

POULTRY PLANNER

R.N.I. 71668/1999

Title Code HARBIL00563

Vol. 24 | No. 11 | November - 2022

*Imbalanced Gut
leads to production loss!*



Presenting...

The next generation synbiotic



Multi-strain
probiotic

Herbal
prebiotic

Phytochemicals

- Balances intestinal microbiota to maintain gut health
- Boosts immunity and improves digestion for optimum performance

Net Wt. 5 kg

Himalaya Wellness Company

Makali, Bengaluru 562 162, India

www.himalayawellness.com

E-mail: write.to.us@himalayawellness.com

Layer Challenges?





MINERAL MANAGEMENT

BENEFITS FOR BREEDERS / BROILERS / LAYERS

- ✓ Better absorption, utilization, bio-availability and retention of minerals
- ✓ Improves performance including fertility, egg production & hatchability
- ✓ Higher immune response and antioxidant defense system



OUR SOLUTIONS

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> • ValMin Zn (15%, 20%) • ValMin Mn (15%, 20%) • ValMin Fe (15%) | <ul style="list-style-type: none"> • ValMin Cu (10%, 12%) • VALSe-Selenium Yeast (2000 ppm) • VALCr-Chromium Yeast (1000, 5000 ppm) | <ul style="list-style-type: none"> • SAKTHI* • SAKTHI PLUS* • SAKTHI LAYER* • CUSTOMIZED PACK* |
|---|--|--|

*Organic mineral concentration, refer product specification sheets or contact Valvin representative.



Quality & Safety is our allegiance to our customers. Our production process follows international quality standards & systems with highly stringent protocols and follow ups.

20Kg Poly-laminated paper bags



FEW Days to go
POULTRY INDIA EXPO-2022

Hall No.05, Stall No **W22 &W23**
SEE YOU THERE 23rd to 25th Nov.2022
HITEX Hyderabad



Contact us on
+91 99851 75726
Email:
valvinsales@gmail.com

Valvin Nutraceuticals, No. 10, 3rd Floor, Golden Square Centre, Esteem Mall, Kempapura Main Road, Hebbal, Bengaluru 560092, Karnataka, India.

+91 94297 76666 info@valvin.in www.valvin.in



**Celebrating 61 Years of
Industry-leading innovation
servant leadership
transforming lives**

KEMIN | **EST. 1961**

#61since61

VH NEWBRO-MN

NEWCASTLE DISEASE AND AVIAN INFECTIOUS
BRONCHITIS VACCINE INACTIVATED



Venworld

THE BEST IN ANIMAL HEALTHCARE

Genotype XIII

INDIA

Novel NPR
Variants

2014
Genotypic
reclassification

1990's
INTESTINAL
FORM

1984-2014
Most
variable
Genotype
VII

1980
Genotype
VI

1960's
NEPHROPATHOGENIC
FORM

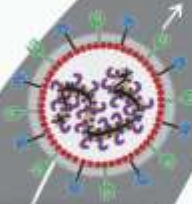
1950's
REPRODUCTIVE
FORM

1960-1980
Genotype
III, IV, IX
and X

1926-1960
Genotype
I, II, IV

1930's
RESPIRATORY
FORM

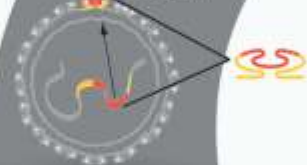
Fusion protein



NDV - 1926

Diversity in antigenic types

Spike protein



IBV - 1937

VENTRI BIOLOGICALS

(Vaccine Division of VHPL)

'Venkateshwara House', S. No. 114/A/2, Pune Sinhgad Road, Pune 411030. Tel.: +91 (020) 24251803, Fax: +91-20-24251060 / 24251077.



Email: ventri.biologicals@venkys.com

www.venkys.com

*A new
dimension in
mineral nutrition...*



Organic
trace minerals
with added
advantage of
Chromium and
Phytoactives for
better performance.

Optimal calcium
absorption (Hadjod)

Endurance optimizer
(Chromium, Lasuna, Shatavari,
Amalaki and Ashvagandha)

Himalaya
SINCE 1930

HimChelate-P™

POWDER

ANIMAL FEED SUPPLEMENT

Chelated mineral supplement fortified with herbs



- Improves bone strength and shell quality
- Meets nutritional requirement

Net Wt. 20 kg

Himalaya Wellness Company

Makali, Bengaluru 562 162, India

www.himalayawellness.com

E-mail: write.to.us@himalayawellness.com



SUCCESS BREEDS SUCCESS

ROSS 308 AP DELIVERS FOR VN HATCHERIES

"The Ross® 308 AP offers the right mix of productivity, health and vitality to ensure the ongoing success of our business operations."

MR. ASHOK MANDAVA

Managing Director of VN Hatcheries

VN HATCHERIES A new broiler breeding company with a focus on new generation consumers and sustainability goals.

SUCCESSFUL FARMERS in India CHOOSE the Ross 308 AP for:

- 1.5 to 2 points of FCR improvement annually
- Average 10 - 15 more chicks per hen than the competition
- High meat yield and excellent meat quality

To learn more, visit our website at <https://ap.aviagen.com> or follow the QR Code below.



Aviagen India Poultry
Breeding Company
Private Limited

+91 4252 233 650
info@aviagen.com
www.aviagen.com



From the Editor's Desk



Environmental control shed for Poultry Production

Many people are unaware that the poultry industry is a major source of pollution and environmental damage. Poultry farms generate a lot of waste, which can end up in our waterways and soil.

Environmental control sheds are one way poultry farmers are attempting to reduce their environmental impact. These sheds help to reduce the amount of waste produced by the chickens while also keeping the chickens healthy. This has also eliminated a significant barrier of heat stress in the way of cost-effective commercial poultry production. These sheds are common in commercial poultry operations, but they are also found in backyard chicken coops.

An environmental control shed (ECS) is a type of poultry house that employs mechanical ventilation and other systems to create an optimal indoor environment for poultry production. The use of an environmental control shed can help to improve the quality of eggs and meat while also increasing the birds' lifespan.

Birds perform better in controlled-environment sheds than in naturally ventilated houses because the conditions can be kept in the birds' thermal comfort zone. Creating an ideal environment for birds is dependent on proper poultry house management.

Providing a balanced environment and optimal conditions for the birds results in increased intensive production and long-term cost savings. As a result, understanding how ventilation systems work and the benefits they provide is critical for the development of any poultry farm.

OUR TEAM

Bhavana Gupta

Editor-in-Chief
editor@pixie.co.in

Siddhi Gupta

Co-Editor
siddhi@pixie.co.in

Kudiarasu J

General Manager- Sales & Marketing
kudiarasuj@pixieexpomedia.com
M: 74199 93009

Priyanka Patlan

Co-Editor
editor.pcs@gmail.com
M: 999 170 5007

Prince

Graphic Designer
M: 9467147541

MANAGEMENT TEAM

Vishal Rai Gupta

Managing Director
vishal@pixie.co.in

Parth Rai Gupta

Director

HONORARY EDITORIAL BOARD MEMBERS

Dr. Sekhar Sushil Basak

Innovista Consulting, New Delhi

Mr. G.K. Rathinam

Palani Tk, Dindugul Dist, Tamil Nadu

Dr. M Ravindran

Namakkal Dist, Tamil Nadu

Dr. SS Rathore

(MVSc Poultry Science IVRI, Izatnagar)

Dr. Manisha Singodia

(MVSc Veterinary Science, Jaipur)

Dr. Annada Das

(Ph. D Scholar, WBUAFS, Kolkata)

Dr. B.L. Saini

(Ph.D IVRI, Izatnagar)

Dr. Bilawal Singh

(MVSc, Assistant Professor Ludhiana)

- Editorial Policy is independent. Views expressed by authors are not necessarily held by the editors.
- Registered as Newspaper by Registrar of Newspaper for India : RNI No. 71668/1999, Tittle Code HARBIL00563
- Editorial & Advertisement may not be reproduced without the written consent of the publishers. Whilst every care is taken to ensure the accuracy of the contents of Poultry Planner the publishers do not accept any responsibility or liability for the material herein.
- Publication of news, views of information is in the interest of positive poultry industrial development in India. It does not imply publisher's endorsement.
- Unpublished material of industrial interest, not submitted elsewhere, is invited.
- The submitted material will not be returned.
- Publisher, Printer Mrs. Bhavana Gupta on behalf of Pixie Publication India (P) Ltd. Karnal Printed at Jaiswal Printing Press, Railway Road, Karnal
- Published at : C/o OmAng Hotel, Namaste Chowk, Near Janta Petrol Pump, KARNAL - 132001 (Haryana) INDIA
- Editor-in-Chief : Mrs. Bhavana Gupta
- All Legal matters are subject to karnal jurisdiction

1st Edition

INDIA POULTRY SHOW

20,21,22 January-2023

Codissia Trade Fair Complex
Coimbatore, Tamilnadu, India



Feed Equipments
Poultry Technology
Egg Farming
Poultry Nutrition
Animal Health
Poultry Medicine
Poultry Consultants
Supply Chain
Technology
Exporters & Importers

Event by



www.indiapoultryshow.com

South India's Premium Exhibition for Poultry Industry

Supported Associations



Magazine Partners



Media Partner



Join us : +91-9391391162, +91-9150056014

Advertisement

Alura Animal Health & Nutrition	41
Aviagen	05
Ayurvet Limited	Back Opening
Biosint	21
Biosint	75
B.V. Bio-Corp Pvt. Ltd.	27
Glocrest Pharmaceutical Pvt. Ltd.	37
Gupta Agro Industries	55
Huvepharma	39
Himalaya Wellness Company	Front Title
Himalaya Wellness Company	01 (A)
Himalaya Wellness Company	04
India Poultry Show	07
Indian Herbs	23
Kemin	Front Inside
Maxima Nutrition	Back Title
Natural Herbs	17
Novus	09
Patel Feeders	43
Pixie Consulting Solutions Ltd.	19
Provimi Animal Nutrition India Pvt. Ltd.	77
Sapience Agribusiness Consulting LLP	15
Success Poultry Care	53
Suguna Foods	Back Inside
Top Syringe Manufacturing Company	25
The Poultry Expo	29
Uttara Impex Pvt. Ltd.	13
Uttara Impex Pvt. Ltd.	31
Vaksindo Animal Health Pvt. Ltd.	11
Valvin Nutraceuticals	2 (A)
Venky's	33
Ventri Biologicals	Front Opening
Zoetis India Ltd.	35

Press Release

56	Biosint Nutraceuticals Collaborates on Research for its New Innovative Product ...
57	Food Safety & Food Quality through a One Health Approach
60	CII - EWN Round Table Session on One Health Approach to AMR & its challenges in Animal ...
62	DUVASU Celebrates World Egg Day
63	Trouw talks about the Challenges of Tomorrow that need to be addressed Today: Review on Anti-microbial ...
65	Carus Laboratories Exhibits at Aviana Africa in Uganda and introduces its innovative solutions



Features

06	Editorial
08	Advertisement Index

Departments

Making A Difference	54
Janaki Group- CSR Initiative	
Save The Date	67
Moving On	68
Tech Chronicle	70
Innovatec Expands its Innovative Footprint by Introducing the Ultimate In-Ovo Egg Injection System	
News	72
Editorial Calendar	76
Subscription Form	76

Article

10	Role of Poultry in Nation Building G. Vignesh
14	Poultry Drinking Water Understanding pH. Dr. V. Rajendra Prasad
16	Environmental Control System in Poultry Houses Anuj Kumar
22	PHYTASE A Practical and Rational Application in Broiler Rations Nataraja H. B.
28	Improved Emulsification Contributes To Pigmentation ORFFA
32	Newcastle Disease Arpita Sain
36	Jugalbandi (Joint Action) of Enzymes & Probiotics in Feed Digestion & Gut Health Glocrest
38	Probiotics and Early Microbiota Wouter van Der Veken - Huvepharma
40	Effective Phytomolecules Combine Superior Processing Stability and Strong Action in The Animal
44	Eradication of Microbes and Parasites with Immunomodulatory Actions; A Herbal Approach Dr. Shilpi Dhall
46	Poultry Housing Environmental Control M. K. Singh
49	Enhancing the Biosecurity System in Poultry Farming Through Oxidation Chemistry Rajib Upadhyaya - Cargill
51	Collection and Transportation of Specimens for Poultry Disease Diagnosis Dr. N. P. Radhakrishnan



MINTREX
BIS-CHELATED TRACE MINERALS

Trust Forms The Core Of Our 'BONDS'...

When it comes to setting higher benchmark of performance as compared to other chelated mineral sources; producers across the world spread over 100 countries, trust MINTREX®.

MINTREX® is the only globally available bis-chelate where one molecule of metal is attached to two molecules of HMTBa (2 hydroxy-4-methylthio-butanoic acid) by strong bonds. The unique, stable and neutrally charged structure of MINTREX® minerals lead to higher absorption, bioavailability and production performance as compared to other mineral sources. The uniqueness of MINTREX® minerals has been recognized by various international bodies like EU and AAFCO by classifying them as a distinguished class of minerals.

Zn

80% Methionine Value

CU

78% Methionine Value

Mn

76% Methionine Value

Building 'BONDS' Stronger

www.novusint.com



***TMO Plus**

(For 'Trace Mineral Optimization' in Poultry)

*TMO Plus standard premix from Novus® contains MINTREX® minerals as source of Zn, Cu and Mn. "Novus" and MINTREX® trademarks of Novus International and are registered in the United States and other countries. 2022 Novus International, Inc. All rights reserved.

NOVUS
SOLUTIONS SERVICE SUSTAINABILITY™

Role of Poultry in Nation Building



G. Vignesh

*B. Tech (Poultry Production Technology),
MBA, Abis Exports Pvt Ltd, Karnataka
Cell:6382555815*

Introduction

India being in the tropical region of the world the prevailing macro climatic conditions is mostly congenial to poultry production among the many sub sectors of agriculture livestock sector is gaining Momentum in India and within the livestock sector, poultry occupies a prime position India is the second largest poultry market in the world with the 63 billion eggs and 649million poultry meat.

Rise of an Indian poultry industry

we can proudly says that we are the most fastest growing country among the world in all sectors not only in poultry because in 1950s the poultry population which was only 73.5 million this scenario is within the span of 50 years it will reach 942 million (stats by 2011 livestock census)it enormous growth rate is 12.38% per year. In this article I hope you can understand how our poultry industry grows after independent and how it supports to our Nations growth.

