, wild birds, and other animals.



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To make up the requirement of Amino Acids

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Improve hatchability in breeders

Stress reliever in semen collection and Artificial insemination

Improve immunity

Selenium and Nucleotides helps to improve immunity in stress and distress condition

Reduce stress in peak egg production

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Disclaimer: This Product information is circulated solely for informational purpose. Although great care has been taken in compiling the information.



### 5.FOWL POX

Fowl pox is a highly contagious disease that affects poultry at any age. It is caused by poxvirus transmitted by mostly mosquitoes and other blood-sucking insects. Since the mosquitoes are being the vector, that breed well during the wet season due to the abundance of stagnant water. Also, the incidence of wet litter becomes apparent when poultry houses are not adequately shielded from rain. This leads to the development of wet litter which then predisposes to fly problems in the pen.

#### Diagnosis:

Fowl pox leads to the development of round lesions with scabby centers on the skin of the birds. The majority of the skin lesions are located on the wattle, face, comb, and some are occasionally located on the legs.

This disease also affects the mouth and windpipe linings. The lesions that are formed in the throat can develop to the extent of blocking the throat and it could eventually lead to death as a result of suffocation. Lesions on the face can extend to the eyes, causing temporary or permanent blindness of the affected bird.

#### Prevention:

The mechanical carriers of fowl pox are mosquitoes. So it is advisable to reduce the mosquitoes around the farm and environment. Ordinary sanitation and management practices will not prevent this disease, so vaccination is often the solution. It is recommended to vaccinate chickens and turkeys such as breeders, egg layers, and those that are highly susceptible to fowl pox. Live fowlpox vaccine is administered in the wing web of birds within age 6 and 10 weeks. If aggressive pecking is controlled among birds, skin damage which fowl pox causes is reduced.

#### Treatment:

Unfortunately, there is no treatment for fowl pox. But as long as a diseased bird is eating and drinking, it will recover from the disease in about two weeks or more with low mortality rate. When a bird recovers successfully from fowlpox, it is immune to the disease permanently.



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## RESPONSE - Eases respiratory distress in poultry

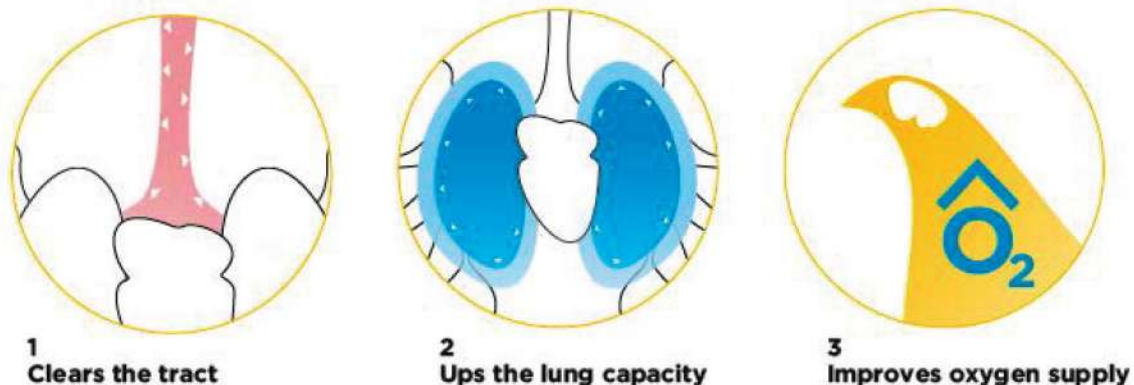
S V Vaidya, C S Saraf and J H Nandardhane

Noble Vetscience, Pune, India

### Introduction:

Respiratory diseases present a continuing, potential threat for economic loss in poultry industry. Respiratory diseases are commonly associated with a number of viruses, bacteria, mycoplasma infections and other factors such as pollutants, moulds, chemicals, gases, allergens and draughts. Poor management practices and housing problems such as poor ventilation resulting in ammonia build-up is also a major cause of respiratory diseases. Respiratory disease causes respiratory distress, inflammation of respiratory organs, increased mucus secretion and congestion of lungs. It also interferes with oxygen availability to the lungs and thus directly affecting the liveability of birds. Many a times, these respiratory infections are responsible for high mortality in poultry flocks. This demonstrates the need for the establishment of more comprehensive control strategies to overcome distress caused during respiratory diseases.

There are many, well known herbal formulations available in market to cure respiratory distress in poultry. One of such polyherbal formulations (RESPONSE; M/s Noble Vetscience, Pune) was tested in present study for its efficacy during experimental respiratory distress. The mode of action of RESPONSE is based on the breakthrough Science of Life Energy which is proven through extensive research and field trials. The Phytogetic extracts used to formulate RESPONSE are *Atropa Belladonna* (Deadly nightshade), *Drosera Rotundifolia* (Common sundew), *Zingiber officinale* (Ginger) and *Passiflora incarnata* (Maypop), fortified with natural vitamins and minerals.



RESPONSE works on restoring the obstructed flow of Life energy in the alveolar cells (lungs) and respiratory tract epithelial cells by clearing the pathogens and debris at cellular level.

The energized Phytogetic extracts of RESPONSE help to relieve respiratory distress by reducing the mucus secretion, clearing the respiratory passage, improving oxygen carrying capacity of lungs, and improving the supply of oxygen to blood and the brain.

### Material and methods:

A study was conducted at KNP College of Veterinary Science, Shirwal to assess the Efficacy of 'RESPONSE' on induced respiratory stress in broiler chicken. One day old broiler chicks (128) were divided in four treatment groups of two replicates each as follows-

Group T0 - Control group: with basal diet

Group T1 - Induced Respiratory Stress group: with Basal diet

Group T2 - Induced Respiratory Stress + RESPONSE group: with Basal diet and supplementation of RESPONSE @ 500g/MT of feed after Induction of respiratory stress from fourth week onwards

Group T3 - RESPONSE group: Basal diet with supplementation of RESPONSE @ 500 g/MT of feed from first week onwards

All birds were reared under standard management practices like feeding, watering, medications and vaccination in all

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groups for 42 days of age. Throughout the trial feed and water were offered ad-libitum. The induction of respiratory stress was done fourth week onwards.

100% chicks were selected from each treatment group to evaluate the parameters, viz.: clinical symptoms of respiratory distress, average body weight (pen wise) and mortality. Histopathological study was performed to check the effect of respiratory stress on respiratory organs.

**Results and discussion:**

The clinical symptoms of respiratory distress were visible by the end of 4th week and exaggerated in 5th and 6th week. These include

symptoms like gasping, open beak and respiratory sounds (rales). The clinical signs were significantly severe in group T1 as compared to group T2. This indicates that RESPONSE reduces the severity of clinical signs in induced respiratory stress condition.

The mortality recorded varies within different groups. As shown in Figure 1, zero mortality was recorded in T0 Control group and T3 i.e. RESPONSE group. T1 group is showing significantly ( $P < 0.01$ ) higher mortality i.e. 13 as a consequence of induced respiratory stress. This is quite obvious since the birds are challenged to

respiratory stress and reared without any treatment to reduce the induced stress. However group T2, supplemented with RESPONSE fourth week onwards after induction of respiratory stress, is showing significantly reduced mortality (5) as compared to T1 group. This indicates improved liveability of birds in group T2 as a result of RESPONSE supplementation.

In case of body weight gain, continuous use of RESPONSE from day one significantly ( $P < 0.01$ ) improved body weight (2419 g) in T3 group as compared to T0 Control group (2302 g). This indicates that RESPONSE elicited growth promoting effect as well. This extra weight gain of 117 g is quite significant from commercial point of view.

However T2 group treated with RESPONSE during respiratory distress revealed significantly ( $P < 0.01$ ) increased body weight (2092 g) as compared to non treated T1 group. The body weights of different groups are presented in Figure 1.

Pathological study revealed maximum petechial and diffuse haemorrhages in tracheal mucosa of T1 group (Figure 2). Whereas group T2 supplemented with RESPONSE scored minimal tracheal haemorrhages (Figure 3). Histopathology of trachea and entire respiratory tract indicated intact epithelia and normal tissues in group T2 supplemented with RESPONSE (Figure 4). Birds in T1 group without RESPONSE showed significant inflammatory lesions in trachea (Figure 5).

Figure 1 RESPONSE improves Livcability and Weight gain

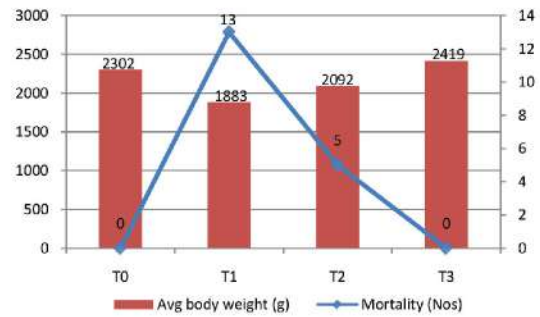


Figure 2 Tracheal lesions on 42<sup>nd</sup> day of age in T1 group



Figure 3 Tracheal lesions on 42<sup>nd</sup> day of age in T2 group



Figure 4 Response treated group (T2) with normal histopathology of trachea

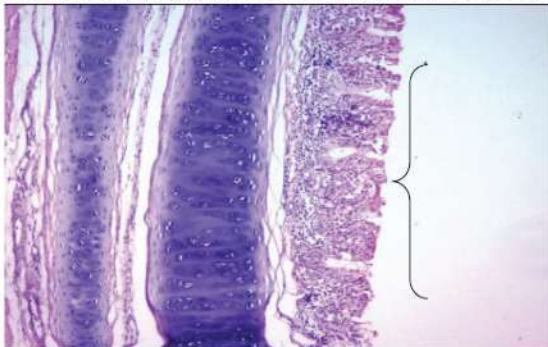
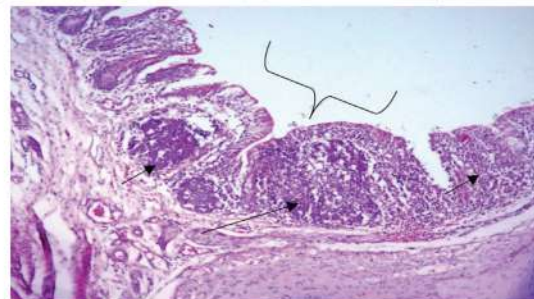


Figure 5 Birds without RESPONSE (T1) showed inflammatory lesions in trachea



**Conclusion:**

Results of present study indicate that addition of RESPONSE helps to control the respiratory stress very effectively. RESPONSE, if given as a dietary supplement from day one till liquidation of flock can improve overall performance of birds by enhancing body weight and reducing mortality. RESPONSE, a polyherbal dietary supplement is effective in all types of respiratory problems and can help in early recovery of birds against respiratory distress.



# Company Name-Polaris Equipment Pvt. Ltd.

Designation - National Sales Manager

Location- Pune

Position- 1

## Responsibilities Include:

- Developing and implementing effective sales strategies
- Leading nationwide sales team members to achieve sales targets
- Establish productive and professional relationships with key personnel in assigned customer accounts

## Job brief

We are looking for an experienced National sales manager to contribute to our company's sales objectives. Your responsibilities include supervising the sales team and building long-term client relationships.

As a National sales manager, you should use your creativity and thorough knowledge of sales processes to provide innovative ideas for business growth. Communication and team management skills are also essential for this position.

Ultimately, you should aspire to develop and maintain successful relationships with large, distributed customers.