Broiler industry

Year	Milestones or contribution of broiler industry to nation
1962	In this phase, worldwide countries already they are started the broiler production and being a leader in the world, this time only we are import the Israel Rock and Israel Cornish meat type birds to India. It is the first step.
1970	AICRP - all India coordinated research project on egg and meat. This scheme by Indian government initiates a revolutionary in broiler production in India, Rural farmers started this venture and earned income from allied agricultural activity
1980	Entry of private sectors ,poultry up to this time it's known as poultry farming after entry of this private sector this poultry farming is converts into a poultry industry it brings the pure line stocks and multiple batch system and Technology in rearing system all introduced from the private sector
1995	Contract farming system that is integration method of birds rearing it excludes the marketing risk of farmers and it generates the constant income for rural side farmers and it boost up their livelihood also
2000	Apart from private Industries the growth of the integrators and mammoth hatchery's feed Mills and allied sectors of poultry also started to rise in this phase, it generates lot of opportunities to the different kinds of people.
2010	Entry of broiler breeder Giants and it gives the FDI foreign direct investment in the poultry industry, entry of foreign poultry sectors inside the India and in 1960s it need 8 week to produce one broiler bird but in this phase we are par with world standard in 40 days we can able to produce 2.2 kg broiler with 1.6 FCR. it means we are in the world standards and in world race at this time
2022	1950, amidst the world chicken meat production we positioned bottom in the top 10 table but now we are the 4th largest chicken meat producers in the world.

Layer industry

Year	Milestone or contribution to the nation
1950	We are only doing backyard rearing in this time.
1955	We introduced WLH (White leghorn)a prominent layer in the fields of India



FORTHCOMING PRODUCTS



High degree of safety.

Propagated in **SPF**

Does not exhibit any side effect.

Long lasting stability.



Brings You Their Solutions With Research Based Vaccines At Poultry India 2022



HALL-5, X17-21

Hitex Exhibition Center Hyderabad.

23-24-25 November 2022

VAKSINDO ANIMAL HEALTH PVT. LTD.
RESEARCH BASED VACCINES

H No. 8-7-89/C/P-II/125, Ground floor, Chaitanya Nagar, Kharmanghat, Saroor Nagar, Ranga Reddy Hyderabad, Telangana- 500070. Tel: +91 40679 34239 | Web : www.vaksindo-india.com | customercare@vaksindo-india.com

1970	AICRP on egg by government, this schemes from our nation is the major key point to elevate poultry industry to next level
1975	Cage rearing system introduced, it leads to produce mass number eggs, a revolutionary phase in layers
1982	NECC -National egg Co ordination committee, this organization amalgates the scattered farmers and private sectors into a organized sector, They fixes the rate and makes constant income to the farmers
1995	Integration method in layers introduced majorly vertical integration and raised platform cage technology also entered in our country which yields lot of opportunities and jobs for allied sectors also
2020	Not only in production, we fetch global level market in processing of eggs also it makes our nation global leader in egg production at this phase
2022	1980s we are in the 12th position in worldwide egg production, now we are in 3rd in world egg production within the span of 50 years. As per ICMR Recommendation 180 eggs is the per capita availability, we reach 80+ now still we had potential one day we will become no1 in world egg production.

Roles played by a poultry industry for nation growth

When we are going to talk about the role it supports to the nation here we can split poultry industry into 3 sector i.e broiler, layer and allied poultry industries

Allied industries and its contribution

The term poultry- is not only broiler and layer, it consists of duck, Japanese quail, turkey, G. fowl, emu production and we are pioneer in this also nowadays.

According to FAO stats since 2005, India had mostly exported 437673.3MT of egg and poultry products to Oman, German, Indonesia, Saudi Arabia and Afghanistan worth Rs. 565.87 crore in 2013 -14 calendar year. It resembles we are leading exporters in the world in poultry and fairly increases the GDP of the country.

GDP contribution of poultry

The Indian livestock sector currently contributes 25.6 percentage to the

1.3 lakh crore to the GDP. I hope in future the poultry industry alone contributes fair role in GDP

Impact on National economy

In 1950s contribution of poultry meat and egg to the nation economy was 1578 million USD and now it contributes approx 9000million USD, a enormous growth of our nation in poultry industry reflects here. At present poultry industry in India is growing around 8 to 12 % per annum whereas the production of agricultural crops has been growing only at the rate of 1.5% to 2.5%.

Employment potential and its future

Current Poultry sector employee in the industry around 3.5million which is equal to other sector corporate giants. About 80% of the employment directly generated by farming and 20% contributed by feed, pharma, Equipments and other services by poultry industry .According to ICAR VISION 2025, an increase in per capita availability of one egg will generate 50,00 more jobs. Definitely here I write this our nation shows its phenomenal role in our national growth during past fifty years.

Conclusion

- The Indian poultry sector has undergone a dynamic change from backyard rearing to commercial rearing
- Growth witnessed in egg and poultry meat production ensures their availability, affordability and food security. Undoubtedly the credit goes to poultry farmers, poultry breeders, vets, integrators, indust
- rialists, feed manufacturers and pro active government policy.
- "HAPPY WORLD EGG DAY TO ALL"

Duck production	Ducks are the second largest source of table eggs in India and states like west bengal, Assam, kerala, Tripura, Jharkhand they are producing nearly 16044 lakhs eggs on 2011 and it has fair potential to generate jobs and enhancing the rural people livelihood
J. Quail	In 1980s it's introduced in India because of its unique taste it became a unique in poultry, In rural area lot of household people and women generating income by this quail production, it has only 4 to 5 weeks of rearing period and mean feed consumption is good, main benefit of this quail production it don't need a huge initial investment and less space requirement is enough. Tamil Nadu state alone produces over 9 million Japanese quails annually.
Hatchery	There are more than 800 hatcheries operating in India nearly 1.3million Layer parents and 280 million broiler parents supplies 95million commercial Layers and 3.5 billion commercial broilers. In over all poultry employment hatchery employment accounts 25 to 30%

Export of poultry products and its contribution

Indian poultry Exports are mainly shell eggs and egg products.

agricultural GDP and 4.1 percentage to the national GDP which is Far below the potential it holds, the poultry sector contributes Rupees

UTTARA IMPEX PVT. LTD.

ADVANCED NUTRITION LAB



UTTARA IMPEX PVT. LTD. has set-up an Advanced Nutrition Lab for the Indian poultry farmers to help them to analyse the raw material and poultry feed. The laboratory is equipped with an Advanced FT-NIR machine, Toxin Analyser and Advanced Protein Analyser.



TESTS CONDUCTED AT THE LAB

Amino Acid Profile
Apparent Metabolisable Energy [AME]
Total Phytic & Available Phosphorous [TPP]
Total & Standardised Ileal Digestible Amino Acids [TDAA]

Moisture
Crude Protein
Crude Fat
Crude Fiber
Total Ash
Sand & Silica
Total Phosphorus

Calcium
Magnesium
Salt
Soluble Protein
Urease Activity

Thiuram
Aflatoxin
Ochratoxin
T2 / HT-2 Toxin
Zearalenone

Contact Details:

Mr. Shankar Reddy: 8008802148 / Mr. Vijay Kumar: 8008101670

UTTARA IMPEX PVT. LTD.

Advanced Nutrition Lab, BSR Arcade, Door No. 4-3-109/33, Sri Sai Colony Phase II, Old Highway, Hayathnagar, Hyderabad R.R. Dist- 501505.

Poultry Drinking Water

Understanding pH.



Dr V. Rajendra Prasad
Poultry Consultant

1. You're probably aware of the importance of pH, especially when talking about watering systems and treatments.
2. But how well do you really understand it?
3. pH is the abbreviation of "power of hydrogen" (the 'H' is capitalized because it represents the element symbol of hydrogen, and it is standard to capitalize those). pH measures the hydrogen ion concentration in a water-based solution – whether water itself or solutions containing water, such as blood or intestinal fluid.
4. The pH scale usually runs from 1 to 14 – with 1 being very acidic, and 14 very alkaline (basic). A pH of 7 is considered neutral.
5. Each whole pH value below 7 is ten times more acidic than the higher value.
7. Each whole pH value above 7 is ten times less acidic than the one below it.
8. With the new understanding of what pH actually means, how does it relate to poultry?
9. Neutral water, which is neither acidic nor alkaline, has a pH of 7. But this isn't as common as you might think.
10. Most water sources fall on either side of neutral, depending on location, geology, and other environmental factors.
11. Before you can make any changes to your pH, you have to get a baseline reading of what it is. You can accomplish this with inexpensive pH test strips.
12. Low pH is aggressive and causes mineral leaching by releasing lead, copper, and other minerals from the pipes into the water.
13. A lower pH reduces scale and biofilm buildups, which harbor pathogens.
14. A lower pH also creates an unfavorable environment for bacteria like salmonella.
15. High pH imparts an undesirable taste to poultry and will cause them to back off water, decreasing performance. broiler production systems.
16. Studies have found that birds can tolerate a wide range of pH water, being virtually unaffected by pH levels of 3, 4, and 5, tolerating levels up to 8.
17. A pH of less than 5 corrodes metals and results in mineral leaching and shortens the lifespan of the system.
18. Poultry prefer water with a pH of 6.0 to 6.8. However, water with a pH less than 6 has been shown to negatively affect chicken performance.
19. A pH of 5.5 – 7.0 keep minerals suspended in water and increases the effectiveness of antimicrobials.
20. Knowing your starting pH and adjusting properly will help prolong the life of your equipment, improve the efficacy of your cleaners, and help improve bird performance. If you haven't checked yours in a while – now's the time.
21. Poultry prefer water with a pH of 6.0 to 6.8 but can tolerate a pH range of 4 to 8.
22. However, water with a pH of less than 6 has been shown to negatively affect chicken performance.
23. At the end of the day, a bird who drinks more water will perform better."
24. "Providing clean, pathogen-free water at a pH level that is preferred by birds rounds out a robust water treatment program."



eXolution
Bacterophage F

We took an already great product and made it even better.

eXolution is now Xcelsio.
Our relentless effort to make the world a safer and healthier place has led us to create Xcelsio. After years of cutting-edge research in Korea, we have come up with an advanced formulation to make Xcelsio more potent than before.

Xcelsio comes with a more concentrated cocktail of bacteriophage and is fortified with more Bacillus subtilis. This new and improved formulation, created specifically for use in

poultry, is simply unmatched in controlling pathogenic bacteria—giving you Total Gut Control.

Each of our bacteriophages is painstakingly selected using our proprietary Bacterophage F technology to target and eliminate specific bacteria; leaving other beneficial bacteria completely unharmed. This natural surgical strike on disease-causing bacteria is the safest, non-toxic, and most effective prophylactic alternative to antibiotic growth promoters.

xcel시오

Natural Feed Additive



BENEFITS TO THE FLOCK

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

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

Protective:
Maintains gut bio-balance by retaining beneficial bacteria

Probiotic:
Enriched with Bacillus Subtilis.

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

BACTERIA IT CONTROLS

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

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

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

Staphylococcus Aureus

FOR USE IN
BROILERS, LAYERS
& BREEDERS

MADE IN KOREA BY:

CTCGLOBAL
INCORPORATION



IMPORTED & DISTRIBUTED BY:
Sapience Agribusiness Consulting LLP
326 HRBR Layout, 4th A Cross
3rd Block, 3rd Main, Kalyan Nagar
Bengaluru 560043, Karnataka (KA), INDIA

sapience

Environmental Control System in Poultry Houses



**Anuj Kumar^{1*}, Amit Kumar²,
D K Singh³, Ahmad Fahim⁴, Varsha
Vihan⁵ and Rohit Kumar⁶**

¹Ph.D. Research Scholar, ²Professor and Head, ³Professor, ⁴Assistant Professor, Department of Livestock Production Management, ⁵Ph.D. Research Scholar, Department of Livestock Product Technology, ⁶Ph.D. Research Scholar, Department of Animal Nutrition, College of Veterinary and Animal Sciences, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, 250 110, India
Corresponding author:
Email- *drvetanuj@gmail.com

The environment is the total of all living and non-living things in nature that affect an individual's survival and development. In underdeveloped nations, efforts to improve poultry housing have been concentrated on creating an environment that meets the poultry thermal requirements. The environment conditions in which poultry are raised it will affect the flocks performance and economics. It is widely acknowledged that environmental conditions significantly affect the production of meat and eggs from poultry. Both humans and the birds' health and well-being are impacted by the climate in poultry houses. In houses where the climatic circumstances are poor, respiratory, digestive, and behavioural issues are more likely to occur. Climate is the totality of environmental conditions that affect how they function. These include air pressure, partial pressures of oxygen and carbon dioxide, altitude, temperature, humidity, light (daylength

systems to keep the right temperature and ventilation, programme for lighting and relative humidity is ideal.

Need to control environment

Physical environment in the immediate vicinity of the birds is known as the microclimate. The microclimate, or surrounding air, serves as a medium for the transportation of excess heat, water vapour, gases, other particulate matter and gases from the decomposition of manure. It also contains oxygen for their metabolism. Air velocity, temperature, relative humidity, as well as gases including oxygen, ammonia, carbon dioxide, methane, nitrous oxide and hydrogen sulphide are significant microclimate factors that influence the quality of the air in the houses. The main goals to control environment climate control include to improve feed conversion ratio in birds, internal ventilation inside the house, reducing the bird's mortality,



and intensity), wind velocity (movement of air), solar energy, water and air quality, and population density. An environmental controlled house is one where the interior conditions are kept as close to the bird's condition as possible. A closed structure, ideally running from east to west large exhaust fans on the west side facing west, while coupled with evaporative cooling pads on the east inside, in automatic feeding and drinking

keeping the indoor relative humidity, consistent air circulation and proper lighting inside the house etc.

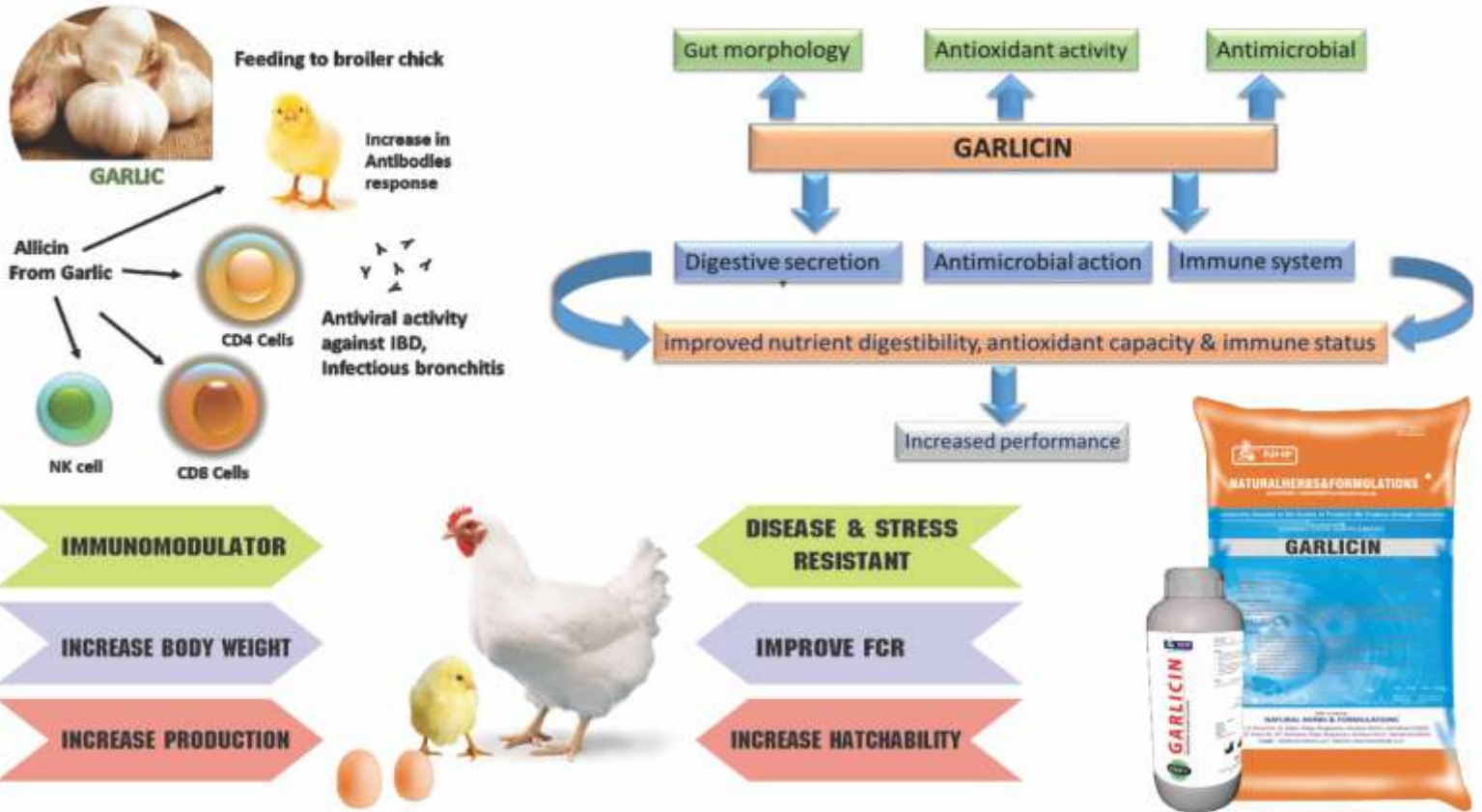
Methods to control environment factors

Cooling- A cooling system is needed to provide a comfortable atmosphere for the birds when the temperature rises above 85° F (29.4°C). Evaporative pads or walls are a fully integrated cooling



GARLICIN Antiviral & AGP Replacer

FUNCTIONAL IMPACT OF GARLICIN



T₃-100 Natural egg yolk Coloring enhancer & AGP Replacer



- ❖ Kill the Harmful pathogen by antimicrobial mechanism
- ❖ Boost immune system
- ❖ T₃ 100 is also use as Flavoring & coloring agent

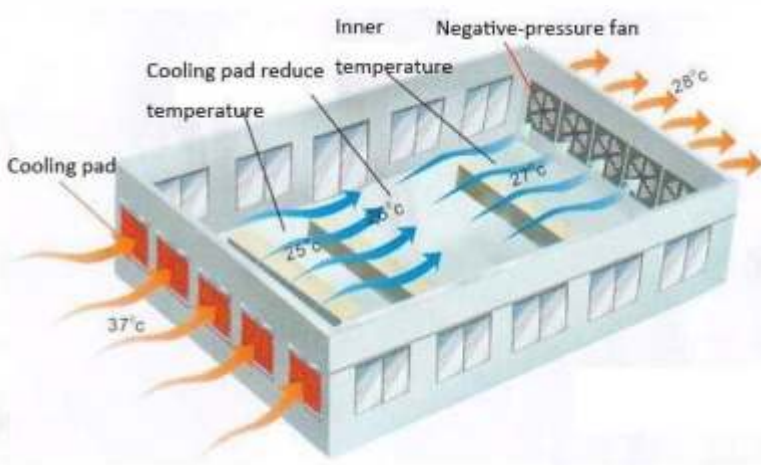


NATURAL HERBS & FORMULATION PVT. LTD.

(An ISO 9001:2008 & GMP Certified Company)

Corporate Office : 3rd Floor, Pinnacle Plaza, 83/154, Jakhan, Rajpur Road, Dehradun, Uttarakhand, INDIA

E-Mail : info@naturalherbs.co.in | Website : www.naturalherbs.co.in



system designed to quickly and easily address excessive temperature issues in controlled environment units. To provide the most possible interaction between water and air, water is pumped to the top of the wall and then disseminated throughout the panel via a network of tubes or perforations. As long as the air is humidified, there is enough air speed, and as long as the humidity of the incoming air is not too high, water evaporation removes heat from the air. The poultry houses have four cooling systems:

- 1) **Vacuum system-** This system has an exhaust fan at one end of the house and an evaporative pad at the other. Air is drawn through the evaporative pad by the exhaust fans, lowering incoming air.
- 2) **Pad-and-fan system-** Incoming air is drawn through a wet pad by exhaust fans in the house, where the evaporation of moisture from the pad lowers the volume of incoming air. This system comes in two different varieties and is used to cool poultry houses.
 - Low pressure fogging system-** The entire house or the tops of the caged birds have fogging nozzles that work under normal water pressure.
 - Pressured system-** Air is sucked through the coolers' evaporative pads and then pumped into the poultry houses using evaporative coolers that are mounted outside the house.
- 3) **High pressure nozzle system-** To lower the shed's temperature,

fogging devices are occasionally employed. Fogging typically entails multiple rows of high-pressure nozzles that disperse a fine mist around the house and works best in dry regions. As a result, the liquid phase becomes the vapour phase. The air that comes into touch with this change is significantly cooled. This technique does away with damp pads and works when there is high humidity

- 4) **Fog-and-fan system-** This is similar to a pad and fan system, with the exception that the incoming air is drawn through a cowl that has been fitted with high pressure foggers. The temperature of the air decreased as it was dragged through the fog. The airflow created by fans within the shed considerably boosts the cooling effect..

Ventilation- To assure an appropriate supply of oxygen, remove carbon dioxide and other waste gases such as ammonia and dust in poultry houses require some type of ventilation. In colder climates, ventilation practises are frequently used but not typically in those that are tropical. Natural (curtain) ventilation only performs admirably when the environment is nearly what is required inside the coop for chickens. Strong winds are needed for required exchange rate when it's cool outdoors, the air is likely to fall right on top of the birds. Positive and Negative artificial ventilation are the two types of ventilation. In environmental controls houses Negative ventilation is usually used.

1. Negative pressure ventilation-

By establishing a partial vacuum, negative pressure ventilation draws air into the house uniformly through all inlets, improving the indoor air quality. Ventilation powered by negative-pressure fans produces a partial vacuum in the home that permits management of the airflow pattern during ventilation. A securely closed house is essential for effective management of in-house situations in ventilation with negative pressure. Negative-pressure ventilation types are :-

Minimum ventilation - used for cooler weather and ran on a timer

Tunnel ventilation - Fresh air enters the home through air inlets that are near to the gable when the system is operating in tunnel mode. The air is fresh dragged longitudinally through the residence with the aid of high-performance fans.

Transitional ventilation- used to reduce heat while it's cold outside

2. **Mechanical ventilation-** These are made up of four main parts. Fans, openings, controls and heaters.

Fans- supply energy to convert the necessary quantity of per minute of air in a poultry house.

Openings- provide fresh air throughout the house and adjust the airflow's direction and maintain air velocity. The quantity of air exchange in a mechanical ventilation system is controlled



**Poultry Planner
&
Dairy Planner**
Monthly Magazine



THE NEW STANDARD
IN DEVELOPING TODAY'S BUSINESS

Advertise with us
Today
See your business
Growing

With Over
35,000+
Readership

The Magazine Covers all the latest news, articles, Product Launches, CSR, Press Releases, New Appointments, Latest Developments & a complete industrial overview.

**Boost
YOUR BRAND
VISIBILITY**
with us



Monthly Magazine's



ADVERTISEMENTS
MARKET REVIEW
INDUSTRY UPDATES
LATEST NEWS

Pixie Consulting Solutions Ltd.

C/o OmAng Hotel, Namaste Chowk, Near Janta Petrol Pump, KARNAL - 132001 (Haryana) INDIA
Email : poultry.pcsl@gmail.com, dairy.pcsl@gmail.com
Website : www.pixie.co.in

Marketing Division : +91 9991705007 / 7419993009

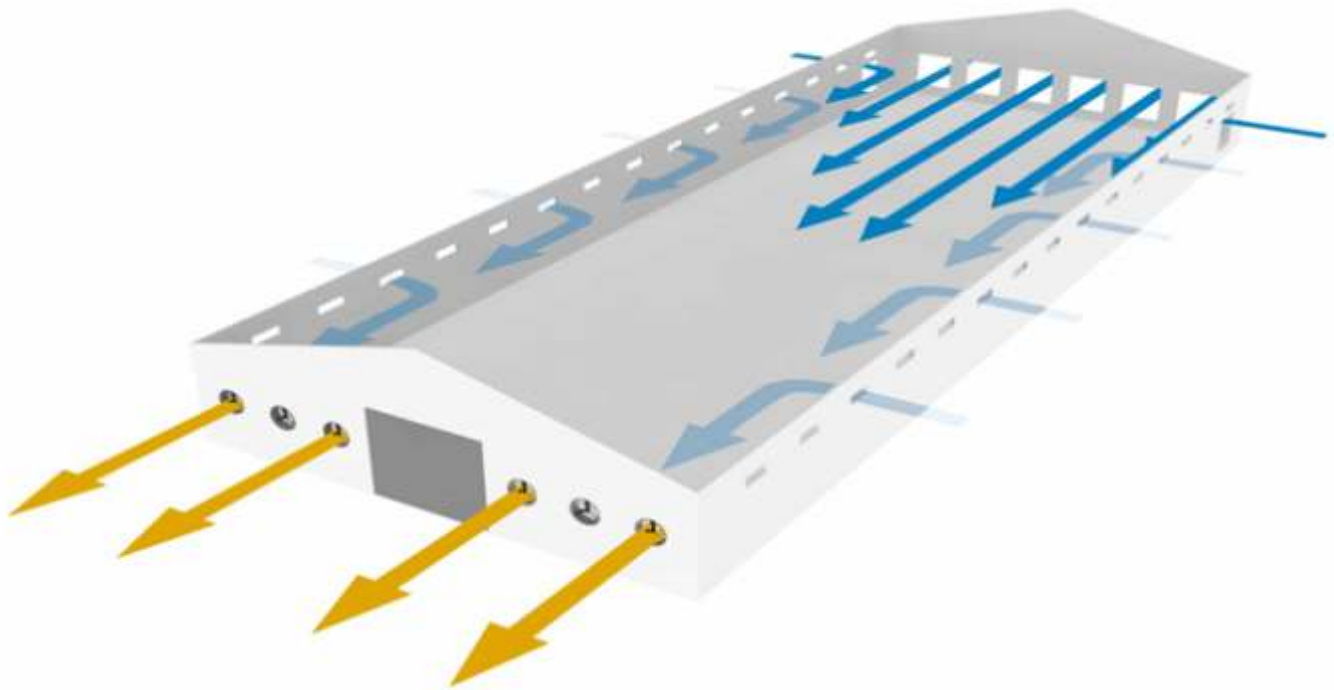
www.pixie.co.in

+91 9991705007

www.facebook.com/poultryplanner123

www.facebook.com/dairyplanner123

www.linkedin.com/pixie-consulting-solutions-ltd.



by both fans and opening.

Heaters- In naturally ventilated grower houses, additional heat is typically required to maintain optimal indoor temps when it's cold outside.

Controls- They are required to modify air flow rates, supplemental heating rates, and ventilation rates (fan controls) etc.

Temperature regulation- Farmers must make up for unfavourable weather conditions via altering control mechanisms or systems to guarantee the welfare to meet birds' environmental requirements. Extreme weather conditions (heat, cold, stress) poor air quality, excessive or insufficient ventilation managed by altering the design of house.

Lighting regulation- Environmentally

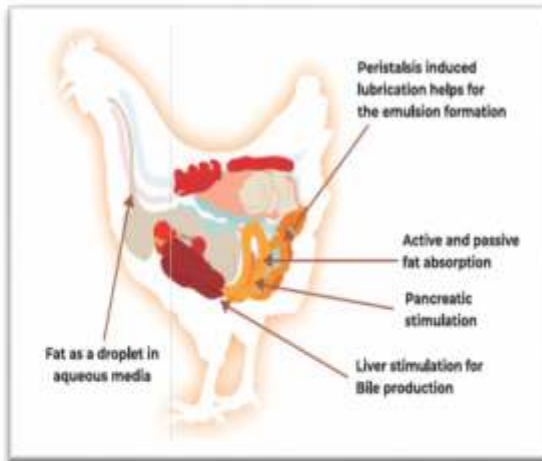
controlled houses must have effective lighting management. No external lighting should be permitted to enter the house. A surveillance and control system should offer timed lighting schedules that is easy to use. The ability to create exact lighting regimens followed a device that can schedule lighting schedules over the flock's particularly beneficial for management. Additionally, it is crucial to offer the desired level of illumination to the flock.

Feeding regulation- A technique of determining when to switch the feeders on and off is necessary for a feeding control system. The requirement that the same volume of feed be accessible at every location along the feeder. There are monitoring systems available to know how much bird feed is being consumed.

Conclusion

The new trend of environment control houses in chicken production has caused a considerable revolution in the industry in recent years. The major problem of heat exhaustion has been overcome the economically viable commercial poultry production. The evaporative cooling system which provides tunnel ventilation improved broiler production. Despite the advancements in environmental controlled houses, the growth rate, feed efficiency, and feed conversion ratio are also improved. The medium and large farmers may adopt and design their farms with environment control system due to this they will receive higher uniformity & biosecurity in addition to improved bird performance. The adoption of environment control system houses may increase production and improved efficiency of their farms.





LIPROVET

Accomplishing fat utilization beyond emulsification



LIPROVET

Fat, the indispensable component of the diets despite bringing the feed texture and digestibility challenges, support the body mainly for energy & hormone synthesis that directly affects performance traits and farm profitability. Despite emulsifier helps to ease the digestion & absorption, the best poultry diets today essentially needs a comprehensive approach for the fat metabolism in the body offering homeostasis, lipotransport & effective fat utilization. Today it is essential to support fat metabolism along with hepatic-regulators, lipotropic agents and osmoregulators for supporting for effective fat utilization by the bird.

Liprovvet is an ideal nutrient combo designed to optimize fat digestion, absorption & utilization for ultimate productivity, improved carcass traits that utterly suites the modern high energy diets.