## Responsibilities

- Develop and implement effective sales strategies.
- Lead nationwide sales team members to achieve sales targets.
- Establish productive and professional relationships with key personnel in assigned customer accounts.
- Negotiate and close agreements with large customers.
- Monitor and analyse performance metrics and suggest improvements.
- Prepare monthly, quarterly and annual sales forecasts.
- Perform research and identify new potential customers and new market opportunities.
- Provide timely and effective solutions aligned with clients' needs
- Liaise with Marketing and Product Development departments to ensure brand consistency.
- Stay up-to-date with new product launches and ensure sales team members are on board.

## Requirements

- Proven work experience as a National sales manager in Poultry Industry
- Experience managing a high-performance sales team
- An ability to understand and analyse sales performance metrics
- Solid customer service attitude with excellent negotiation skills
- Strong communication and team management skills
- Analytical skills with a problem-solving attitude
- Availability to travel as needed

Contact: [surinder@polarisequipment.in](mailto:surinder@polarisequipment.in); [hr@polarisequipment.in](mailto:hr@polarisequipment.in)  
Mobile: +91 9130088081



## Organic Egg Production Technology



Prof. D. Narahari  
Senior Vice-President (IB) & Speakers' bureau,  
World's Poultry Science Association,  
Former Vice-president, Indian Poultry Science Association,  
Former Professor & Head, Dept. of Poultry Science,

Tamil Nadu Veterinary & Animal Sci. University, Chennai-600007, INDIA

Egg is the most nutritious, yet relatively cheaper, unadulterated natural food, with highest biological value and digestibility coefficient. It is the golden standard, to measure the quality and nutritional value of any other foods. Due to constant increase in the consumers' knowledge and financial standards, they demand for better and value added products; unmindful of their costs. Designer eggs/ meat and organic eggs/ meat are few such value added products of poultry origin.

### Organic egg production:

Our Vedas say "Live in partnership with, rather than exploit nature". Organic egg production is a holistic approach involving a). Housing & management, b). Welfare and health cover, c). Feeding procedures and d). Certification by the licensing authorities. Requirements vary from country to country, but generally involves a set of production standards for organic egg production. Eggs produced under free range system, cage-free system, open yard system and country eggs are not necessarily organic eggs. They must be produced in certified organic farms only.

#### a) Housing & Management:

- The land used for organic farm must not use chemical fertilizers and pesticides for atleast three consecutive years.
- For organic egg production, the laying hens cannot be raised in cages, must be reared on deep litter houses only, with access to the open outdoors (Run) having pasture; usually double the size of the pen.
- Maximum flock size= varies with country, from 4,000 -6,000birds /shed and 16,000-30,000 hens in the farm.No such stipulation in India.
- Stocking density= 7 hens per m<sup>2</sup> covered shed area and same more area of open space per hen. The open area must be protected by proper wire fencing; with fish net top, to prevent wild birds' entry into the premises and to prevent hens going away from the run / farm.
- Provide one nest hole for each 8 hens, with in the covered shed, for easy collection.
- Provide a perch length of 10cm per hen at 60 cm height. This will also reduce congestion and overcrowding.
- Provide 45 cm X60 cm pop-holes for each 250 hens, for free access between pen and free range. The pop holes must be closed during night time, to prevent predators entering the house.



*Fig.-1: A modern organic layer farm, with pen having pop holes for access to open run /range, with good organic pasture*

- Since the egg production is low under organic egg production, use medium laying breeds like Rhode Island Red (RIR), New Hampshire, BV-380 or laying hens developed indigenously by ICAR, CARI, Agriculture / Veterinary universities, Central Poultry breeding farms, with brown shells may be used.
- House the replacement pullets, reared under conventional or organic system upto 17 weeks of age. If the pullet rearing is on conventional grower feed, the organic eggs must be collected only 6 weeks after organic feed feeding to the pullets.



**b). Welfare and health cover:**

- Organic certification also requires maintenance of basic animal welfare standards. The birds should be allowed to carry out their basic behavioral needs, with sufficient free movement, fresh air, fresh water, natural daylight, nest boxes, perches and enough lying and/or resting areas.
- Only natural molting can occur within the flock and forced molting is not allowed.
- The American Organic Standards still allow beak trimming as a means to lessen injury to the birds; but not allowed in Europe.



*Fig.2:-Inside view of an environmentally controlled deep litter house, for temperate climate for organic broiler production- the popholes and the open yard are on the right side*

- Vaccinations will be carried out upto 18 weeks, as in the case of conventional layers. Afterwards vaccination will be done only when diseases are noticed, expected to be a problem in the region of the farm or where these diseases cannot be controlled by other management techniques. Legally required vaccinations are allowed, but genetically engineered vaccines are prohibited.
- Deworming is allowed, if there is more worm burden. Preferably use safe herbal dewormers and parasiticides like bitter gourd, Kamala, neem oil, panchakavia etc.
- Stop labelling eggs as organic for 2-3 weeks after deworming with synthetic wormers or when hens are treated with antibiotics or drugs for any infectious disease, depending on the drug.

**c). Feeding procedures:**

- These hens must be fed with organic feed only, using certified organic feed ingredients like maize, soya etc. from organic farms directly. They must be free from genetically modified organisms (GMO) crops and synthetic fertilization for three years before it can be certified for organic usage. In case of scarcity of organic raw materials, conventional feed ingredients, free from pesticide residues, can be used upto 30 %.
- The open area must have good edible organic green pasture and insecticide or herbicide must not be sprayed on the lawn grass. If the birds have no access to the green pasture, provide organically grown freshly chopped Lucerne (alfalfa) or any other greens at the rate of about 50 g/hen /day, to impart rich orange colour to the yolk, naturally.
- Animal by-products like fish, MBM etc. are not allowed in the feed.
- Human sewage sludge fertilizer is not allowed for cultivation of plants, pasture or for feeding animals.
- Vitamins, organic minerals, amino acids, herbal preparations are permitted in the organic feed.
- Certified organic foods are not necessarily pesticide-free and certain pesticides are allowed in USA.
- For Organic egg production, the feed must be free from antibiotics (AGP), drugs and many more synthetic performance enhancers. However, antibiotics can be used only during any infectious disease outbreak. However, the eggs produced during this treatment period as well as for another 2-3 weeks, depending on the antibiotic, must be sold as regular eggs and not as organic.



*Fig.3:- Another modern design organic layer farm, with open yard on all 4 sides, called as circle house*



- Layer feed formulae suitable for organic egg production are given in Table-1 below. Give this feed, after conventional rearing upto 17 weeks of age.

**d). Certification by the licensing authorities:**

- Find out the local certifying agency like APEDA, BIS, etc. Approach them for more details, regarding certification procedures. In India, APEDA regulates the certification of organic products (But not for eggs?), as per National Standards for Organic Production (NPOP). At present there is no authorized "Organic eggs' certifying agency in India. Hence we can produce these eggs as per international standards and market them. For details contact Dr. G. Sreenivasan, senior marketing officer, ministry of food processing industries, New Delhi, Mob. 094442-01926, for licensing and export. Also contact Mr. Sandeep Bhargava, CEO, Onecert Asia PVT. Ltd., Plot no.8, Pratap Nagar colony, Tonk road, Jaipur-302017 ph.0141-2701882, www.onecertasia.in, info@onecertasia.in for certification.
- The NPOP standards for production and accreditation system have been recognized by European Commission and Switzerland as equivalent to their country standards. Similarly, USDA has recognized NPOP conformity assessment procedures of accreditation as equivalent to that of US.
- Bureau of Indian Standards (BIS formerly ISI) is also offering certification in some areas; where APEDA is not covered. With these recognitions, Indian organic products duly certified by the accredited certification bodies of India are accepted by the importing countries.
- Organic certification for local sales is somewhat lenient and relaxed; but for export purpose, all the requirements stipulated by the importing country must be strictly followed; otherwise the eggs are likely to be rejected by the importing country.
- Maintain proper records on vaccination, medication, disease out breaks if any, feed ingredient suppliers, egg production and sales records for inspection and audit purpose by the licensing authorities. Must be ready for undergoing periodic on-site inspections.
- Organic and conventional egg production, packaging and marketing shall not be combined together.
- The feed ingredient, feed and the eggs produced may be tested in approved laboratories, periodically in your area, for pesticide, antibiotic and drug residues. Some of the testing laboratories are
  1. Bangalore Test House- 080-23388895, 23502689
  2. Bharat Test House , 454/2, Bharat Test House Complex, Azadpur ,Delhi-1100033, Tel : +91 11 27672629,27675696,27675900, E-mail : bthinfo@bharatstesthouse.com
  3. Central Avian Research Institute (CARI), Izatnagar, Bareilly, UP-243122, Ph.0581-2301261 Department of Animal Nutrition, Guru Angad Dev Veterinary & Animal Sciences university, Ludhiana-141004, Punjab
  4. Central food laboratory, 3-Kyd street, Kolkatta-700016, www.fssai.gov.in
  5. Delhi Test House , A-62/3. G.T. Karnal Road, Industrial Area, Opp. Hans cinema, Azadpur, New Delhi -110033, Tel : 011-47075555, E-mail : info@delhitesthouse.com
  6. Department of Livestock Products Technology, Guru Angad Dev Veterinary & Animal Sciences university, Ludhiana-141004, Punjab
  7. Director, Central poultry breeding farm, Chandigarh,
  8. Indian Herbs Research & Supply Co.Ltd., Saharanpur, UP,
  9. SGS India Pvt. Ltd, ,267, Udyog Vihar, Phase-IV, Gurgaon,122015,Haryana,Tel : 0124-2399990
  10. TUV SUD South Asia, C-153/1, Okhla Ind. Estate, Phase-1, New Delhi-110020,Tel. : 011-3088 9611,E-mail: info@tuv-sud.in

**Layer feed formulae suitable for organic egg production are given in the table below. Give this feed, after conventional rearing upto 17 weeks of age.**

Feed ingredient / Supplement (all ingredients must be free from pesticide residues& genetically modified feed ingredients must not be used)	Pre-layer feed from 17 to 21 weeks of age	Layer feed from 22 to 50 weeks of age	Layer feed for above 50 weeks of age hens
Organically grown grains like maize, wheat, bajra, Jowar, Ragi, rice, paddy or all grain mixture, depending on the cost, free from pesticide residues	578 kg	550	540kg /ton

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Deoiled rice bran, ordinary rice / wheat bran or all combined together- preferably organic	110	92	109
Organic De-oiled soya bean meal	150	160	140
Organic degummed, roasted guar korma	40	40	40
Organic de-oiled rape seed meal	40	40	40
Calcite powder (LSP)	25	30	35
White marble chips	30	60	70
DCP (di-calcium phosphate-deflurinated rock phosphate-17% P)- not of animal origin	13	14	12
Salt	3.5	3.5	3.5kg /ton
Sodium bicarbonate	1.5kg	1.5	1.5kg
Premix ( as shown below)	10	10	10Kg
TOTAL=	1000 kg	1000	1000Kg
VANNAMIN- Organic trace minerals (By Guybro chemicals, Mumbai, 022-40546800)	500g	500	500G/Ton
Rovimix-DSM layer TN (vitamin premix)	500	500g	500g/ton
DL-Methionine	500g	600g	300g
Lysine	700g	500g	200g
1.Oreganol (plant extracts-GRAS) by Redox pharma, Haridwar, ph. 01334-239196)- give on alternate weeks	500g	500G	500g /ton
2. Naturaliv /Zigbir (Natural remedies), Livol (Indian herbs) or Liv-52 (Himalayan drugs)- A safe herbal liver tonic- give on alternate weeks	500g	500	500g/ton
3. Immugreen (Indian herbs) Safe herbal product- give on alternate weeks	250g	250	250g/ton
TT Zyme forte (TTK) or Maxigrain (Polchem), with phytase	500	500	500g/ton
Biocholine or Herbal choline (Indian herbs)- A herbal B-complex Vitamin	500g	500g	500g /ton
4. Probiotics= Saccharolact, Gutpro or Lactobac (give on alternate weeks)	500g	500	500g
Maize flour or wheat bran (filler material)- quantity sufficient (QS) to make the total- 10kg	q.s.++	q.s.++	q.s.++
Total premix	10	10	10kg

1 &2 =add in feeds Origanol (1) and any herbal Liver tonics (2) mentioned below for one week, followed by 3 & 4= Immugreen (3) and Probiotics (4) for next week. Repeat these alternatively.

@The feed formulae given below are for hens laying 300+ eggs annually

@ For hens laying 200- 250 eggs, the protein can be reduced by 1%, by replacing 1% each of soya, guar and rapeseed meal, with 3% extra bran.

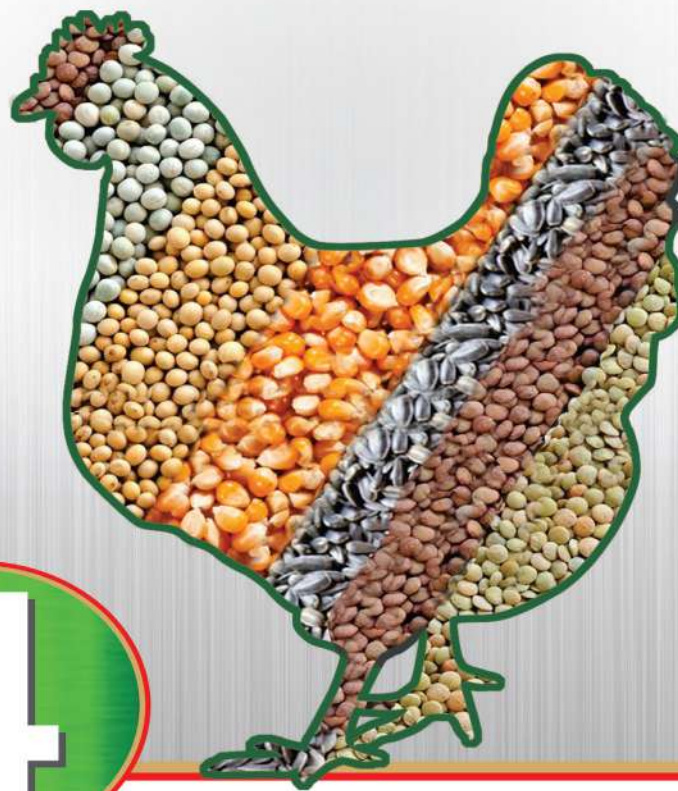
@ For hens laying less than 200 eggs /annum, the protein level may be further reduced by another 1% as done above and the vitamins, minerals, including calcium (LSP and marble chips) and phosphorus (DCP) supplements may be reduced by 30%.

@ in the place of all the feed supplement premix (10kg) in the formulae below, we can use only one supplement namely, "ORGANIX", replacing all others at 5,25 kg per ton of feed; which contains all vitamins, minerals etc.in the organic farm.

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## Management factors for breeding stock

Dr. Majdood Ahmad, Retd. Dy. Comm. Poultry, (Govt. of India)

To attain both genetic potential and consistent flock production, it is important that the producer or flock manager has a good management programmed in place.

The following factors are of major importance for the production of hatching eggs that produce high quality chicks:

- A. Genetic make-up of the parent stock
- B. The housing of the flock
- C. Flock health and applied vaccination program
- D. Feed and water
- E. Male to female ratio
- F. Age of the flock
- G. Flock performance

We shall go into details of the forgoing subjects:

### A. The genetic make-up of the parent stock

#### Genetics of hatchability - egg quality from the perspective of a chick:

The successful production of a chick is a complex process which requires the fulfilments of several conditions; The Breeder Farm has a major influence on results at the Hatchery and it is essential for the Hatchery and the Farm to work close to each other.

- 1) Controlling factors of the Farm includes- Breeder Nutrition, Disease control, Matting activity, egg damage, correct male and female ratio, body weight, age, and matting ratio, Egg sanitation and Egg storage.
- 2) Controlling factors of Hatchery includes-Sanitation, Egg Storage, Egg damage, Management of setters and Hatchers and Chick handling.
- 3) A hen must produce an egg – hatchability depends on genetic and environmental factors affecting laying ability of a dam.
- 4) The egg must be fertilized – hatchability depends on successful mating between the dam and her mate (in naturally mated flocks) or insemination. Formation of a viable embryo in this process is affected by genetic and environmental factors originating from both the hen and her mate.
- 5) The laid egg must be of good quality to provide a suitable environment for the developing embryo, which again seems to be primarily a function of dam's genotype and external environment during storage and incubation.
- 6) The chick must hatch – the ability of a matured chick to break out of the egg shell at hatching could be affected by the genotype of the embryo, the internal egg environment of egg and the environment to which the egg was exposed.
- 7) The genetic make-up of the parent stock is very important. The parent stock should be vigorous. Here again rearing plays an important part. Sexing errors need to be eliminated as chicks from false crossings do not possess the predicted characteristics. The rooster and hens you select have to be from good quality; even if you just have chickens for some eggs it's important that the parents are very fit. They have to look good; nice feathers, good tail, good cam and more.

This is mainly because:

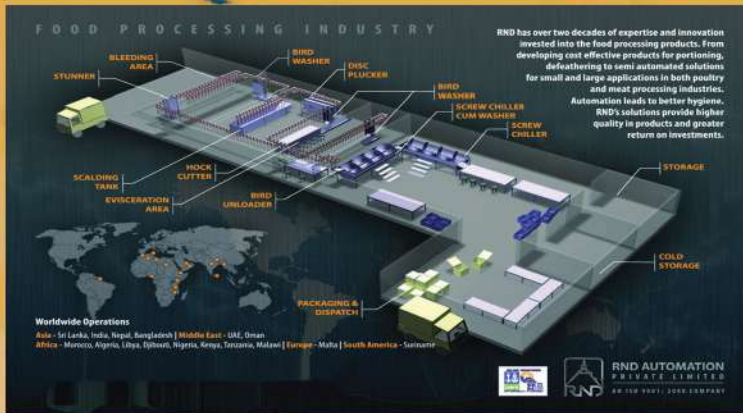


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- There is a big change that aberrances of the parent chickens will by inheritance go to the baby chickens
- If the parents are not fit this can result in issues like large amount of non fertile eggs, dead embryos, weak chickens and more.



**Select eggs from breeders that are fertilizing**

### **B. The housing of the flock**

The parent stock flock needs to be housed in well ventilated houses with correct indoor temperatures, litter in good condition (dry, not dusty, not crusty, without moulds), a well adjusted lighting program, sufficient feeder and watering space per bird. Concrete floors (asphalt) are essential for a good disinfection and the prevention of repeating worm infestations.

- Ventilation is the most efficient method to reduce the amount of micro organisms in the air, which may contaminate the hatching egg. A correct control of the fans-eliminates draught, maintains an ambient temperature and supplies sufficient fresh air in the house. At the onset of lay, the dept. of litter should not be too deep as this may result in many floor eggs. Instead of wood shavings coarse sand may be used.
- If drinkers stand or hang above the litter wet spots may be found, in which rotting bacteria and coccidia may develop giving rise to the explorers.
- Compatible with their mates and produce a high percentage of fertile eggs;
- Are not disturbed much during the mating season;
- Feed a complete breeder diet;
- Inbreeding between directly related individuals to be avoided. [Brother, sister, mother, father, etc.]

### **C. Flock health and applied vaccination program**

It is important that eggs from only a healthy flock are used for hatching, as some diseases can be transmitted through the egg. The importance using only hatching eggs from healthy disease free parent stock will be clear if one realizes that a number of poultry diseases are egg transmitted to the offspring. Use only p.p.i.o. and Salmonella pullorum free parent stock.

- The egg-transmittable diseases to be most aware of are salmonella infections, fowl typhoid and Mycoplasma gallisepticum. Eggs laid by birds infected with disease may fail to hatch. Of those that do hatch, some chicks may die during brooding, and the survivors may act as carriers and infect healthy chicks.
- Do not add eggs from unknown sources to make up numbers, as you risk infecting your flock.
- Use only hatching eggs from healthy and vigorous parent stock to whom all recommended vaccinations have been administered according to schedule and who have undergone the blood test for Salmonella

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*Bacillus subtilis*

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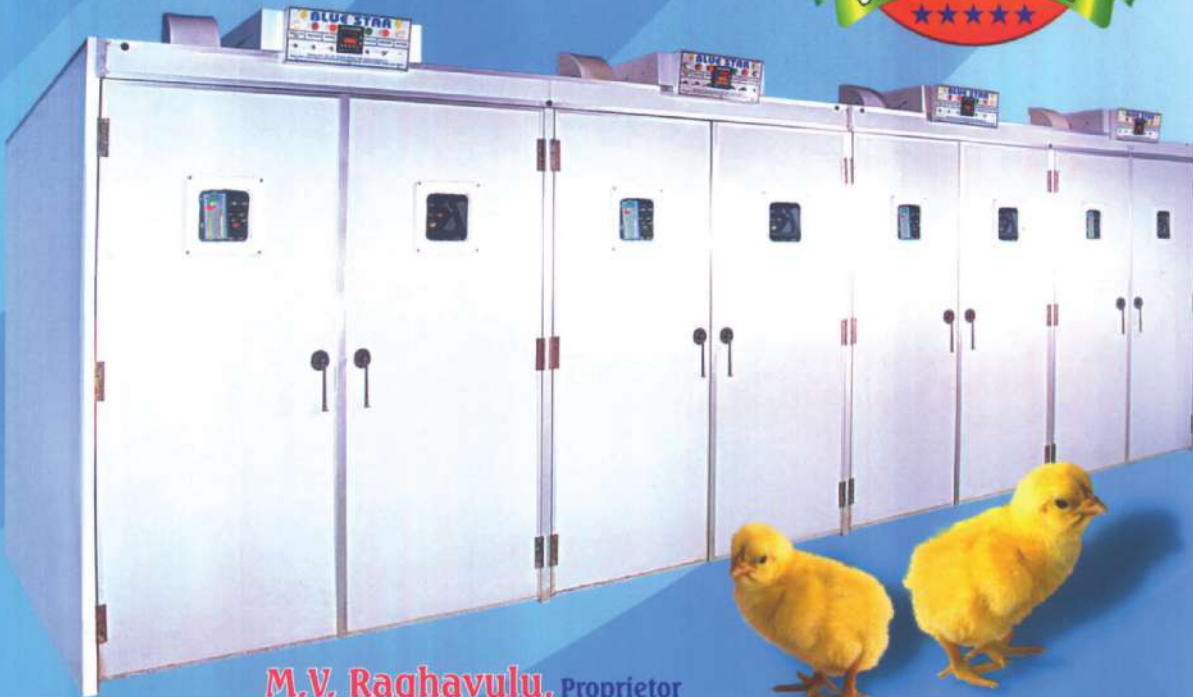


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Pullorum.