Reach Out To Us:

BIOSINT NUTRACEUTICALS

Corporate Office : 37, Krishna Nagar, KK Pudur 4th St., Coimbatore - 641 038.

Telefax : + 91 - 422 - 2430275 | Mobile : 094435 17258

E-mail : biosint@gmail.com | Web : www.biosint.co.in



For technical details of product, trials you can connect Dr Prasad Kulkarni, Director, Biosint Nutraceuticals @prasad.kulkarni@biosint.co.in

PHYTASE

A Practical and Rational Application in Broiler Rations

“Phytase is considered the most cost-effective and efficacious additive that we have at our disposal.”



Dr Nataraja H.B.

Founder & Managing Director
Higain Feeds & Farms Pvt Ltd
Bangalore.

It is a well-known fact that feed accounts for 65 to 70% of total input costs in Poultry farming. Hence, it goes without saying that optimizing Poultry diets with the objective of precision nutrition and taking advantage of the latest updates in formulation technology can only lead to better technical performance with reducing feed costs.

Phytase is considered the most cost-effective and efficacious additive that we have at our disposal.

Dr Nataraja H.B. The application of enzymes in Poultry has been a major game changer in the last two decades and is continuously updated every now and then. Among exogenous enzymes used in poultry diets, Phytase has been universally accepted as a versatile enzyme by releasing available Phosphorus from the ingredients of vegetable origin. As the majority of Phosphorus is inbound farms (almost 2/3rd), this helps in saving a significant amount of feed costs and reducing the use of inorganic phosphates in the diets. The use of Phytase also has also beneficial effect in terms of sustainable production by reducing Phosphorus excretion in the litter.

Phytase is considered the most cost-effective and efficacious additive that we have at our disposal. It has become a common ingredient in broiler and layer diets for the last 20 years although it has been on the market since late 1990. Our understanding and application of Phytase have improved over the last few years. Till recently, Phytase benefits were attributed to its direct effect i.e., degradation of Phytate P which is abundantly present in the cell wall of plant ingredients neglecting the other extra benefits –the “Extra Phosphoric” effect of Phytase. We can now see it has been used rationally by the majority of producers and getting maximum benefits in terms of savings as well as improved performance.

Phytase is a unique enzyme which involves in the breakdown of mineral salt

(Phytate P) rather than organic compounds unlike other NSP enzymes, Protease etc. The commercial Phytases are classed as 'Histidine Acid Phosphatases' which have a broad spectrum of activity. They are very active at the Ph of 3 to 5 (acidic pH) whereas the NSP & Protease are active at Neutral Ph and since Phytase is active before any other enzymes and it becomes the starting point before considering any multiple enzymes and probably due to this many nutritionists consider Phytase as predominant enzyme when considering the enzymes for formulation. The efficacy of phytases depends upon how fast they can degrade Phytic acid before coming across a higher pH environment where they are almost inert in their activity.

There are mainly 2 types of Phytases based on the source and site of action.

1. 3-Phytases
2. 6-Phytases

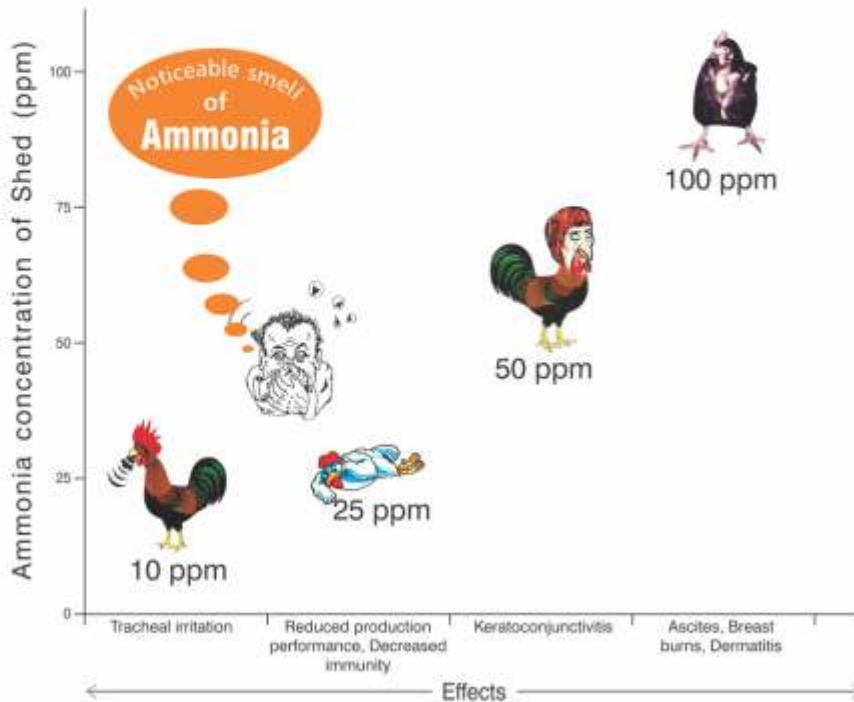
3-Phytases are the first ones to be introduced in the market and are mainly from Fungal sources (Aspergillus source based) and 6-Phytases from Bacterial origin (E.coli source based) were later introduced and they slowly replaced 3-phytases as they were more efficient in degrading Phytic Phosphorus. We are seeing continuous advancement rather than the evolution of Phytase since then. The present generation Phytases are 3rd generation phytases that have been further genetically modified and are very robust acting, stable, and can withstand extreme conditions of feed processing with better thermostability.

Maximizing the efficacy of Phytase



AmmoFree Premix

For ammonia control in poultry house

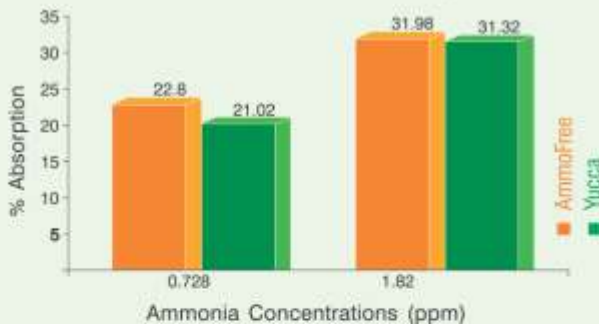


At 25 ppm Ammonia in poultry shed

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

SCIENTIFIC VALIDATION

Effect of AmmoFree and Yucca extract on absorption of Ammonia



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

Group	Livability (%)	Birds showing respiratory discomfort	Faecal NH ₃ (g/kg dry faeces)	
			Day 21	Day 42
Control	95.00	7	3.86	3.92 (+1.55%)
AmmoFree 100g/ton	96.67	X	3.95	2.71 (-45.75%)

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

USAGE

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

FEED INCLUSION RATE

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

PRESENTATION

1 kg & 10 kg bag

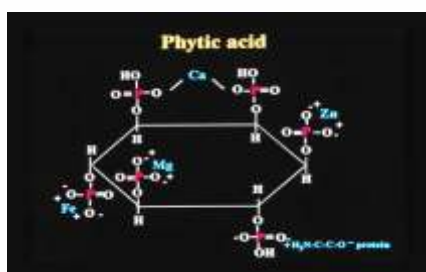


INDIAN HERBS SPECIALITIES Pvt. Ltd.

C-215, 2nd Floor, Elante Offices, Plot No. 178-178A, Industrial & Business Park
Phase - 1, CHANDIGARH (U.T.) - 160002, Ph. No. 0172 - 5011470, 4181014, +91 9023247217
E-mail : ihsp@indianherbs.org, Website: www.indianherbs.org

As we know, to increase the efficacy of any enzyme we need to understand the substrate upon which the enzyme is going to act upon, and in the case of Phytase it is the Phytic Phosphorus also termed Inositol Phosphorus (Myo-inositol hexaphosphate -IP6). It contains 6 Phosphorus molecules at different positions forming a hexagonal ring. Based on the site of activity Phytase are classed as 3-Phytases/6-Phytases. The phytate content of Ingredients varies significantly and it ranges from 60 to 85% of total P especially byproducts of cereals such as Rice bran and De-oiled rice bran are rich in Phytate P and serves as an ideal substrate for Phytase. Vegetative feed ingredients contain 65-80% of total P as Phytate P and serves as an ideal substrate for Phytase and this is highly anti-nutritional in nature. Phytates are highly irritant in GIT resulting in significant endogenous losses of nutrients in the form of mucin and also a potent inhibitor of main enzymes -Pepsin and Pancreatic enzymes. It is also a strong chelator of cations such as Zn, Fe, Mn, Ca & Mg and can also chelate with Vit B3(Niacin) and some of the amino acids such as Arginine and Lysine(basic AA). All these anti-nutritional effects of Phytate pave the way for the Phytase enzyme to exercise numerous beneficial effects.

Below image shows phytic acid structural bindings of Cations and Amino acids to have anti-nutritional impact



Phytate P content of common feed ingredients used in Poultry

Ingredients	Phytate P(%)	Total P(%)	%Of total P
Maize	0.17	0.22	77
Brokenrice	0.11	0.19	58
Wheat	0.19	0.29	65
Bajra	0.17	0.21	81
DDGS	0.16	0.66	24
Full fatsoya	0.27	0.45	60
Rice bran(polish)	1.23	1.44	85
De-oiled rice bran	1.68	1.99	84
Soya bean DOC	0.29	0.49	59
Rape seed meal	0.52	0.86	60
Maize gluten 60%	0.36	0.44	82
Sunflower meal	0.85	1.00	85
Ground Nut meal	0.34	0.56	61
MBM	0	6.00	0
Fish meal	0	2.65	0

Optimum Application of Phytase:

Phytase efficacy depends upon

1. Source of Phytase
2. Phytate content of the diet-Substrate level
3. Level of Ca and source of Ca
4. Dosage & application.
5. Feed processing conditions

Source of Phytase:

The present 3rd Generation 6-Phytases are more efficacious than the old

generation 3-Phytases(fungal origin) as they can act at varied levels of pH, fast acting, stable at varied pH and are thermostable in nature. They are less pH sensitive, are aggressive Phytate removers and have capacity of removing majority of Phosphorus. They can be twice efficacious than 3-phytase which at single dose (500 FTU/kg) which can degrade 35-40% of Phytate P whereas 6-phytase can degrade up to 70% of Phytate P.

Phytate content of the diet:

It will be a better practice to consider Phytate P levels in the diets and to consider scope of Phytase activity. The Phytate values to be applied to ingredients and to check the levels while formulating the diets will be first step in rational use of Phytase. As we all know, Phytate P is abundantly present in raw materials from plant origin, the Phytate P will be in the range of 0.22% to 0.28% in normal maize soya diets and it can drop up to < 0.2% when animal protein sources such as MBM, Fish meal etc. are used. In those cases, one need to be careful about considering the Available Phosphorus release as Phytase efficiency cannot be more than 70 to 75% considering practical conditions and variations at feed mill and farm level. Many research trials have concluded Phytase efficacy was significantly higher in maize-based diets compared to other grains and they were more responsive in terms of broiler performance-Weight gain, Feed intake and FCR.

Level of Calcium and source of Calcium:

As Ca and P metabolism is interlinked, the Phytase efficacy depends upon dietary Calcium, Total P, and Phytate P levels. Higher dietary Ca levels have a negative effect on phytase efficacy as Phytic acid is a strong chelator of Calcium, higher plasma concentrations of Ca will lead to the formation of insoluble salts of Calcium Phytate which are refractory to phytase activity and phytase efficacy will be affected negatively. Hence, it goes without saying - Ca in Broiler diets need to be regulated and we need to ensure there is no excess calcium which can happen through weighing errors of limestone

VetDose

Automatic Vaccinators



- Simple Operation
- High Quality Construction
- Accurate Dose



**VETERINARIAN
APPROVED**

PRODUCTS ALSO
AVAILABLE IN
PRIVATE LABEL

Automatic Vaccinators / Veterinary Injectors

Sizes: 0.5ml, 1ml, 2ml, 5ml, 10ml



VetDose **Prime**
Vial Holder Set (VHS)



VetDose **Prime**
Feed Tube Set (FTS)



VetDose **Prime**
Bottle Mounted Set
(BMS)



VetDose **Classic**
Mixed Dose Full Metal Body
(FMB)

All spare parts easily available

in feed mill or using the former as a carrier of premixes and additives. Nutritionists/formulators need to be careful while formulating diets and it is better to consider Ca matrix values for Trace minerals, Vitamin premixes, and other additives. Minimum and maximum constraints need to be applied for Calcium while formulating.

The source of Calcium also has an effect on Phytase efficacy as a more soluble source from limestone powder has a negative effect as it tends to increase the pH reducing the phytase activity. Many research trials have found that feeding less soluble Calcium sources (larger particle size) improves the phytase activity as it has less effect on pH which favors phytase activity.

Dosage and application:

The earlier dosage of Phytase when introduced in the market was 500ftu/kg of feed which is also referred to as a single dose and mainly Phosphorus matrix was considered and release of 0.10%. Available Phosphorus which equates to 5-6 kg of Dicalcium Phosphate but now a dosage of 1000 FTU/kg of feed (Double dose) is commonly followed and release of 0.16 to 0.18% of Available Phosphorus which can replace up to 10kg of DCP. At present, the concept of Super dosing /Supra dosing has been advocated in which 2000 FTU/kg of feed which requires 400g of Phytase (5000 FTU/g) to bring de-phytinase effect which breakdown almost 100% of Phytate P in the ration to have other benefits which improve performance by overcoming the negative effects of Phytate. The other benefits include reduced mucin production, improved AA digestibility, and improvement of Net Energy as a result of improved Net Energy (Productive Energy) indirectly by better Gut health. The beneficial sparing effect is attributed mainly to overcoming negative effects of Phytate in terms of gastric irritation-in turn excess Mucin production.

Feed Processing conditions:

The use of pellet feeding to broilers has become a common practice in the last few years and their

advantages of improved voluntary feed intake and early weight gains are well known. However, the selection of Phytase has to be done carefully based on thermostability and recovery after pelleting for the enzyme activity. Also, the form of Phytase offered also as a homogeneous distribution of enzymes is a must for better enzyme activity and broiler performance. Phytase as a part of premix can overcome major problems of poor mixability issues. At present, we have the advantage of using 3rd new generation phytases which are intrinsically thermostable, and better activity levels are observed even after pelleting the feeds.

Application and Benefits of Phytase in Broiler diets:

- Using double dose of Phytase (1000 FTU/Kg of feed) is considered as the most cost-effective dosage as observed by nutritionists.
- Can Release 0.17 to 0.18% Av P without any doubt in vegetarian based diets and exercise caution whenever animal proteins are used.
- As Phytate is a strong chelator of Calcium, significant amounts calcium is also released along with Phosphorus almost to the tune of Phosphorus levels-up to 0.2%. This needs to be considered critically while formulating the broiler rations.
- Zinc will be available up to 20 ppm.
- Potassium is available by 0.04%.
- Sparing effect on sodium by improving the availability and reducing the secretion of NaHCO_3 and it will be more available by 0.03%.
- AA acid availability increased by 2-4% due to reduced mucin production and reduced endogenous losses and practical Energy increment of 50kcal/kg can be considered although some trials had shown improvement of ME by 86kcal/kg.