- iv) The vaccination against Epidemic Tremors (Avian Encephalomyelitis) should be given at least 4 weeks before collecting hatching eggs.
- v) Never vaccinate against Infectious Bronchitis (IB) during the laying period.
- vi) Parasitic infections such as coccidiosis, worms and the like have a bad effect on the hatch results.
- vii) It is well to remember that the temperature and the humidity of the incubator create perfect conditions for the development of micro-organisms which are the causative agents of many poultry diseases.
- viii) Also the incubator is an ideal place for multiplication and distribution of diseases which are on or inside the hatching eggs (brooder pneumonia, omphalitis)
- ix) Some coccidiostats and antibiotics may be harmful to the hatching results if administered during the laying period.

#### **D. Feed and water (Nutrition of breeding stock):**

##### **i) Feeding Broiler Breeders (Parent Stock):**

Producers of broiler parent stock (broiler breeders) have the sole aim of obtaining the maximum number good-quality, fertile eggs and hatched broiler chicks. Parent stock will clearly possess the fast growing traits required by broiler birds, but these parent birds gain weight too quickly and hens suffer reduced egg production. Clearly there is an obvious conflict of interests to ensure proper growth and development with maximum egg production. This problem is overcome by carefully planned feed restriction using the following guidelines:

- Producers must ensure broiler breeder birds attain their mature weight at 24 weeks of age
- Give crushed millet or maize once per day during the rearing period and increase to three times a day during the laying period. Throw cereal on to the litter. Birds scramble for the grains, exercise and burn off fat.
- Reduce feed by 5 g a day, for every 50 g a bird registers over the optimum weight
- If rearing males and females separately, provide males with 30g of extra feed per day. If reared together only increase the feed by 5 g a day for each male bird.

##### **ii) Feeding Layer Breeders (Parent Stock):**

- The feeds given to layer parents will be more or less similar to that of commercial layers in respect of major nutrients.
- But the breeder feeds, especially the breeder hen feed is enriched with all micronutrients like trace minerals and vitamins in order to obtain high rates of fertility and hatchability besides peak egg production.
- Moreover, the breeder feeds must be practically free from all mycotoxin, because mycotoxin will not only affect the egg production and health status of the birds but also fertility and hatchability.

##### **iii) Sex separate feeding**

- The breeder males must be fed with a low protein diet having 13-14% protein only because high protein diet will affect sperm quality as well as semen volume.
- Therefore, sex separate feeding of breeder hens and cocks will be followed.
- The females will be fed a 18% protein and 3.0 to 3.5% calcium feed while the cocks with 13-14% protein and 1-1.5% calcium feed with higher levels (40mg/kg) of vitamin E; on other aspects, both the feeds are comparable.
- The male and female feeds are offered in separate feed hoppers in slat and deep litter system. In cage system, sex separate feeding can be followed with 100% accuracy since they are reared in different cages.

##### **iv) Deficient nutrients and its Results:**

The egg provides a complete food store for proper embryo development except gaseous oxygen, which enters the egg through pores in the shell. Breeding stock must be fed a well-balanced diet to fully meet the

# Overcome the obstacles...



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- Maintains peak production





embryos' nutrient requirements. A hatching ration should be fed to breeders for about eight weeks prior to saving eggs for incubation. The extra vitamins and minerals that it contains, as opposed to a laying ration, are essential for good hatchability. Sometimes, poor hatching results occur when a lower priced laying ration is used. The nutritional requirements of the breeder hen must be adequate for optimum hatching and good chick quality. The deficient nutrients are usually vitamins or minerals. A deficiency of these in the breeders' diet may not show any ill effects in the breeders, though hatchability may be affected, which is why different categories are fed specific diets. Nutritional deficiencies, such as a lack of riboflavin, are the main causes of embryo mortality during the middle stage of incubation (i.e. between the 12th and 14th days). Hens' vitamin and mineral requirements for laying eggs are lower than those of breeders. The breeder's diet should begin six to eight weeks before hatching eggs are required, with particular attention to vitamin A, D3, riboflavin, pantothenic acid, biotin, folic acid, vitamin B12 and the mineral manganese.

**Table.1. Deficient nutrients and its Results:**

Deficient nutrient	Results
Riboflavin	Leads to poor hatchability with a high incidence of malformed embryos, which are excessively moist
	Leads to abnormal development of the embryo and a condition known enlarged hock/slipped Achilles tendon
B12	Leads to a rapid decrease in hatchability and a progressively poorer survival of chicks that do hatch

#### v) Water Management

Facts indicate that 60% - 70% of the bird and 70% of the egg are made up of water. Hence, water becomes an absolutely essential element for the overall development. As birds don't have inbuilt storage mechanisms, it becomes necessary to provide them water regularly. Water consumption in birds vary depending on weather conditions, feed consumption, mineral levels in feed and importantly the type of housing – floor or cage.

Since water plays a key role in the lifecycle and general well being of the bird, a good water management program is critical. Good quality water should always be sufficient and available in continuous supply. Effective water management ensures no microbiological or chemical contamination is found along with keeping the water cooler than environmental temperature.

**For worry free layer farming, recommends you to test water samples as described below:**

- Test for Microbiological contaminations at least once every month
- Test for Chemical contaminations at least once a year from every bore well
- Regularly disinfect water provided to the chicken
- Check if the water source is adequately disinfected or if sanitizer used is present in excess levels

Plan out a detailed action plan with experts after receiving the analysis / reports

#### vi) Effects of Nutrition on Infertility, Embryo Mortality and Hatchability

The effects of vitamin and mineral deficiencies on embryo mortality and malformations are well documented. General knowledge of breeder ration supplementation requirements is good and severe vitamin and mineral deficiencies are relatively unusual nowadays because vitamin and mineral premixes are generally reliable if sourced from suppliers who are ISO, HACCP and GMP accredited.

- a) Occasional problems arise and the main findings from nutritional research and field observations are noted below.
  - i) Infertility may be associated with a deficiency of vitamin A, vitamin E or selenium, particularly in the male rations.
  - ii) Early embryo deaths may be associated with a deficiency of vitamin A (failure to develop circulatory system), vitamin E (circulatory failure), biotin, niacin, pantothenic acid, copper, selenium or thiamin. Excess boron or molybdenum could increase the proportion of early deaths.



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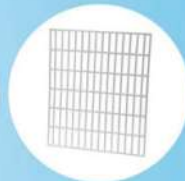
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- iii) Mid-term embryo deaths have been associated with a deficiency of vitamin B12, riboflavin, phosphorus and zinc.
- iv) Mid to late deaths have been associated with a deficiency of vitamin B12, niacin, pyridoxine, pantothenic acid and riboflavin
- v) Late embryo deaths have been associated with deficiencies of vitamin B12, vitamin D, vitamin E, vitamin K, pantothenic acid, riboflavin, folic acid, biotin, calcium, manganese, magnesium, phosphorus, zinc, iodine and thiamin.
- vi) Excess selenium could increase the proportion of late deaths. Achieving the optimal level of selenium supplementation can be difficult because there are variable levels of selenium in the soil (and thus plant feeding stuffs) depending on geographic region. In some cases, the use of organic selenium has resulted in improved fertility and hatchability.
- vii) Excess iodine and vitamin D can cause high embryo losses.
- viii) In case of prolonged vitamin B12 or niacin deficiencies, embryo mortality may change from early to late stage in incubation, and from late to early embryo deaths in case of prolonged riboflavin deficiency. Niacin can be formed from tryptophan, so a deficiency is usually the result of an antagonism with other dietary components. A deficiency of linoleic acid can affect embryos at all stages.

**The supplementation requirements for egg production and hatchability differ.**

- ix) Egg production can be affected by deficiencies of energy, essential amino acids, and vitamin A, pyridoxine (B6), B12, magnesium, manganese, sodium, iodine and zinc, whilst deficiencies of vitamin D, calcium, phosphorus or zinc may exert an effect on hatchability through effects on shell quality.
- x) An excess of crude protein may reduce fertility and a low energy to protein ratio in breeder rations can reduce hatchability.
- xi) Contamination of breeder diets with ionophore anticoccidials (from the feed mill) or certain mycotoxin (from raw materials) can also lead to a reduction in hatchability.
- xii) Some specific malformations in late embryos have been associated with deficiencies in:
  - Vitamin B12 (short beak, poor muscle development in legs, perosis, early chick mortality).
  - Vitamin D (stunting, soft bones, shortened upper beak).
  - Vitamin E (hemorrhage in chicks after hatch).
  - Vitamin K (high level of late dead, ectopic viscera and hemorrhage in the late dead).
  - Biotin (shortened twisted legs, feet and wings, crooked beak (parrot beak)).
  - Folic acid (bent legs, webbing between toes, parrot beak).
  - Niacin (face abnormalities, missing beak).
  - Pantothenic acid (subcutaneous hemorrhaging, abnormal feathering).
  - Riboflavin (dwarfing, curled toes, edema, clubbed down).
  - Iodine (incomplete closure of the navel, prolonged incubation period).
  - Iron (anemia, pale colored circulatory system).
  - Manganese (short leg bones, slipped tendons, parrot beak, deaths 18-21 days, globular head, short wings, protruding abdomen, edema).
  - Zinc (spinal, limb and head abnormalities, small eyes).
- xiii) Some specific malformations in late embryos have been associated with in:
  - \* Excess iodine and vitamin D can cause high embryo losses. Excess iodine and vitamin D can cause high embryo losses.
  - \* Loss of vitamin activity can occur if the vitamin pre-mix is stored inappropriately.

**Excess iodine and vitamin D can cause high embryo losses.**

- \* Excesses of boron (e.g. from insecticides used to treat litter) have resulted in face abnormalities and



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excess selenium can lead to late deaths, crooked toes, shortened wings and a short or missing beak.

- xiv) \*Heat treatment of feed during conditioning and pelleting can result in the degradation of some vitamins.
- xv) \*Vitamin recovery studies should be conducted at the feed mill in order to determine the level of degradation that occurs during heat treatment. This will enable supplementation levels to be adjusted to ensure that the final feed contains the desired vitamin levels.

#### **b) Recommendations:**

\*Developmental abnormalities tend to be immediately obvious and memorable and it is usually important not to overemphasize their relevance. It must be borne in mind that malformations of the embryo can be caused not only by nutrition but also by adverse incubation conditions (e.g. high temperature). Thus, if a trait is seen at high incidence (i.e. most or all of the late dead embryos) on two or three consecutive trays this could indicate positional effects arising from uneven incubation conditions in the setter.

\*The breeders should be fed according the rules for feeding as defined in the ISI management guides

\* At the onset of egg production, special attention should be paid to the vitamin and trace element contents of the ration as well as to a proper balance in calcium allowances. Thin shelled eggs lower the hatching result. During stress periods give extra vitamins. Periodic supplementation of vitamins may prove favorable for a flock. Unbalanced feed and diseases may cause enteritis, whereby the absorption of the nutritional compounds decreases, these results in poor hatching eggs, lower hatchability and weak day old chicks.

\* Drinkers and feeders need to be cleaned regularly to prevent the growth of moulds and the development of other micro-organisms. Pure – non ferrous – drinking water should be provided to obtain a good production and good hatching results. The water used when vaccinating birds should be clean. Clean the silos frequently to prevent them get moulds.

#### **E. Male to female ratio**

As production starts at least 8 males per 100 hens should be present. Ten males per 100 females represent the utmost limit. An excess as well as a shortage of males will cause fertility problems in the flock.

#### **F. Age of the flock**

It is wrong to expect good hatching results of first quality chicks from birds of 24 weeks or less. One should not collect hatching eggs from light breeds before 25 weeks of age. The poor hatching results at the onset of egg production is probably due to the relatively small yolks. Best hatching results are obtained from eggs collected from birds between the 8 and 13 months of age. If the male bird is active, not too large or overweight, and fertile, his age has little or no effect on hatchability or the vigor of the chicks. The older the cock bird, the fewer hens he can mate effectively without loss of fertility. Fertility and hatchability also decrease, as the hen's egg production drops with age, and is highest during her first and second laying season. A healthy breeder flock, females with a good rate of lay mated to vigorous males, will usually produce highly fertile eggs that hatch well under good incubation practices. Hatching eggs from new breeder flocks (just starting to lay) do not hatch as well as eggs from those that have been laying for three to four months. Hatchability of eggs from old breeders nearing the end of their laying period also declines.

#### **G. Flock performance**

Generally, there exists a positive correlation between production and hatchability. Any factor bringing about a drop in production may affect hatchability as well.

- a) Flock management to achieve uniform eggs from uniform hens:

Suitable Eggs for hatching are within the 50-70g range for which the whole flock should behave as a single unit; starting production at one time and following the same pattern to the end. Egg size depends on many factors; viz; genetic make-up, the age of the hen, its body size, feeding and watering, environmental conditions, and health status. Uniform eggs can be produced only by a uniform flock; uniform body size, maturing at the same age, free of diseases and physiological disorders.

- b) To achieve uniform skeleton size in the flock at 12 weeks of age;

- i) Ensure a good and even start for the chicks as soon as they are housed. Pay special attention to reception, housing conditions, hygiene and other help to maximize growth in the first week. All chicks should start well, even those that are weak.
  - ii) Start working on uniformity at the end of the first week. Select and protect smaller chicks, to give them the chance to catch up with the majority of the flock.
  - iii) Introduce feed restriction early, feeding ad-libitum only in the first seven days of life.
  - iv) Grade for the first time as early as possible, ideally at 4 weeks of age.
  - v) Aim to maintain average body weight close to standard at 6 and 12 weeks of age.
  - vi) Avoid the need to correct body weight. Regular increase in feed and accurate, frequent control is essential for linear growth.
- c) Hens that were uniform at 11-12 weeks of age and having a similar frame size, will tend to maintain uniform body weight unless disrupted by, for example, limited access to feed, too high stocking density, diseases or other management errors are involved.

**The recipe for uniform egg size is simple;**

- i) Take care of uniformity in our breeder flock. Pay special attention to rearing-especially in the early days. Make sure the hens are uniform both by skeleton size and weight,
- ii) Adjust programs that stimulate maturity to the average development of the flock,
- iii) Keep egg size under control. Do not over feed and apply water restriction in production period.

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## EMU Farming-A Successful subsidiary occupation

Dr. Manoj Sharma, KVK, Kapurthala  
 Dr. A P S Dhaliwal, KVK, Bathinda  
 Dr. G.S. Dhillon, KVK, Bathinda

About one year back extremely few farmers in Punjab were aware about the existence of the emu bird. But in the past year, the scenario has changed very rapidly. A lot of farmers in Punjab are now actively seeking more information about the emu birds and many of them have ventured into the profitable business of emu farming. The Emu Farming business was established in India during the mid 1980's, when a large stock of birds was imported from Texas. Emu birds are mainly reared for their meat, oil and leather. The Emu oil has been proven to have many medicinal qualities and is in a very high demand in the western countries. The emu meat contains very cholesterol. From emu feathers to emu eggshells, everything can be sold.

"Emu farming offers great scope and potential because of its supplementary income, additional employment and simplicity in operation" says the NABARD 'model bankable project on emu farming'. Moreover emu meat, emu leather and emu oil have established high quality product value in India.

Farmers in Punjab have now realized the huge profit potential this bird carries. The Emu bird being naturally immune to almost all diseases and being able to survive in almost any climatic condition, has led to the adoption of emu farming in all regions of Punjab.

International businesses are now headed towards India to take advantage of the untapped potential that emu farming holds in India and especially in Punjab, where it is a new concept.

### Diversification is the key to success in any enterprise

We need to diversify to other species of poultry in order to reap more profits. Considering this there is Emu breed of bird which attains up to 65 Kg.wt. & 5.6 ft. height on Maturity. Emu belong to Ratite family of birds and is the third biggest bird species after Ostrich & Cassowary. The birds have small wings & are in capable of Flying. Australia is the place of Origin for the birds.

Emu is a social bird with dark whitish complexion. The birds live in groups & Can thrive under varying climatic conditions ranging 0 degree C. to 52 degree C. These Birds are Omnivorous and eat leaves, vegetables, fruits, insects, worms. They can be feed Modified poultry feed.

Emu is an exotic bird and it has not been included in any of the schedules of wildlife (protection) Act, 1972. The provisions of Wild Life Protection Act, 1972 and rules made there under are not applicable for these birds. As such no permission from forest Department is necessary for rearing, farming and selling of these birds.

In India, chicken is the most popular of the poultry species Followed by ducks & quails. Of late, with some popularization through Newspaper write ups, television coverage & Exhibitions, many Progressive farmers of Punjab state have started Emu farming with 25 to 200 pairs. To promote innovative project activity in the state this can accelerate capital Formation in the rural area. NABARD has taken a decision to formulate a Model project for rearing of Emu as there is a increasing demand for such unit in coming Years.

### Present Status:

Recognizing the economic importance, Australian Government in 1975 started domesticating these birds living in jungles by establishing big farms. This activity spread to America, France and other European countries in the early eighties. The activity has also spread to China, Japan, Malaysia and Korea. One Emu farm by name Vijaya Ratite Farm (Pvt.) Ltd. was established in Andhra Pradesh in 1996 on small scale.

### Technical parameters of EMU Bird:

The birds reach their full size by the end of 1st year. They grow up to 5.5 to 6 feet with a weight of 40 to 70 kg. Laying period in India starts after 18 to 24 months and Eggs are laid during September to February. Eggs are dark bluish green in colour with a weight of 450 to 700 gm. A bird can lay 20-60 eggs in a season. Incubation period is 50- 52 days and newly hatched bird will be of 6-7" in height. The lift span of the bird is 30-35 years. The productive economic life of the bird is 20.25 years.

### Economic Importance

It is reported that the price of Rs. 18, 000/- a pair of 3 months old birds and the price of Rs. 40, 000/- a pair of 15 months old birds having live body weight each 40 to 50 kg. and the birds are used for table purpose.

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Meat of Emu bird is reddish in colour, soft and with less of cholesterol 98% fat free. Emu meat is lower in fat than Chicken, Turkey, Pork & Beef. It is the "Super Food of the New Millennium". The price commands higher than that of meat from other birds/animal and is reported at Rs. 300-450 per Kg. The American Heart Association has included Emu meat in its listing of heart healthy meats.

	Emu	Chicken	Lean Pork	Lamb
Fats (g)	2.4	3.5	25.0	23.4gr
Protein (%)	20.9	20.1	20.2	16.6
Energy (ki)	446.5	125.0	147.0	----
Calories	106.2	125.0	147	282.0
Iron(mg)	3.0	1.0	1.0	1.55
Cholesterol (mg)	51.7	80.0	65.0	73

	EMU	CATFISH	CHICKEN
Protein	23.3G	18.2G	23.1G
Calories	109	113	110
Cholestrol	57.5MG	58MG	64MG
Fat	1.7G	4.3G	1.2G
Saturated fat	0.06G	1.0G	0.3G
Mono-unsaturated fat	0.7G	1.6G	0.3G
Ploy-unsaturated fat	0.4G	1.0G	0.3G

#### Feathers:

Feathers are soft non allergic / anti static, beautiful double quelled and are used in hats, dresses, computer and car cleaning brushes and household decorative items. About 400 to 600 gms of feathers would be available from a bird and each bird would fetch about Rs. 200/- at present.

#### Skin:

The skin is very thin, soft and strong. Price of good quality skin is reported Rs.700/- to Rs.1000/- per sq ft. and 8-12 sq ft. of skin is available from a well matured bird. The skin is used in the preparations of shoes, bags, belts, purses, jerkins and seat covers for expensive cars. At present raw skin of a matured bird would fetch about Rs. 1000 1200/-.

#### Egg Shells and nails:

The egg shells are used for painting and as decorative items due to deep blue colour. Nails are strong and decor able used in artificial ornaments and craft goods.

#### Oil:

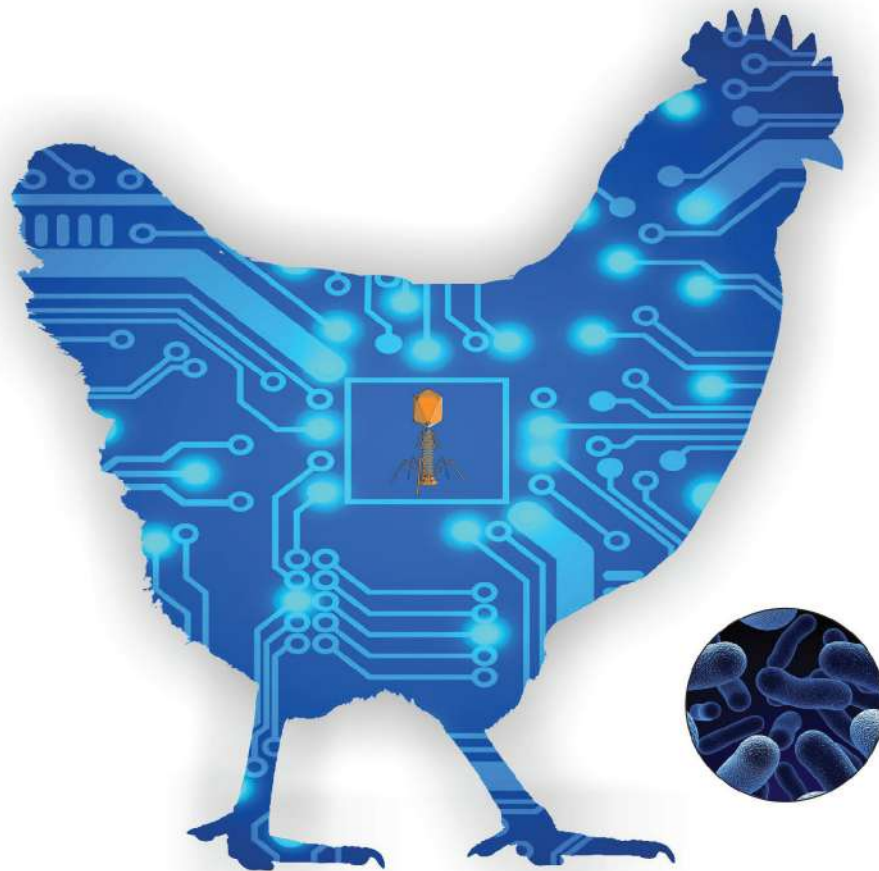
About 4-6 a litter of oil is available from a bird which is devoid of any colour taste and odor. At present market prices, the price of one litter refined Emu oil is Rs. 3000/- to Rs. 4000/- The oil is penetrating and is having moisturizing, analgesic, anti allergic and antiseptic properties. The oil is used in analgesic ointments, beauty creams and lotions, soaps, hair oils, shampoos, perfumes and massage oils. The raw fat/crude oil of Emu fetches Rs.1000 per Kg.