Conclusions:

Phytase enzyme has been well accepted, most extensively used by all the nutritionists/producers in Broiler feeding and it has occupied as one of the main ingredients in Broiler diets. The new 3rd generation Phytases is robust and aggressive Phytate removers and we can take the advantage of "Extra Phosphoric effect" in reducing feed costs as well as for improving Broiler performance. The growth promoting effect of Phytase also attributed to release of Inositol which is around 30%, while releasing Phosphorus which has beneficial effect on fat metabolism and it is also works as antioxidant at cellular level.

Coming to the practical application of Phytase while formulating the diets, one need to be careful in applying matrix values especially as claimed by the companies whose as they have been derived from one or two trials under standard conditions and cannot be compared to field conditions where they will have more challenges. Better to go with the companies who are having better data from multiple trials which will be robust and will have less variation. Matrix values cannot be same for all the classes of poultry say and will differ with Broilers, Layers, Breeders etc.

Although our understanding of Phytase is clearer now, more research trials and studies is required to know the effect of super dosing (de-phytinase effect) as claimed by Phytase manufacturers. There is need to validate the phytase effect on optimal requirements of Ca, P and other trace minerals as majority of the studies were conducted during non-Phytase era. Also, the effect of Phytase when used with multiple enzymes such as NSP enzymes and Proteases need to be studied, whether benefits are synergistic or additive. Also, with new production programs such as Antibiotic free rearing the scope of Phytase will continue to exist.

THE MOST RELIABLE PHYTASE



SUPERtase™

The Most Reliable Phytase-Forget the Rest.

- Next generation bacterial phytase-Buttiauxella Species.
- Most reliable matrix values.
- Improved phosphorous, energy and amino acid availability.
- Faster and efficacious breakdown of Ip6.
- Most active in the acidic environment of proventriculus and gizzard



VENKATESHWARA B.V. BIOCORP PRIVATE LIMITED

(An ISO 9001:2015, OHSAS 18001:2007 & GMP Certified Company)

Venkateshwara House*, S. No. 114/A/2, Pune-Sinhagad Road, Pune-411030

Tel.: (020) 24251803, Fax: +91-20-24251060/24251077, Website: www.venkateshwarabybiocorp.com



IMPROVED EMULSIFICATION CONTRIBUTES TO PIGMENTATION



One of the most important parameters affecting consumer's choice is the appearance of animal products. To improve consumer's acceptance of eggs and broiler meat, pigments are supplemented to broiler and layer feed. This is to complement the low natural levels available in feed ingredients. Unfortunately, these supplemented pigments can be expensive and their absorption suboptimal. Also, recent EU legislation will come into force later this year reducing the maximum allowed inclusion of these compounds. Luckily, their fat-solubility provides an opportunity. Nutritional emulsifiers are feed additives able to increase fat digestibility, both significantly and economically. Whilst improving the energy uptake and metabolization, the activity of a nutritional emulsifier also increases, indirectly, the uptake of these fat-soluble pigments. It is worthwhile investigating this effect of nutritional emulsifiers in more detail.

Mode of action

An emulsifier is a molecule with a water-soluble (hydrophilic) part and a fat-soluble (lipophilic) part. The combination of these two components in one molecule gives it a unique property. The emulsifier can dissolve in fat as well as in water and can aid in mixing these two factions. In the animal, fat digestion occurs in a few steps (Figure 1). Initially, large fat globules are emulsified in the watery environment of the gut. Normally,

fat and water do not mix, and therefore, bile salts assist in this mixing process as natural emulsifiers. Smaller fat droplets are formed and increase the contact surface for the lipase enzyme. This enzyme, produced by the pancreas, breaks down fat. The next step is the formation of micelles. Micelles are water-soluble aggregates of lipid molecules (e.g. carotenoids) containing both polar and non-polar groups. When micelles come into contact with the micro villous membrane, they are disrupted and the fatty acids are absorbed by the lipophilic cell membrane. Bile salts and monoglycerides aid as natural emulsifiers in the formation of micelles. Nevertheless, the capacity of these natural emulsifiers can be a limiting factor for fat digestion. Nutritional emulsifiers can therefore assist in improving fat digestibility and energy efficiency. Results show that a nutritional emulsifier is able to increase crude fat digestibility by 2.81% on average. Its positive effect will be more pronounced at higher fat levels. Even with highly digestible fats (e.g. soybean oil) significant effects are shown.

Figure 1: Fat digestion in 3 steps: (1) formation of small emulsion droplets, (2) hydrolysis by lipase, and (3) formation of micelles and uptake in epithelial cell layer. Emulsifiers (bile salts and nutritional emulsifier feed additive (Orffa Additives BV, The Netherlands)) aid in the fat digestion process



Event by:


pixie expomedia
CREATE • CONNECT • CONQUER



THE  **PULTRY**
EXPO

Exhibiting The Future of Poultry Industry

3-5 August 2023

India Expo Center & Mart,
Greater Noida, Delhi-NCR, India

www.thepoultryexpo.com



For Any Query:

pixie Expo Media Pvt Ltd.

C/O Omang Hotel, Namaste Chowk,
Karnal-132001, Haryana

ZEEBUSINESS

Engormix

**POULTRY
PLANNER**

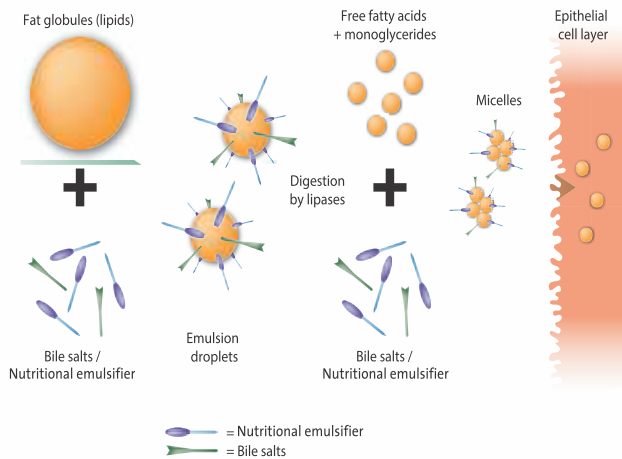
Media Partner

Supported by



☎ **741999 3009 | 999 170 5007**

✉ info@thepoultryexpo.com



Effect on egg yolk

Orffa investigated the effect of a specific nutritional emulsifier (Orffa Additives BV, The Netherlands) in laying hen diets. A corn-based diet without canthaxanthin was used as a control diet. Two dietary treatments with canthaxanthin were formulated, with or without the nutritional emulsifier. After two weeks of adaptation, eggs were collected for one week. Egg yolk was analysed on CIE (Commission Internationale de l'Eclairage) laboratory parameters (Table 1). Lowest L-value (brightness) was obtained when laying hens were fed the nutritional emulsifier supplemented diet. Significantly higher levels for a (redness) and C (saturation) were achieved when the nutritional emulsifier was supplemented. It can be concluded from this trial that combining the nutritional emulsifier with canthaxanthin increased the pigmentation of the egg yolk. Subsequent practical trials in broilers proved the tendency of the nutritional emulsifier to improve skin pigmentation. Based on these findings a patent was granted

Table 1: Effect of a nutritional emulsifier on egg yolk pigmentation ($p < 0.05$)

	Control	Control + Canthaxanthin	Control + Canthaxanthin + Nutritional Emulsifier
L-value (brightness)	64.82a ± 0.28	58.68b ± 0.34	56.81c ± 0.37
a (redness)	10.98c ± 0.20	25.50b ± 0.34	27.32a ± 0.29
b (yellowness)	63.19a ± 0.72	57.20b ± 0.49	61.18a ± 0.63
C (saturation)	64.14b ± 0.73	62.64b ± 0.52	67.01a ± 0.66
Hue angle	80.14a ± 0.15	65.97b ± 0.27	65.92b ± 0.18

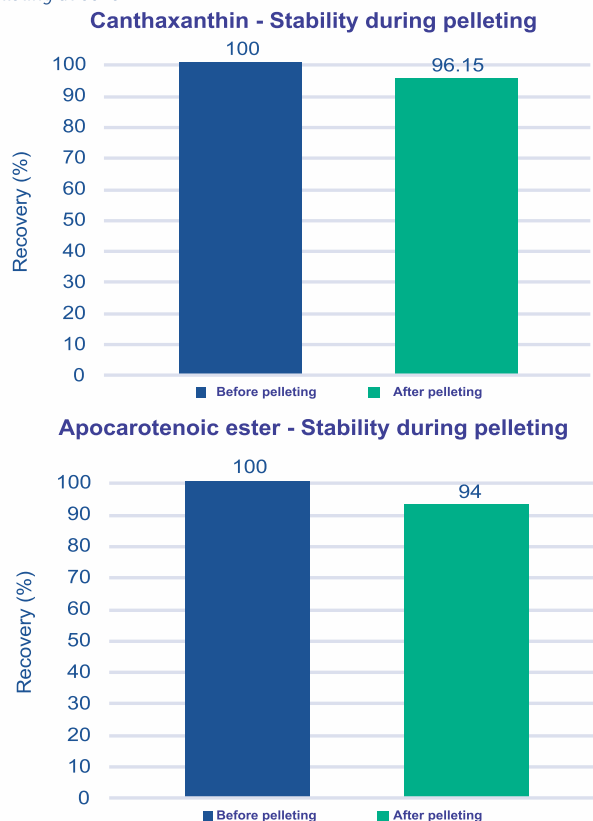
Table 2. Effect Canthaxanthin on egg yolk colour analyzed with the Roche colour fan ($p < 0.001$)

Treatment	Product	Dosage (ppm)	Calculated Roche colour fan
Control			8.2c
2	Canthaxanthin	3.5	13.9a
3	Competitor	3.5	13.0b

Stable and high quality pigments are essential for required coloration

Supplementation of pigments to diets is crucial to obtain consumer's preferred egg yolk and broiler meat colour, as animals cannot synthesize pigments themselves. However, for a controlled and uniform colouring of animal products, a high quality and stable pigment is essential. Natural pigments, like carotenoids, are largely used but have a poor stability and are highly sensitive to oxidants (e.g. oxygen), heat and humidity. The synthesized pigments, 10% canthaxanthin and 10% apocarotenoid ester (Orffa Additives BV, The Netherlands), have a high stability during storage as pure product, in premixes, and after pelleting (Figure 2). The spherical form of the granulates ensures an equal distribution of the pigment within the feed, contributing to a homogeneous mixture. These features of Canthaxanthin and Apocarotenoid ester from Orffa Additives BV enhance bioavailability and assure efficacy of the pigments (Table 2).

Figure 2: Stability of Canthaxanthin and Apocarotenoid ester from Orffa after pelleting at 85°C



Conclusion

Nutritional emulsifiers provide an economically interesting way to improve the pigmentation of animal products. Their efficiency in improving fat digestion enables an increased absorption of fat-soluble pigments and their subsequent deposition in target tissues. Further research should be executed regarding other fat-soluble compounds, such as certain vitamins, and their absorption.



UT GlysoMin **GOLD**



Better Availability Better Performance With Glycinated Trace Minerals



25 Kg Bag

UTTARA IMPEX PVT. LTD.

Feed Supplement Division, Venkateshwara House, Pune.

For trade Enquiry Contact : North India – Mr. Hariom Singh Chauhan / +919552526901,
East India – Mr. Kunal Goswami -/ +918888858839, T.N – Mr. Michaelsamy -/ +918778408835,
Maharashtra – Swapnil Bailal -/ +919689948713, Telangana/ Andhra Pradesh
Orissa – Mr. Shankar Reddy -/ +918008802148

Collaboration with :


Pancosma
makes sense

 **B-TRAXIM**
Fe
Cu
Zn
Mn

Newcastle Disease

(NCD, Ranikhet disease, Doyle disease)



Dr. Arpita Sain^{1*}, Dr. Rohit Juneja², and Deepak Kumar Pankaj³

¹PhD Scholar, Department of Veterinary Microbiology, Indian Veterinary Research Institute, Izatnagar, Bareilly U.P, 243122,

²Veterinary officer at Veterinary Hospital Pundlota, Nagaur, Department of Animal Husbandry Jaipur, Rajasthan, 341503.

³Ph.D Scholar Division of Pathology, ICAR-Indian Veterinary Research Institute, Izatnagar, Izatnagar, Bareilly U.P, 243122

Newcastle disease has been one of the most important diseases of poultry worldwide ever since the advent of high-density, confinement husbandry systems. The disease was first observed in Java in 1926 and in the same year it spread to England, where it was first recognized in Newcastle, hence the name.

Causative agent:- Avian avulavirus 1

On the basis of virulence, the virus strain has been group into different pathotypes:-

1. **Lentogenic stain:-** Low pathogenic. eg. Strain B1, F, LaSota, CDF-66
 2. **Mesogenic stain:-** Moderate pathogenic. eg. Strain R2B (Mukteshwar), Komarov, Raokin
 3. **Viscerotropic:-** Very pathogenic. eg. Strain Hertz 33
 - a. ViscerotropicVologenic stain
 - b. Neurotropic Vologenic stain
- ∅ **Lentogenic strain** causing mild or inapparent respiratory infection. It does not produce disease in adult animals but may produce respiratory disease in young = Hitchner form (Respiratory form)
- ∅ **Mesogenic strain** causing mild disease with mortality confined to young birds. It usually cause respiratory forma and occasionally nervous form = Beaudette form
- ∅ **ViscerotropicVologenic stain** causing severe fatal disease characterized by haemorrhagic intestinal lesion = Doyle form (Asiatic form)
- ∅ **Neurotropic Vologenic stain** causing acute disease characterized by respiratory sign followed by nervous sign with high mortality = Beach form (Pneumoence

phalitis)

Virulence of the strain is tested on the basis of

1. Mean death time (MDT) in embryonated eggs
2. Intracerebral pathogenicity index (ICPI) in one day old chicks
3. Intravenous pathogenicity index (IVPI) in six week old specific pathogen free chickens
4. Plaque formation (PF) test in chick embryo

Transmission of disease:-

In birds that survive, virus is shed in all secretions and excretions for at least 4 weeks. Transmission occurs by direct contact between birds by the airborne route via aerosols and dust particles and via contaminated feed and water. Mechanical spread between flocks is favoured by the relative stability of the virus and its wide host range. With lentogenic strains, transovarial transmission is important, and virus-infected chicks may hatch from virus-containing eggs.