Clinical experience with Emu oil has shown that its two major benefits are its anti-inflammatory properties and its ability to penetrate the skin. It also appears to provide some solar protection. The penetrating effect appears to be related to its non-phosphorous composition. "Our skin is phosphor-lipid deficient. In other words, there is no phosphorous in our skin. If you put anything on your skin that has phosphorous in it, your skin is 'programmed' to keep it from penetrating. Anytime you put anything on your skin that is phospholipids deficient, or has no phosphorous, it penetrates right through ". Emu oil has been documented to exhibit the following properties and/or has been used for the following purposes:

- Anti - Inflammatory Activity
- Moisturizing
- Cholesterol Reducer
- Bacteriostatic
- Penetration Enhancer
- Significant epidermal proliferative activity

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## ARTICLE

- Non – comedogenic
- Significant wound healing agent
- Appears to promote faster healing of burns with less pain and scarring
- Anti - Arthritic Activity
- Excellent Emulsifier

### Eyes:

The bird is able to see up to a distance of 10 meters and its eyes are being used to replace damages corneas in human beings.

Utility: Fifteen months old Emu broiler weighing 40 kg. slaughtered for oil, meat and skin etc. The utility is as under:-

Utility	Present market price of produce per unit
43% boneless meat	Rs. 300/- to Rs. 450/ Kg.
14% bone meat	Rs. 200/ kg.
5% feather & skin	Rs. 200 + Rs. 1000
22% fat	Rs. 1000 / kg (raw oil)
3% leg skin	Rs. 500/-
4% neck	Usable but not saleable at present.
3% blood	Usable but not saleable at present.
4% waste	Usable but not saleable at present.
About 96% useable bird Refined oil	Rs. 3000/- to Rs. 4000/- per litter

### Financial Assistance:

Loan from banks with refinance facility from NABARD is available for establishing Emu farm. For obtaining bank loan, the farmer should apply to the nearest branch of a Commercial or Co- operative or Regional Rural Banks in their area in the prescribed forms which is available in the branches of financing banks. The project report should be attached/ enclosed with loan form. For Emu farming schemes with very large outlays, detailed reports will have to be prepared. The technical officers attached to or the Branch Manager of the bank can help / give guidance to the farmers in preparing the project report to obtain bank loan. A scheme can also be prepared by the beneficiary after consulting local technical experts or private commercial Emu hatcheries. Consultancy Services of NABARD would also be available for large commercial projects.

### Beneficiary:

A good practical training for a week and experience on a Emu farm will be highly desirable before starting a farm. If possible, they should visit the progressive Emu farms/ Hatcheries in the area and discuss the technical ability and profitability of farming.

### Backward linkages

#### Climate:

Emu is a social bird and can thrive under varying climatic conditions ranging 0° F. to 100° F. The climate suitable for poultry farms is also suitable for Emu farming.

#### Availability of Feed:

Poultry feed (layer) can also be fed to Emu. In addition to poultry feed mineral mixture and shell/ stone grit can be given. Sprouted Gram and Fenugreek can also be fed during layer season. During summer season chopped vegetables like cabbage, carrot, beetroot, etc. can also be fed.

#### Availability of Veterinary Aid:

Like poultry, chlorinated water should be given to Emu birds. Deforming should be done twice in a year at an interval 6 months.

#### Training and Experience:

Training on Emu farming is given by KVK as well as SAU/SVAU for 3-5 days. During training these farms supply all technical information.

#### Availability of Equipment:

Water, feeders & egg trays are required. Low cost equipment locally available can also be used.

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## **Lending Terms – General:**

Project Cost: One model of 50 pairs Emu have been formulated. The total project cost including fixed cost and recurring cost up to the income generating stage (21 months) has been worked out to Rs. 24.78 lakh.

## **Margin Money and Bank Loan:**

Minimum 15 % of down payment has been considered to be collected from the beneficiaries and maximum 85 % of total financial outlay is considered as bank loan.

TFO: Rs. 24.78 lakh, Margin Money: 15 %, Bank Loan: 85 %

Working Capital: If required by the farmer, financing bank may assess the same and sanction accordingly. It may require for commercial ventures only. Here in this case we have already capitalized 21 months recurring expenses and so there may not be a need for further W.C.

## **Interest Rate:**

The rate of interest shall be decided / fixed by the concerned financing bank to the ultimate beneficiary. In this case for calculation of cash flow and repayment we have assumed an interest rate @ 12% per annum.

## **Security:**

- a) Will be as per RBI guidelines issued from time to time.
- b) Insurance: Bank may ensure that the borrower takes insurance of assets created out of a bank loan including insurance of Emu birds.

## **Repayment of Loan:**

The repayment period depend upon the gross surplus generated in the project. The loan will be repaid within 7 years including first year as grace / moratorium/gestation period in suitable monthly installments (6/year) during October to march only.

## **Conclusion:**

Emu farming offers great scope & potential because of its supplementary income additional employment & simplicity in operation. Efficient Emu development can be achieved by promotion of small units in villages through a gamut of functions like dissemination of information & technology, making various inputs & organizing training Sessions for farmers on this subject.

## **Bio-security measures to be taken in Emu Farming / breeding:**

- a) The farm should be ideally placed and away from the population and is bio-secured.
- b) The housing should be proper will adequate brooding facilities.
- c) There should be a separate workers team, who should not be allowed to get mixed with other workers.
- d) There should be separate dress code for the workers.
- e) Proper disinfection procedures / foot dips etc. should be maintained.
- f) The quarantine sheds should be separate and away from other sheds.
- g) The other birds (parent, commercial or pure line etc.) and pets should not be reared/allowed to enter the same farm.
- h) The brooding space should be optimum.
- i) There should be provision of showers, change over and dips.
- j) Proper records should maintain.
- k) There should be scientific facility for disposing off / destroying the bedding / dead Birds etc.
- l) The equipment are proper, properly disinfected and separate
- m) The farm should have a water sanitation system.
- n) Water source should be tested for mineral, bacterial, chemical, contamination and pathogen load.
- o) Proper storage of feed to prevent contamination should be made. The water quality should be checked periodically and if contamination is seen it should be treated with any sanitizer.
- p) Routine disease monitoring procedures like postmortem examination of dead birds and periodic sera antibody assay is recommended.

Although this is new venture for our farmer's but has great potential in the coming years. So take this opportunity and success in life by adopting this subsidiary occupations in agriculture.



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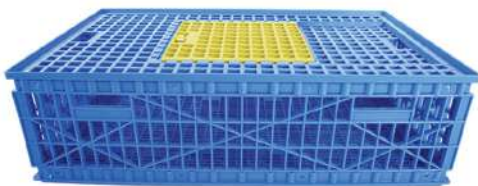
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## A Brief Overview on Major Poultry Diseases in Rainy Season

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<sup>2</sup>Department of Veterinary Surgery and Radiology, CVSc. & A.H., OUAT, Bhubaneswar - 751 003

<sup>3</sup>Scientist (Animal Science), KVK, Jharsuguda, OUAT, Bhubaneswar - 751 003

**Introduction:** Poultry birds and poultry production are generally affected by seasonal climatic or weather changes. In most cases, when the cold conditions are extreme, the birds become stressed and this affects their production and ability to withstand diseases through immunosuppression leading to reduction in egg production. Further, the cold and wet seasons trigger various pathogenic and parasitic diseases causing heavy losses. The age of birds also plays a role as different age groups have unique requirements and abilities to survive the weather changes. Birds under two months of age and those over six months of age are more susceptible to infectious diseases. Common disease symptoms during this season include respiratory distress, nervousness, diarrhoea, loss of appetite, ruffled feathers, swollen face and prostration. These observable symptoms may be associated with several diseases making it difficult to carry out a differential diagnosis from other related diseases.

### Major poultry diseases encountered in rainy season

**a. Fowl Pox:** Caused by pox virus, Fowl Pox is really contagious and can cause death in chicken. Mosquitoes and other blood-sucking insects are the main agent for this disease in rainy season. The clinical signs of this disease include lesions on the wattle, face, comb, and sometimes on the legs. In the worst cases, pox virus can trigger lesions in the throat that can make the chicken suffocate.

**b. Fowl Cholera:** Fowl Pox is caused by bacteria called *Pasteurella multocida*. The clinical signs include diarrhoea, appetite loss, anorexia, inflammation and color-changing in combs and wattles, drop in egg production.

**c. Infectious Bursal Disease (Gumboro disease):** This is one kind of viral infections among immature birds, which are as old as 3 to 18 weeks. Usually, this disease targets the bursal component of the immune system of the chicken that can cause immune-suppression and susceptibility to secondary infections. The clinical signs include severe prostration, in-coordination, watery diarrhoea, soiled vent feathers, vent picking and inflammation of the cloaca.

**d. Escherichia coli, Salmonella, Aspergillus infections:** The Gumboro disease makes the bird susceptible to the infections caused by other bacteria like *Escherichia coli* and *Salmonella*. The common symptoms from these infections are breathing difficulties, appetite loss, depression, umbilical stump infection and low growth rates.

There are also threats from fungus, like *Aspergillus* spp. as the foods and litter can get damp during rainy season. This fungus infection can trigger lesions that look like green and yellow nodules which fill the lungs, causing respiratory discomfort.

**e. Coccidiosis:** Coccidiosis is caused by protozoan *Eimeria* spp. in poultry. Coccidia are distributed worldwide in poultry, game birds reared in captivity, and wild birds. The infectious process is rapid (4–7 days) and is characterized by parasite replication in host cells with extensive damage to the intestinal mucosa. Poultry coccidia are generally host-specific. In game birds, including quail, the coccidia they parasitize the entire intestinal tract. The wet litter and the hot pen temperature commonly observed in the rainy season favours the sporulation of the coccidian oocyst and therefore, the outbreak of coccidiosis.

### Management of flock during cold period

- During the cold period, birds increase their level of feed intake to generate heat and stay warm. To reduce costs and avoid wastage, energy rich sources like oil/fat should be added to the diet or level of other nutrients may be reduced keeping the energy at same level.

- In free-range system, provide supplementary feeding to the birds to meet their nutrient deficit. Consider providing your birds with warm water periodically during this rainy season to encourage consumption and help them keep warm without using up energy reserved in the process.

- With the rain, birds may encounter standing water and end-up drinking from the ground leading to parasitic infestation from intestinal worms. De-wormers administered after every three months help in management of worms.

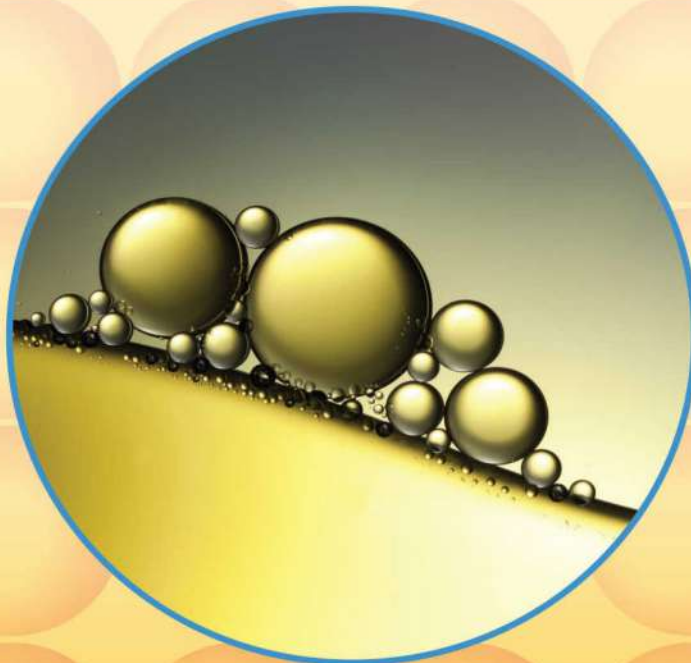
- Poultry house should be designed in such a way that it provides all the comfort required by birds during cold season with proper ventilation. In regions where it rains heavily, the floor should be raised with a generous roof overhang, particularly over the entrance. The raised floor can be a solid platform of earth to prevent floods. Orientation of a building with respect to wind and sun consequently influence temperature, and light on different external surfaces.