Clinical Features

In chickens, respiratory, circulatory, gastrointestinal, and nervous signs are seen; the particular set of clinical manifestations depends on the age and immune status of the host and on the virulence and tropism of the infecting strain.

The average incubation period is 5 days.

- **Respiratory sign:-** A combination of inspiratory dyspnea (gaspings) and respiratory distress.



Ultimate Solution... *for* Liver Protection



Hepawell™-P

Multiple action and Versatile benefits



- **Intestinal symptoms:-** may include crop dilatation, presence of foamy mucus and fibrinous exudate in the pharynx, a similar discharge from the beak, and yellow-green diarrhea.
- **Nervous symptom:-** Nervous system involvement is indicated by paralysis of wings and/or legs, torticollis, ataxia or circular movements, bobbing-and-weaving movements of the head, and clonic spasms.

There is a loss of appetite, listlessness, abnormal thirst, huddling, weakness, somnolence and cyanosis of comb and wattles. In layers there is a sudden decrease in egg production together with depigmentation and/or loss of shell and reduction in the albumen quality of eggs. The disease in turkeys is similar; there are signs of respiratory and nervous system involvement. Airsacculitis rather than tracheitis is the most common lesion. In ducks and geese most infections are inapparent.

Pathogenesis

Initially the virus replicates in the mucosal epithelium of the upper respiratory and intestinal tracts; shortly after infection, virus spreads via the blood to the spleen and bone marrow, producing a secondary viremia. This leads to infection of other target organs: lung, intestine, and central nervous system. Respiratory distress and dyspnea result from congestion of the lungs and damage to the respiratory center in the brain. Gross pathologic findings include ecchymotichemorrhages in the larynx, trachea, esophagus, and throughout the intestine.

Pathology

- The most prominent histologic lesions are necrotic foci in the intestinal mucosa and the lymphatic

tissue and hyperemic changes in most organs, including the brain.

- Virulent velogenic strains cause predominantly hemorrhagic lesions, in particular at the esophagus/proventriculus and proventriculus/gizzard junctions

and in the posterior half of the duodenum, the jejunum, and ileum. These lesions are virtually pathognomonic for velogenic strains. In severe cases, hemorrhages are also present in subcutaneous tissues, muscles, larynx, tracheal/esophageal tissues, serous membranes, trachea, lungs, airsacs, pericardium, and myocardium. In adult hens, hemorrhages are present in ovarian follicles. Lesions can develop into diphtheroid inflammatory foci and later into necrotic foci.

- In the central nervous system, lesions are those of encephalomyelitis--neuronal necrosis, perivascular cuffing, and interstitial inflammatory infiltration.

Immunity

- Antibody production is rapid. Hemagglutination inhibiting antibody can be detected within 4 to 6 days of infection and persists for at least 2 years. The level of hemagglutinating-inhibiting antibody is a measure of immunity.
- IgG is confined to the circulation and does not prevent respiratory infection, but it does block viremia; locally produced IgA antibodies play an important role in protection in both the respiratory tract and the intestine.

- Maternal antibodies protect chicks for 3 to 4 weeks after hatching.

Laboratory Diagnosis

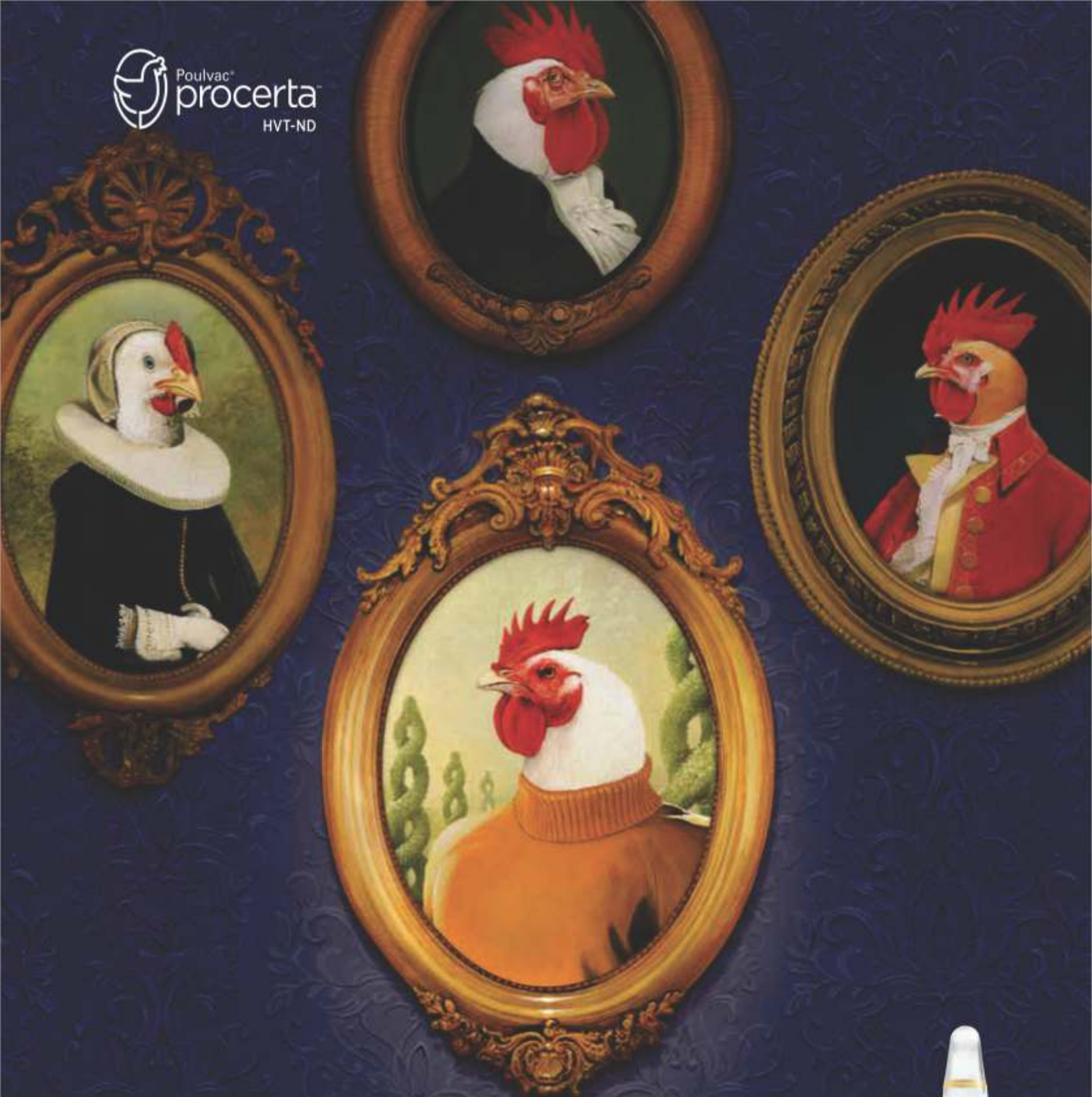
1. **Sample=** Respiratory secretions, trachea, lung, spleen, blood, Brain, cloacal swab, tracheal swab,
2. **Direct identification of virus:-** Electron microscopy
3. **Virus isolation:-**
 - Virus isolation in animals:-in chickens or turkey intranasally or intramuscularly the sample is inoculated.
 - Viral isolation in embryonated eggs:- by allantoic inoculation of 10-day-old embryonated eggs
 - Virus isolation in cell culture:- Primary cell culture of avian origin like chicken embryo fibroblast or kidney cell culture.
4. Direct detection of Viral antigen:- Immunofluorescence on tracheal sections or smears is rapid although less sensitive.
5. Direct identification of viral nucleic acid:- PCR
6. Detection and quantitation of antiviral antibodies: hemagglutination inhibition is the test of choice.

Prevention and Control

Where the disease is endemic, control can be achieved by good hygiene combined with immunization,

Vaccination:- Both live-virus vaccines containing naturally occurring lentogenic virus strains and inactivated virus (injectable oil emulsions) being commonly used. These vaccines are effective and safe, even in chicks, and may be administered via drinking water or by aerosol, eye or nostril droplets, or beak dipping. Laying hens are revaccinated every 4 months. Protection against disease can be expected about a week after vaccination.

Recommenation of vaccine and vaccination schedule		
Age of birds	Type of vaccine	Route of vaccination
1 week	F or B-1 strain	Nostril Drop
4 weeks	B-1 strain	Drinking water or aerosol method
8-9 weeks	R2B Strain	i/m injection
Before egg laying	R2B Strain	i/m injection



MEET THE NEWEST MEMBER OF THE ZOETIS POULTRY LINEAGE

Introducing Poulvac[®] Procerta[™] HVT-ND.

The latest HVT-ND vector designed to protect your flock against Marek's disease and Newcastle disease.

When immune response is **high, trust** and **confidence** are too. Delivered via the Inovoject[®] System, an Embrex[®] Biodevice from Zoetis, this new vector offers competitive onset of immunity against Newcastle disease¹. For details and data please visit Poulvac[®] Procerta[™] com.

¹ Data on file, Study Report No. B615R-US-18-A46, Zoetis Inc. All trademarks are the property of Zoetis Services LLC or a related company or a licensor unless otherwise noted. © 2020 Zoetis Services LLC. All rights reserved.

ZOETIS INDIA LTD : 31, 3RD FLOOR | KALPATRU SYNERGY | OPP. GRAND HYATT, SANTACRUZ (EAST), MUMBAI- 400 055;
OFFICE: 022 66513800; FAX: 022 266513950 | VISIT US: ZOETIS.COM



Jugalbandi (Joint Action) of Enzymes & Probiotics in Feed Digestion & Gut Health

GLOCREST™
Pharmaceutical Pvt. Ltd



Dr. Mahesh Rajurkar
Product & Techno
Commercial Manger



Dr. Ramdas Kambale
CEO & Board Member

Fact is, no one is comfortable to manage the feed cost and in such a scenario, the small and marginal farmers find it more difficult. In fact, everyone finds it difficult. Because of continues fluctuation in market price of ready birds, eggs & feed ingredients, it becomes more challenging. Since one cannot control raw material prices and the market price of our produce, it's extremely important to get utilized penny by penny whatever we use as feed and feed supplements.

Recently soiled eggs (dirty eggs) also becoming a common problem due to alternate raw material usage or other unknown factors.

Therefore, Jugalbandi of enzymes and probiotics become an integral part to utilize the feed and maintain healthy gut & subsequently reducing problem of dirty eggs up to some extent.

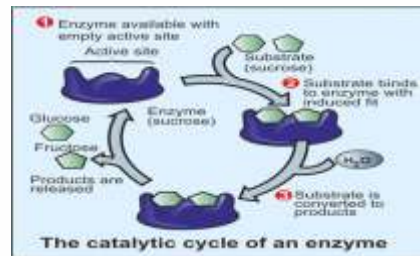
Proper blend of enzymes and unique strains of probiotics is the most required practice to improve performance and feed utilization, gut health, minimized environmental pollution.

Looking into those practical challenges of feed digestions and maintaining proper gut health, GLOCREST introduced tried & tested solution as **EnziProb**

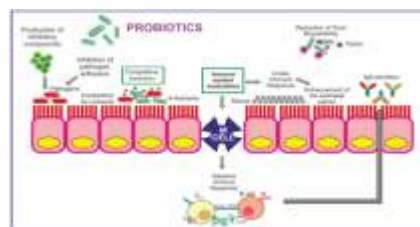
EnziProb It is perfect combination of multi enzymes and multi probiotics. It contains multi enzyme which is a functional protein that stimulates or accelerates the rate of specific chemical reactions.

Enzymes in **EnziProb** are Xylanase, Alpha amylase, cellulase, Protease, Mananase, Lipase, Phytase. These are digestive enzymes which are natural substances needed by body to help break down and digest feed ingredients.

Probiotics in **EnziProb** are Lactobacillus acidophilus, Saccharomyces boulardii, Bacillus subtilis, Bacillus licheniformis, Bacillus megaterium, Bacillus polymyxa. These are different type of bacteria used to improve digestion and restore normal flora.



Role of Enzymes



Role of Probiotics

EnziProb During the transit of digesta in the duodenum, jejunum, and ileum, they remove fermentable substrates that could impact digestibility and impact gut microbial balance. During the caecal phase, degradation products of sugars etc.

Xylanase is becoming an extremely important enzyme as an individual one or in combination with other synergistic enzymes. Xylanase is often used to improve cereal processing.

The complex of cocktail enzymes like Xylanase, Alpha amylase, cellulase, Protease, Mananase, Lipase, Phytase ensures best feed digestion from various feed ingredients being used in the diet.

Probiotics in **EnziProb** used as nutritional tools in poultry feed for promotion of growth, modulation of intestinal microflora and pathogen inhibition, immunomodulation and promoting meat quality of poultry.

EnziProb It seems to be more than just a gut feeling. Probiotics and enzymes have been proven to have a positive effect on the gut health of chickens & improved feed digestion.



A New Revolutionary Animal Health Company Is Born



POULTRY INDIA EXPO, HYD

Please visit our stall at
Stall No Y 26, 27 & 28, Hall No 5
23-24-25 November 2022

GLOCREST™

Pharmaceutical Pvt. Ltd

Innovation For A Better Health

Revolutionizing Animal Nutrition Globally
Through Innovation & Technology.

GLOCREST is combining decades of
experience with unparalleled research
capabilities. Helping you achieve optimal
animal nutrition, feed quality, pathogen
control, pharmaceutical solutions and
more.



ABOUT US

Caring About Life, That Is Our Core Business.
GLOCREST is a global animal health venture of
Krishna Group - prestigious poultry and
agricultural conglomerate. Being an industry
pioneer, GLOCREST & its peers, has more than
half a century of combined expertise in the
development and manufacturing of nutrition
products. Our customers include everyone
from small and large farmers, to integrations
and dealers. We aim to provide them with
nutritional solutions that ensure maximum
animal health and performance.

Vitomix
FEEDER

TOXK/L

Chelomix

CocciCare

EnziProb

GLOPROMIN

GLOZOL Plus

GROX

HepoCare
HEPATOPROTECTANT

Feedacid

GALOTONIC

GLOCREST™
Pharmaceutical Pvt. Ltd

 **Off.:** 2018, Solus Hiranandani Business Park,
Hiranandani Estate, Thane (W) - 400 607.
Maharashtra, India.

 www.glocrestpharma.com
 +91 22-46007565
 info@glocrestpharma.com

Probiotics and Early Microbiota



Wouter van Der Veken, Global Product Manager Probiotics, Huvepharma

The relationship between a healthy gut, the animal's microbiota and optimum performance is undeniable. Especially in the early stages, the microbiota can heavily impact the final outcome of the production process. As such, it is important to manage and support the animal's gut health as early as possible. Probiotics – beneficial microorganisms that are incorporated into the feed or drinking water with the goal of delivering a health benefit to the host – are a good example of an efficient management tool to do so.

It is no longer surprising that the preferred probiotic of choice should be a stable spore former with a proven and researched mode of action. Spore forming bacteria ensure product stability, as spores are robust and able to withstand environmental influences. These include, but are not limited to, high temperatures during feed processing, different pH values within the animal itself, as well as fluctuating storage conditions. Spore formers thus enhance ease of use, while ensuring product efficacy. A good example is B-Act which contains viable spores of

Bacillus licheniformis (DSM 28710). This probiotic strain supports the birds' gut microflora both directly and indirectly, as its mode of action is diverse. First of all, the unique strain is part of the wider *Bacillus* genus and, as such, is a strong contender for nutrients and space relative to unwanted bacteria (competitive exclusion). Secondly, *B. licheniformis* DSM 28710 is capable of producing potent bio active substances aimed at pathogen control. *Clostridium perfringens* in particular, the key pathogen in production diseases such as necrotic enteritis (NE) and dysbacteriosis, can be actively and efficiently controlled with B-Act.

Proven efficacy

The described mode of action and effects has been extensively researched. A recent study showed that *B. licheniformis* DSM 28710 exerts a strong inhibitory effect on nine *C. perfringens* strains that were isolated from NE outbreaks on commercial farms. The importance of the early microbiota cannot be underestimated in



mitigating such NE outbreaks, even though these outbreaks may occur at a later stage.

Ensuring a healthy microbiota from the start, and maintaining it, decreases the opportunity for *C. perfringens* to take hold and proliferate in the next stages of production. General gut health and the related microbiota further drive performance. Laying the proper groundwork as early as possible thus equals a good start for the animal, setting it up for a high-yielding production period.

Early application

To support the idea of influencing the microbiota as early as possible, the first question that needs to be answered is: how can a probiotic be used in these early stages? To put this to the test, B-Act was applied in newly-hatched chicks by gel spraying, followed by faecal spore content analysis. The trial used 160 day-old Ross broilers that were sprayed with a coloured gel solution containing the probiotic.

Faecal samples were collected at two time intervals (5 and 10 hours after spraying) and analysed for the presence of probiotic *B. licheniformis* DSM 28710.

All faecal samples had a blue-green colour due to the colouring agent in the gel, indicating that the gel had been ingested properly. CFU results at both time intervals showed that the birds ingested considerable amounts of probiotic B-Act via the gel, thus confirming that the probiotic can be applied via gel spraying to supplement animals from an early age. The study confirmed that probiotic supplementation is possible even before the first feed is introduced. As such, B-Act allows producers to support their birds as early as possible, setting them up for a successful production period, from start to finish. The *Bacillus licheniformis* (DSM 28710) probiotic strain supports the birds' gut microflora both directly and indirectly, as its mode of action is diverse.

To know more, please contact Huvepharma technical team

Huvepharma SEA (Pune) Pvt. Ltd.

42, 'Haridwar', Road 2 A/B, Kalyani Nagar, Pune 411006 Customer Care Contact: +91 20 2665 4193
Email: salesindia@huvepharma.com | Website: www.huvepharma.com

Animal Feed Supplement



B-Act[®]

Targeted protection



Huvepharma[™] proudly announces its
new probiotic

Huvepharma N.V.
Uitbreidingstraat 80 • 2600 Antwerp • Belgium
P +32 3 288 1849 • F +32 3 289 7845
customerservice@huvepharma.com



HUVEPHARMA
www.huvepharma.com

Huvepharma SEA (Pune) Pvt. Ltd.
42, 'Haridwar', Road 2 A/B
Kalyani Nagar, Pune 411006, India
P +91 20 2665 4193 F +91 20 2665 5973
salesindia@huvepharma.com

Effective Phytomolecules Combine Superior Processing Stability and Strong Action in The Animal

ew | nutrition 

For millennia, plants have been used for medicinal purposes in human and veterinary medicine and as spices in the kitchen. Since the ban of antibiotic growth promoters in 2006 by the European Union, they also came into focus in animal nutrition. Due to their digestive, antimicrobial, and gut health-promoting characteristics, they seemed an ideal alternative to compensate for the reduced use of antibiotics in critical periods such as brooding, feed change or gut-related stress.

To optimize the benefits of phytomolecules, it is crucial that

- the phytomolecules levels are standardized for consistent results and synergy
- they show the highest stability during stringent feed processing; being often highly volatile substances, they should not get lost at high temperatures and pressure
- the phytomolecules are preferably completely released and available in the animal to achieve the best effectiveness.

First step: Standardized phytomolecules

Essential oils and other phytogenics are sourced from plants. The composition of the plants substantially depends on genetic dissimilarity within accessions, plant origin, the site conditions, such as weather, soil, community, and harvest time, but also sample drying, storage, and extraction processes (Sadeh et al., 2019; Yang et al., 2018; Ehrlinger, 2007).

For example, the oil extracted from thyme can contain between 22 and 71 % of the relevant phenol thymol (Soković et al., 2009; Shabnum and Wagay, 2011; Kowalczyk et al., 2020).

Modern technology enables the production of standardized phytomolecules with the highest degree of purity and lowest possible batch-to-batch variation for high-quality products. It also offers increased environmental and economic sustainability due to reliable and cost-effective sourcing technology.

Using such highly standardized phytomolecules enables the production of phyto-genic-based feed supplements of consistently high quality.

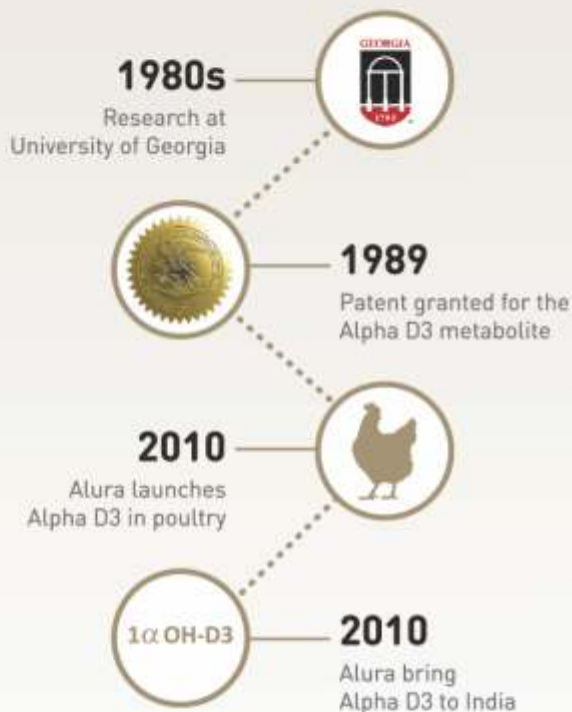
Second step: Selection of the most suitable phytomolecules

Phytomolecules have different primary characteristics. Some support digestion (Cho et al., 2006, Oetting, 2006; Hernandez, 2004); others act against pathogens (Sienkiewicz et al., 2013; Smith-Palmer et al., 1998; Özer et al., 2007) or are antioxidants (Wei and Shibamoto, 2007; Cuppett and Hall, 1998). To optimize gut health in animal production, one of the main promising mechanisms is reducing pathogens while promoting beneficial microbes. The decrease of pathogens in the gut not only decreases the risk of enteritis incidence but also eliminates the inconvenient competitors for feed.

In order to find out the best combination serving the intended purpose, a high



THE ORIGINAL ALPHA D3



Revolutionising poultry performance since 1989

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

WHAT MAKES ALURA ALPHA D3 UNIQUE?

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

USAGE



LAYER



BROILER



BREEDER



EXTENSIVELY TESTED & VALIDATED

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

number of different phytochemicals need to be evaluated concerning their structure, chemical properties, and biological activities first. Availability and costs of the substances are further factors to consider. With the selection of the most suitable phytochemicals, different mixtures are produced and tested for their effectiveness. Here, it is essential to concern synergistic or antagonistic effects.

For an effective and efficient blend of phytochemicals, many steps of selection and tests are necessary – and as a result, possibly only a few mixtures can meet the requirements.

Third step: Protecting the ingredients

Many phytochemicals are inherently highly volatile. So, only having a standardized content of phytochemicals in the product can not ensure the full availability of phytochemicals when used through animal feed. Some parts of the ingredients might already get lost in the feed mill due to the stringent feed hygienization process followed by feed millers to reduce pathogenic load. The heating is a significant challenge for the highly-volatile components in a phytochemical-based product. So, protecting these phytochemicals becomes imperative to guarantee that the phytochemicals put into the feed will reach the animal.

A delicate balancing act is required to ensure the availability and activity of phytochemicals at the right site in the gut. The phytochemicals must not get lost during feed processing but must also be released in the intestine. A carrier with capillary binding of the phytochemicals together with a protective coating can be one of the available effective solutions. It protects the ingredients during feed processing, but the digestive tract's pH and enzymes open the coating, and the phytochemicals would be available for an activity at the right site.

Study shows excellent stability of Ventar D under challenging conditions

Ventar D is a latest generation phytochemical-based solution for gut health optimization introduced by EW Nutrition, GmbH. A scientific study was conducted to compare the stability of Ventar D, in the pelleting process, with

two leading phytochemicals competitor feed supplements.

For this trial, feed with the different added phytochemical feed supplements had to undergo a conditioning and pelletization process. The active ingredients were analyzed before and after the pelletization process. All phytochemical feed supplements under testing were added to standard broiler feed at the producer's recommended inclusion rate. The tests took place under conditioning times of 45, 90, and 180 seconds and pelleting temperatures of 70, 80, and 90°C (158, 176, and 194°F). After cooling, triplicate samples were collected and analyzed. The respective marker substance was analyzed through gas chromatography/mass spectrometry (GC/MS) analysis to measure the recovery rate in the finished feed.

The phytochemical content of the mash feed (before pelletization) found by the laboratory was used as a baseline and set to 100% recovery. The recovery rates of the pelleted feed were evaluated relative to this baseline.

The results are presented in figure 1. Ventar D showed the highest stability of active ingredients with recovery rates of 90% at 70°C/45 sec. or 80°C/90 sec and 84% at 90°C/180 sec. The modern production technology used for Ventar D ensures that the active ingredients are well protected throughout the pelletization process.

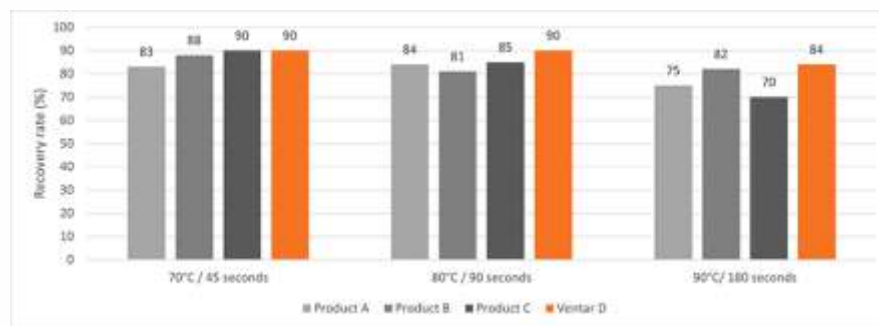


Figure 1: Phytochemical stability under processing conditions, relative to mash baseline (100%)

Another trial was conducted in a feed mill in the US. For this trial, ten samples were collected from different batches of mash feed where Ventar D was added at 110g/t. Conditioning of the mash feed was at 87.8°C (190°F) for 6 minutes and 45 seconds. After the pelleting process,

ten samples from the pelleted feed were collected from the continuous flow with a 5 min gap between the samplings to determine Ventar D's recovery.

The average recovery achieved for Ventar D was 92%.

Trials show improved growth performance Initial trials showed Ventar D's complete release in digestion models. To examine the benefit in in-vivo conditions, Ventar D was tested in broilers at an inclusion rate of 100 g/MT.

Several in vitro studies proved the antimicrobial activity of Ventar D. One test also confirms that Ventar D could exhibit differential antimicrobial activity by having stronger activity against common enteropathogenic bacteria while sparing the beneficial ones (Heinzl, 2022). Moreover, Ventar D's antioxidant and anti-inflammatory activity support better gut barrier functioning. Better gut health leads to higher growth performance and improved feed conversion, which could be demonstrated in several trials with broilers (figures 2 and 3). In the tests, a group fed Ventar D was compared to either a control group with no such feed supplement or groups supplied with competitor products at the recommended inclusion rates.

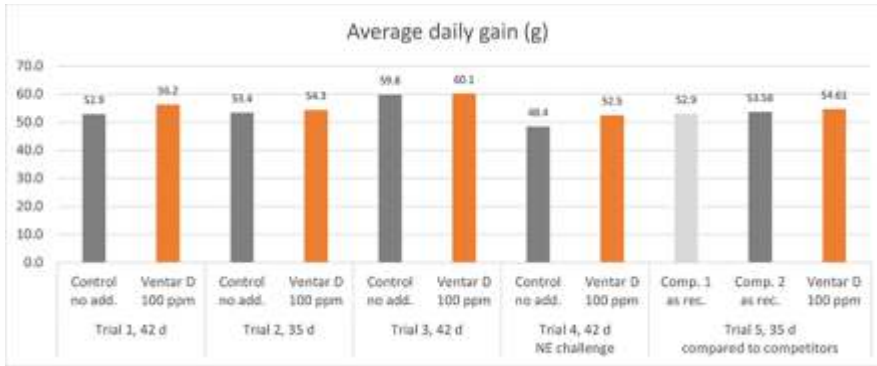
Compared to a negative control group, the Ventar D group consistently showed a higher average daily gain of 0.3-4.1 g (0.5-8.5 %) and a 3-4 points better feed

conversion. Compared to competitor products, Ventar D provided 1-1.7 g (2-3 %) higher average daily gain and a 3 points better /1 point higher FCR than competitors 2 and 1.

Standardization and new technologies for higher profitability

Several in vitro and in vivo studies proved that Ventar D takes "phytochemicals' power" to the next level:

Figure 2: Average daily gain (g) – results of several trials conducted with broilers



Combining standardized phytomolecules and optimal active ingredient protection leads to superior product

stability during feed processing. The higher amount of active ingredients arriving in the gut improves gut health and increases the production performance of the animals. Ventar D shows how we can use

phytomolecules more effectively and benefit from higher farm profitability.