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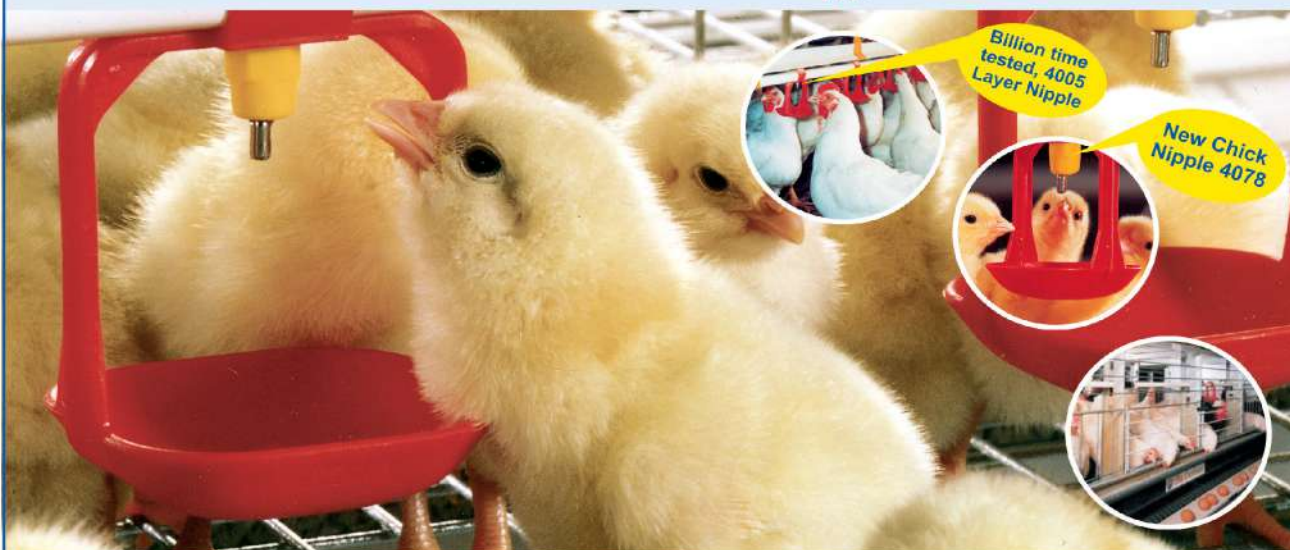
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## E. coli infections in poultry and their successful management with Bacteriophages

Dr. Ajay Chalikwar, Zonal Technical Manager,  
Provet Pharma Pvt. Ltd.

### Introduction:

Poultry faces tremendous pressure in terms of weight gain, efficient feed conversion, stress, disease challenge and resistance to anti-microbials. Major challenges are bacterial, viral, metabolic, mycotoxins, etc.

E. coli has emerged as a major infection in broilers, layers and breeders and is commonly encountered in almost all the poultry operations including hatcheries, meat processing plants, etc. irrespective of a good water sanitation programme.

Focus now is on E. coli infections in poultry and their effective control through the use of non-conventional therapies like Bacteriophages.

### Brief about E. coli

E. coli is a Gram-negative, facultatively anaerobic, rod-shaped, non-spore forming, coliform bacterium belonging to Enterobacteriaceae. E. coli strains pathogenic to poultry are mostly extraintestinal and grouped under APEC (Avian Pathogenic E. Coli).

Diseases caused by E. coli are mostly systemic in poultry unlike mammals, where it causes gut related diseases. Most APEC strains are motile having peritrichous flagella, survive freezing and persist for extended periods at cold temperatures.

Reproduction of most strains is inhibited by a pH of less than 4.5 or greater than 9, but the organism is not killed. It is commonly seen as a secondary infection to other bacterial / viral infections and rarely as a primary infectious agent, but recent trends show that they have the ability to cause disease on their own.

It is a typically localized or systemic infection when host defences have been impaired. E. coli is the most frequent cause of mortality and can be isolated even from dead birds.

Normally poultry house dust contains 10<sup>5</sup> to 10<sup>6</sup> CFU/g of E. coli inside the houses and outside up to 40 feet area under dry conditions, but wetting reduces the count by 84-97%.

E. coli causes various infections in poultry like Omphalitis, Salpingitis, Egg Yolk Peritonitis, Colisepticemia, Colibacillosis, Cystic degeneration of ovarian follicles, Cellulitis, Coligranuloma, Arthritis, Sternal bursitis, etc.

### Economic impact of APEC is mainly due to:

- Mortality
- Morbidity
- Slower growth rates
- Poor FCR
- Decrease in egg production
- Downgrading of carcass
- Spread of antimicrobial resistance to other bacteria

### Antigenic structures and toxins of E. coli



Dr. Ajay Chalikwar  
Zonal Technical Manager,  
Provet Pharma Pvt. Ltd.

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The unique combination of above mentioned essential oils and herbs in **ANIMUNIN** work in synergy to cleanse the respiratory tract from bacteria, mycoplasma, fungi and viruses and overcome their damaging effects.

## Usage

- To keep the respiratory tract clean and optimally functional, free from mucus build up and least prone to respiratory problems.
- To Improve F.C.R. alongwith optimum egg production in layers and optimum growth in broilers.
- To maintain normal respiratory health, fertility & hatchability in breeders.
- To maintain respiratory functions and optimum production performance when farm cannot be kept completely free from microbes, allergens etc. and in challenging conditions for e.g. change in weather, cold environment and during susceptible conditions.

## ANIMUNIN is the product of choice because

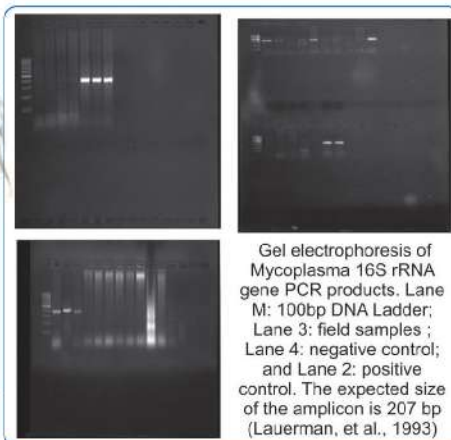
- **ANIMUNIN** contains a unique combination of essential oils which have been standardised for the presence of required active constituents.
- **ANIMUNIN** helps to prevent the colonization of bacteria, mycoplasma, fungi and viruses in the respiratory tract.
- **ANIMUNIN** with powerful respiratory antiseptic and disinfectant properties keeps the respiratory system clean and optimally functional ,on a regular basis, to facilitate optimum growth and production performance.
- **ANIMUNIN** does not require any withdrawl period and completely eliminates the possibility of antibiotic residue in meat & eggs.

## Scientifically tested for its efficacy in MG/MS positive flock

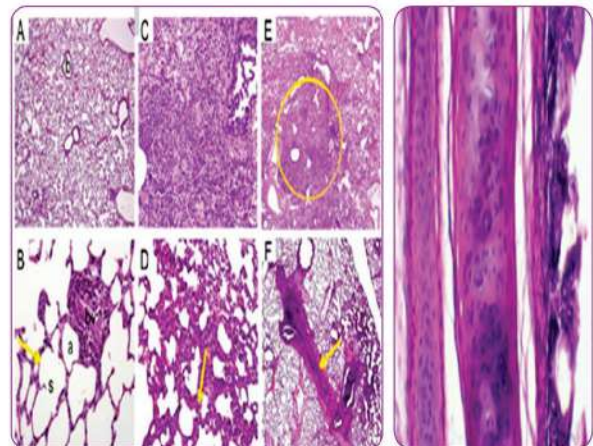
Efficacy Evaluation of Animunin® versus Tiamutin in treatment of chronic respiratory disease in the Krisbro chicks .  
The experimental study is conducted on day old broiler chicks of krishibro (PDP) obtained from ICAR DPR.



The ELISA done at different time intervals to detect the status of MG/MS in control and treated birds by Polymerase Chain reaction (PCR) of Mycoplasma



Histo morphology of brochioles in different treatment groups and trachea in Herbiotic FS treated group



## Feed Inclusion Rate

**ANIMUNIN Powder** : 750g - 1 kg per ton of feed.

**ANIMUNIN Liquid** : To be given once daily with drinking water.

Broilers	Layers	Quantity (For 100 Birds)
0-2 Weeks	0-8 Weeks	10 ml
3-4 Weeks	9-20 Weeks	20 ml
5th Week & onwards	21-72 Weeks	40 ml

- ▶ To be given regularly in broilers, layer-chicks and growers.
- ▶ In layers to be given regularly or 15 days every month, as required.
- ▶ Double quantity is recommended for breeders & during challenging conditions (for first 10 days).

## Presentation

**Powder** : 10 kg & 25 kg  
**Liquid** : 1 Ltr & 5 Ltr



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Antigens are classified according to Kauffmann scheme. It contains 3 major antigens like O (somatic), H (flagellar) and K (capsular). Currently there are approximately 180-O, 60-H and 80-K antigens. The O antigen determines the serogroup & addition of the H antigen and sometimes K antigen determines serotype.

A PEC doesn't produce enterotoxins unlike mammalian species. Immune response in poultry is directed against O antigen. Common serotypes found are O, O2, O18, O35, O36, O78 and O111.

#### **Virulence factors involved**

Adhesins - Fimbrial or non-fimbrial F1 fimbriae may be expressed during initial colonization whereas P fimbriae are expressed later when the organism is in the lower respiratory tract or body tissues. Bacteria are killed rapidly following expression of F1 fimbriae by macrophages.

Iron acquisition methods - Ability of APEC to obtain iron is well documented.

Protectins - Resistance of APEC to complement is related to K1 capsule, smooth LPS layer, and Outer membrane protein. Increased serum survival gene (ISS) in APEC has its role in complement resistance with a ColV plasmid which increases virulence in day old chicks by 100 times.

#### **Factors that increase host susceptibility to E. coli infection**

##### **Virus**

Adenovirus, Avian Influenza, New Castle Disease, Infectious Bronchitis, Avian Metapneumovirus, Infectious Bursal Disease, Marek's Disease and Chicken Infectious Anaemia.

##### **Bacteria**

Mycoplasma gallisepticum, Pasteurella multocida, Staphylococcus sp., Streptococcus sp..

##### **Others**

Invasion of skin barrier, excess ammonia in sheds, mycotoxins like ochratoxin and fumonisin, young age group, stress of various origin, sex (males are more prone), contaminated water and feed, dry dusty condition, feed / water restriction, parasitic infection, intestinal and caecal coccidiosis, inadequate ventilation, dysbacteriosis, relatively high ammonia overcrowding, poor litter condition, temperature extremes and high temperature and high humidity.

##### **Nutritional**

Hypervitaminosis E, Hypervitaminosis A & Vit A deficiency, excess Iron & Selenium.

Adult house flies act as mechanical vectors and harbour organisms in their body and cause horizontal transfer of antibiotic resistance and virulence genes. Low incubation period -5-7days.

#### **Resistance of APEC to heavy metals, disinfectants & antibiotics**

APEC has the ability to acquire resistance to Chlorhexidine, Formaldehyde, Hydrogen Peroxide, and Quaternary Ammonium Compounds (QACs) through acquiring resistance often encoded by large R plasmids. APEC Inc H12 & PAPEC-01-R plasmids confer resistance to silver, copper sulphate, Benzalkonium chloride following transfer to recipient strain by conjugation. APEC Inc F IIA plasmid confers resistance to Aminoglycosides, QACs, Phenolics,  $\beta$  lactams & Silver.

APEC Inc A/C plasmid confers resistance to phenolics, QACs, aminoglycosides, sulpha drugs, tetracyclines and mercury.

It has inherent ability to form biofilms on abiotic surfaces like plastic/metal waterlines and protect itself from getting killed by the sanitizers.

Certain plasmids may also contribute to APEC's acid and bile tolerance, affecting survival of APEC in the bird or elsewhere. Regional variations exist as far as resistance is concerned, as some strains are still susceptible.



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**E. coli control through the use of Bacteriophages**

Bacteriophage is a non-pathogenic virus with a vast majority (about 96%) of known phages belonging to Myoviridae, Podoviridae and Siphoviridae. They are known as bacterial parasites because they lack the cell structure and enzyme systems necessary for food uptake, protein synthesis or construction of new particles, and as incomplete organisms can only replicate in a live cell.

Positive results of the use of bacteriophages in fighting bacterial infections have contributed to the research on the potential use of viruses that destroy bacteria in treatment of diseases in both human and animals. Their specificity and range of activity are determined by the presence of receptors located on the surface of bacterial cells, among which we can distinguish LPS fragments, fimbriae and other surface proteins.

No mortality was observed in chickens treated with 10<sup>8</sup> PFU of an E. coli bacteriophage mixture. Due to the specificity of

bacteriophages for a particular bacteria, manifested as the ability to infect only one species, serotype or strain, this mechanism of action does not cause destruction of the commensal intestinal microflora. A cocktail of more than one phage (at least 3 - 4) in sufficient concentration is synergistic.

**Bacteriophage has 2 life cycles**

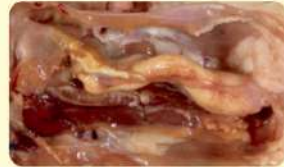
**Lytic**

Phage acts like a typical virus, it hijacks its host cell and uses cell's resources to make lots of new phages

**Conditions in APEC infection**



Salpingitis in laying hens.

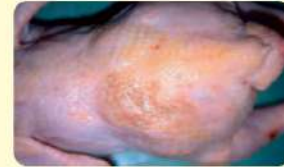
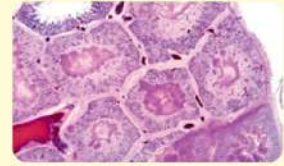


Cellulitis in broilers at slaughter



Egg Yolk Peritonitis

Microscopic appearance of E. coli in pleuro-pneumonia



Swollen head syndrome



Cystic degeneration of ovarian follicles



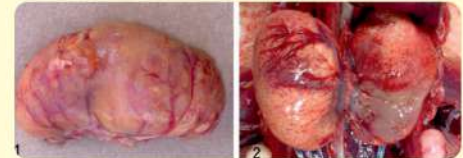
Colibacillosis in chicks & adults



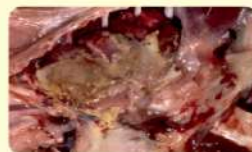
Orchitis in males



Yolk sac infection in chicks



Omphalitis in 3 day old chicks



Pleuro-pneumonia & Aircacculitis in broilers



Images courtesy: The Poultrysite



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thereby causing lysis of the cell and death subsequently. Phages attach, enter the cell, copy DNA and synthesize protein, assemble new phages and cause lysis of the host cell with release of daughter phages capable of infecting other cells.

### Lysogenic

Phage reproduces without killing its host. Some phages use the lytic life cycle and some switch between the 2 cycles. Here, there will be attachment of phage to host cell, injection of DNA into host cell, integration with bacterial chromosome and becoming prophage and finally cell division along with host cell.

### Life cycle of Bacteriophage

Under the right conditions, the prophage becomes active and comes back out of bacterial chromosome, triggering lytic life cycle and killing the host cell.

### Advantages of phage cocktail

Lead phage has very virulent activity and neutralizes a bacterial population within few hours of inoculation against a wide spectrum of *E. coli*.

Associate phage has lower virulence than lead phage but has very wide spectrum of activity and is very stable. This phage covers the bacterial population which evades the action of lead phage.

Guard phage is similar to associate phage in spectrum but can attach to a different kind of receptor with different mode of action and is mainly added to ensure protection against resistant *E. coli*. Synergistic action of these 3 phages will ensure complete bactericidal action.

### CONCLUSION

Bacteriophage therapy is a very good solution as preventive measure in chicks in the first week and as a therapeutic thereafter as per the infection pressure.

Some authors suggest effects similar to antibiotics in preventing colibacillosis in chicks.

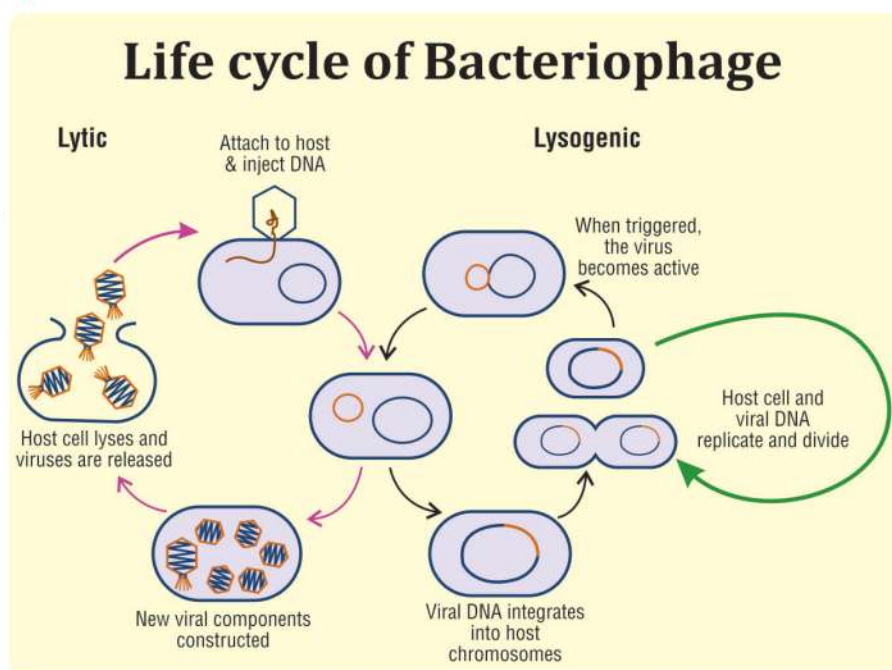
There is evidence that bacteriophages have the ability to penetrate the blood-brain barrier and confirm that bacteriophages have a prophylactic effect in addition to therapeutic effect.

Bacteriophages can be given orally, by aerosol spray or parenterally or along with antibiotics in case of severe *E. coli* challenge and can be given along with all live and inactivated vaccines (except live *E. coli* vaccine).

Bacteriophages enter blood circulation upon oral administration and control *E. coli* systemically.

Under the right conditions, the prophage becomes active and comes back out of bacterial chromosome, triggering lytic life cycle and killing the host cell.

(References available on request)



## MONTHLY EGG RATES JULY - AUGUST 2019

Day	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Ahmedabad	362	364	364	366	368	370	372	374	374	374	374	374	374	374	374	374	374	374	374	374	347	378
Ajmer	290	292	300	310	310	315	315	305	295	290	290	291	300	302	311	320	320	320	321	322	324	325
Banglore (CC)	340	345	340	345	345	350	355	355	360	360	360	360	360	360	360	340	340	340	340	340	345	345
Chennai (CC)	355	360	360	365	365	365	375	375	375	375	375	375	375	375	375	355	355	355	355	355	355	355
Chittoor	348	353	353	358	358	358	368	368	368	368	368	368	368	368	368	348	348	348	348	348	348	348
Delhi (CC)	320	320	320	330	340	345	345	335	320	320	310	310	310	320	330	350	350	350	350	350	350	340
E.Godavari	305	305	305	305	320	330	330	330	325	315	315	315	315	315	325	330	330	330	335	338	338	340
Hyderabad	310	310	312	315	319	323	327	330	332	333	334	334	334	334	334	334	334	334	334	334	334	337
Miraj	305	308	311	314	317	320	323	326	328	328	328	328	328	328	328	328	328	328	328	331	334	337
Mumbai (CC)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mysore	357	360	360	365	360	372	375	378	381	381	381	381	381	381	381	381	381	381	381	381	381	386
Nagapur	347	347	347	352	352	362	362	367	367	367	367	367	367	367	347	347	347	342	342	342	347	357
Namakkal	305	308	312	320	322	322	320	318	310	310	305	300	292	300	305	310	317	320	320	322	325	328
Pune	350	350	355	355	355	365	365	370	370	370	370	370	370	370	350	350	350	350	350	355	355	360
Punjab	352	355	355	357	358	360	362	364	365	365	365	365	360	355	350	350	350	350	350	350	350	352
Vijayawada	290	290	290	290	301	311	311	311	311	311	300	295	295	298	302	-	-	-	-	-	-	-
Vizag	312	315	317	320	324	328	332	335	337	338	339	339	339	339	339	339	339	339	339	339	339	342
W.Godavari	333	350	350	350	350	350	352	352	352	352	352	352	352	352	352	352	352	352	352	352	352	355
Warangal	310	310	312	315	319	323	327	330	332	333	334	334	334	334	334	334	334	334	334	334	334	337

Source : www.e2necc.

## ADVERTISEMENT INDEX

A.P POULTRY EQUIPMENT	125	KAYPEEYES BIOTECH	97
ABT CORPORATION	41	KEMIN IND.	BACK COVER
ABTL	77	KNOWLEDGE DAY	26
ALARSIN	57	LUBING	118
ALIVIRA	71	LUMIS	12
ALLTECH	31	MSD	83
AVIAGEN	5	NATURAL REMEDIES	27
AZRA'S POULTRY EQUIPMENTS	113	NEOSPARK	91
BAYER	79	NOBLE	67
BLUE STAR	98	NOVUS	1ST COVER
CEVA POCHEM	35	OMEGA	123
CHEMBOND	53	PERICOLI	29
CREDENCE	21	POLARIS	85, 99
DHUMAL	19	POULTRY INDIA	59
DSM	39	PRAKASH FOODS	69
ELANCO	55	PROVET PHARMA	111
ELPE LABS	61	PROVIMI	33
EVONIK	73	RIOTH	81
EW NUTRITION	128	RND AUTOMATION	93
FARMAKON	43	SAI KRISHNA	115
GARTECH	51	SHANTHI GROUP	109
GOLDEN GROUP	64	SRINIVASA FARMS	65
FRANCIS	103	SUPREME	95
GLOBION	37	THE HIMALAYA	101
GUYBRO	89	VENKY'S	14
HESTER	119	VESPER GROUP	75
HUVEPHARMA	25	VET NEEDS	105
I.B GROUP	13	VENTRI	3RD COVER
INDIAN HERBS	121	VOLSCHENDORF	117
INTERFACE PHARMA	2,3,4	ZENMAK	15
INTERHEAT	6, 7	ZOETIS	8
INTRON	17	ZYDUS	10
JAPFA	94		



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