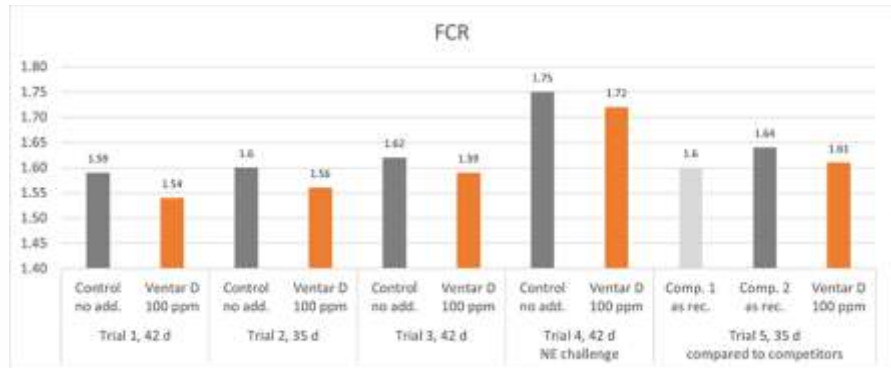


Figure 3: FCR – results of several trials conducted with broilers

Standardization and new technologies for higher profitability

Several in vitro and in vivo studies proved that Ventar D takes “phytomolecules’ power” to the next level: Combining standardized phytomolecules and optimal active ingredient protection leads to superior product stability during feed processing. The higher amount of active ingredients arriving in the gut improves gut health and increases the production performance of the animals. Ventar D shows how we can use

phytomolecules more effectively and benefit from higher farm profitability.



M/s Patel Feeders

Address: Shanti Nagar, Shahjuri, Bargi Nagar, Jabalpur (M.P.)

For Any Query:

9009992690 | 6264191839



Dr Shilpi Dhall
 Director
 Adlife Nutraceuticals
www.adlifenutraceuticals.co.in
 8950211440

Eradication of Microbes and Parasites with Immunomodulatory Actions; A Herbal Approach

Among the livestock sectors poultry production systems are the most intensively reared with developments especially in the areas of nutrition, disease control, genetic improvement, management and organization of dietary requirements along with the pressure of increasing demand for poultry products as well as threats of emerging pathogens so this sector is badly in need of sustainable therapeutic and production aids especially based on herbs. Many herbs have been recorded fruitfully used by veterinarians to treat a variety of disease conditions in animals. The present study on ADLIFE NUTRACEUTICALS discusses the various useful and practical application of the rich heritage of herbal wealth for safeguarding poultry health in general, combating infectious as well as non – infectious diseases caused by microbes and parasites along with immunomodulatory actions for countering immunosuppressive diseases. Moreover highlighting herbs based poultry growth promoters for increasing production performances use of herbs as antioxidants and their role in organic egg and meat production is a special attraction of the review that will draw the attention of the poultry specialists as well as farming communication. The information will be useful to increase poultry production and protect the health of birds in a better way from traditional ways towards modern perspectives and also would promote and popularize usage of herbs amongst poultry producers people around the world are now aware of the limitations of synthetic drugs and

chemicals in terms of higher cost, anticipated toxicity and adverse effects.

Around 4 billion people around the world use Organic Medicine for their needs. These medicines are prepared and handled using Organic means. In Organic production there is no use of chemicals during the entire production, processing and preservation processes. No chemical pesticides, fertilizers or preservative are used for making these organic medicines or their ingredients. These are produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality for future generations. Organic farming enhances ecological harmony by

- Promoting biodiversity biological cycles and soil enrichment.
- Utilizing methods that minimize pollution from air, soil and water.
- Optimizing the health of soil, plant, animals and people.

The practice of using herbal medicines based therapy is now a days gaining more attention worldwide in both human and animal care system.

Adimmone

Adimmone is a combination of herbs and ethno – veterinary medicine having multiple beneficial advantages have been used since long for strengthening body and its immune system and to keep away or fight against disease over the past few years , vigorous emphasis has been made for enhancing the growth and production performances in the poultry industry which badly



resulted in an adverse effect on the immunological parameters of poultry thereby damaging the natural defensive mechanism against various micro organisms including viruses, bacteria, pathogenic fungi, ecto and endoparasites and various toxins etc. due to development of antibiotic resistance by the bacteria and pathogenic microbes researchers are now thinking towards immunomodulation. Now a days immune based therapies are gaining more importance than monovalent approaches which are having limited benefits. A part from the action like treating diseases, control of ecto and endo parasites, fertility enhancement ADIMMONE also fights against several diseases. Various benefits of Adimmone are as follows;

- Highly concentrate multipurpose herbal feed supplement for immunomodulation.
- No effect of seasonal variation.
- Better adaptation of birds to stress there by minimizing associated losses.
- Increases Non-specific immune response for overall protection against various infections agents.
- Antioxidants, antibacterial, growth stimulator
- More eggs in layers.
- Higher weight gain broilers.

Dilacox

Due to vast usage of sulphanilamide, ionophorous antibiotic amprolium or synthetic chemical compounds for the treatment of Coccidiosis in poultry results in emergence of drug resistant stains and antibiotic residues in poultry meat posing serious problems to the meat consumers. To overcome this major threat, safe alternative anti – coccidial herbs is required which can only be fulfilled by the usage of DILACOX.

Symptoms of coccidiosis

1. Passing blood in their poo.
2. Drop in egg production
3. Droopy, hunched, withdrawn chickens with ruffled feather.
4. Not feeding or drinking.

Cause

1. Coccidiosis is caused by a parasite coccidia found in contaminated ground and damp litter. It can be transferred on contaminated boots, clothing, feed sacks, insects and rodents.
2. Poultry are exposed to the parasite via their droppings, dirty drinkers and damp litter in their housing. Wet areas around drinkers are particular areas of infection.
3. Coccidian can also be found in water that is not kept clean and free of chicken droppings.
4. Young birds and chicks of all kinds are most prone to infection and will quickly die if not treated.
5. Overcrowding and intensive rearing of chickens leads to infection passing quickly throughout the flock.
6. Infections parasites can live in housing that was previously contaminated for a number of month and so will infect new birds when they are introduced.

Prevention

The disease has a high mortality rate in baby chicks and mortality usually occurs within a week of first seeing symptoms, so fast treatment is a must. Even if a chick survives, permanent intestinal tissue damage often occurs. Since a chickens Immune System is centered in the intestine, survivors could have compromised immune system for life this is why prevention is so important.

1. Keep your litter dry, coccidia proliferate in wet conditions. Stir it weekly and remove any matted or caked litter soon after it forms.
2. Remove and replace any bedding that is wet.
3. Do not feed chickens feed that contains wheat.
4. Isolate and keep warm any sick chickens so they cannot contaminate others.
5. Add probiotic (MOLPRO) powder to their daily feed.
6. Keep all equipments clean, especially feeders and drinkers.

7. Proper ventilation is absolutely necessary to avoid damp litter conditions.

Cure

Coccidiosis is somewhat hard to cure and if you do have and outbreak it is important to take action quickly. Hens that do survive will not thrive and may eventually die. The only cure is to administer an anticoccidial drug and a combination of natural medicine. Coccidiosis can strike any time after the chicks reach 2 weeks of age. Don't wait for all the birds in the house to show symptoms before giving a treatment. At the first signs of this disease get an appropriate drug from your veterinarian.

Despite your best preventive measures, if you do notice any symptoms, collect a fecal sample coccidiosis can be detected or confirmed by a quick test if diagnosis is confirmed, use only natural methods . Try to use organic herbal products as much as possible to avoid any side effects caused due to antibiotics. Our natural herbs are the complete solution for all the problems or diseases occurred in poultry especially for the treatment of coccidiosis. Use organic herbal products naming DILACOX. This is the only organic herbal treatment and prevention. Since ancient times, plant and plant parts have an indispensable source of medicine for indigenous poultry production system. Although modern medical science has developed to a great extend but still farmer depends on plant parts and herbal remedies for indigenous poultry health management. Unfortunately, local medical traditions are being lost because they are communicated orally from generation to generation and are largely undocumented. Very little has been done to verify and validate information gathered. This unique product naming DILACOX is based on traditional preparation with the objective of curing coccidiosis for poultry health management both in small scale and large scale poultry production system. This Herbal and organic treatment should be followed strictly for best results in treatment of coccidiosis.

Poultry Housing Environmental Control

Introduction

Genetics and nutritional improvements in broiler and layer production have been extremely important to the efficiency of poultry meat and egg production; however, the full genetic potential of broilers and layers cannot be reached unless the proper environment is maintained in the house. The fast growing, modern broiler lines and high egg producing layer lines are more dependent on proper environmental conditions than birds from lines raised just a few years ago.

Design

Broiler houses should be constructed

with wood or steel trusses and supports. The houses are clear span structures from side wall to side wall. The trusses are engineered to support the weight of the roof without the need of support posts that make it harder to catch birds and clean out the house. The floor is typically compacted dirt that is covered with bedding material (woodshavings, peanut hulls, rice hulls, sand, etc.). House dimensions are usually 40-50 ft wide, 400- 600 ft long with 8 ft high sidewalls.

Dropped Ceilings:

To improve ventilation and reduce heating costs, most houses now have dropped ceilings. Dropped ceilings protect the trusses and ceiling insulation



¹M. K. Singh, ²Jinu Manoj, ³D.K. Singh,

⁴Amit Kumar and ⁵Ahmad Fahim

^{1,5}Assistant Professor, ²Professor and Head, ³Professor, Department of Livestock Production Management, College of Veterinary and Animal Sciences, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, U.P., ²ADIO, Central Laboratory, LUVAS, Hisar, Haryana
Email: drmanoj611@gmail.com



Poultry houses



Climate control system (IPT technology)



by acting as a vapor barrier. Dropped ceilings reduce the ceiling surface area and allows for the installation of ceiling insulation to reduce heat gain in during hot weather and heat loss during cold weather. Modern houses are well insulated with blown in cellulose or fiber glass batt insulation to reduce heat gain in the summer and heat loss in the winter. Insulation values of at least R-21 and R-7 are recommended in the ceiling and walls, respectively.

Solid Side Walls:

Most houses are constructed with solid side walls rather than having open sides with curtains. This provides better insulation, reduces air leaks, provides better light control and allows the house to be heated more efficiently. The use of solid side walls provides a smooth surface compared to open sides walls with posts. This improves air speed during tunnel ventilation that will increase the cooling of birds next to the wall. Another trend in new construction is the building of larger houses. Houses as large as 70 x 600 ft have been constructed. If these houses prove to be cost effective, it is likely that most new houses will be constructed to larger dimensions in the future.



Radiant brooding system



Pancake brooder



Forced air furnace



Radiant tube heater

Heating

Maintaining proper temperature to promote efficient growth is key to profitable production. Thus, heating a house is extremely important from both a performance and economic standpoint. Chicks are not able to completely maintain their body temperature until approximately 14 days of age. During this time, it is crucial that floor temperature be maintained between 85-90 degrees F with minimum variation. The primary fuels used in heatinghouses are propane or natural gas. Heating systems include radiant brooders, pancake brooders, forced air furnaces and radiant tube heaters. Brooders and tube heaters project heat onto the floor. The hot air furnaces heat the air, which then heats the floor.

Hot air is lighter than cold air. This can result in stratification with the air being warmer at the ceiling than at the floor. Circulation fans are often used to move hot air from the ceiling down to the floor. Using circulation fans to mix the warm and cool air can result in as much as 30 percent fuel savings and may improve litter conditions as the warmer air on the floor helps dry litter. Paddle fans can also be used to mix air, but be careful to ensure that the chicks are not exposed to drafts.

Ventilation

Ventilation delivers fresh air and removes excess heat, moisture and undesirable gases from the house. A typical ventilation system in a house consists of fans, air inlets, evaporative cooling system and controller/thermostats. Houses are designed to deal with both cold and hot weather extremes.

Cold Weather Ventilation:

During cold weather, negative pressure ventilation is used to provide fresh air, remove moisture and minimize heat loss. Fans exhaust air out of the house creating a slight negative pressure inside

the house. Fresh air is pulled into the house due to the negative pressure and enters through planned air inlets that are installed either high on the house side wall or in the ceiling. These inlets are designed to direct air across the ceiling allowing it to mix with warmer air located there and to heatup before coming into contact with the birds.

Newer houses use computer controllers to determine when the fans operate and for how long. The combination of controller and air inlets allows control of how much air enters the house and where it will enter and allows good air quality to be maintained while minimizing heating costs.

Hot Weather Ventilation:

During hot weather "tunnel ventilation" is used to keep birds cool. Tunnel ventilation systems consist of fans at one end of the broiler house and large air inlets at the opposite end. The fans pull air the length of the house at a velocity of 500 feet per minute. Tunnel ventilation removes heat from the building rapidly and creates a wind chill that provides additional cooling for the birds.



Recirculating evaporative cooling

When tunnel ventilation alone is not sufficient to cool the house, the evaporative cooling system is activated. Energy in the form of heat is used to evaporate water lowering the air temperature. Originally, evaporative cooling was accomplished using fogging systems located inside the house. The fogging nozzles provided a fine mist of water that evaporated, thus lowering the air temperature. Occasionally there were situations when this system was not used correctly. As a result, the air sometimes became saturated and all of the water did

not evaporate, which led to wet litter problems. This problem was corrected by moving the evaporative cooling system outside of the house. Fogging systems were placed on the end of the house where the air enters. The fogging nozzles sprayed a fine mist of water onto fluted/perforated pads. The air was drawn through the pads where water was evaporated and the air temperature was reduced. This system also water being wasted as it dripped off the pads. Recirculating evaporative cooling systems have become popular as a solution to this problem and is the primary evaporative cooling system being installed currently. With this system, water runs through a perforated pipe at the top of the cool cell pads. Water runs down and through the pad soaking it. Any water that is not evaporated is caught in a trough at the bottom of the pad that delivers the unused water back to a reservoir to be pumped through the system again. Depending on environmental conditions (temperature, humidity), incoming air temperature can be lowered 10 degrees or more.

Controlling House Environment

Almost all modern broiler houses rely upon electronic controllers. Through the use of controllers, it is possible to keep house temperatures within five degrees of the desired temperature regardless of outside temperature. This makes it possible to keep the birds comfortable so they are not diverting energy from growth to stay warm or cool. The controller monitors house environmental conditions and adjusts the heating, ventilation and cooling equipment as necessary to keep temperatures constant. Today, controllers can monitor temperature in six or more locations throughout the house. Humidity can also be monitored, although adjustments to heaters and fans are usually done on a temperature basis. As the house temperature fluctuates, the controller will turn on the brooders or fans as needed. The controller operates equipment in the house including: brooders, fans, inlet machines, curtain machines, evaporative cooling systems and lights. Many controllers also allow house conditions to be monitored remotely.



Environment controller system

Using a computer and modem, a grower can call into the farm and check the temperature and humidity, as well as, which heaters and fans are operating in all houses. If needed, changes in the environmental settings can be made remotely using the computer.

Alarms and Generators

The importance of the maintaining a comfortable and stress-free environment for the birds cannot be overstated. Modern poultry housing can provide the environment needed to optimize birds performance, but this is entirely dependent on electricity and the proper operation of house equipment. It is difficult for a farm manager to be present 24 hours a day, every day that birds are in the house. Therefore, it is important to have an alarm system installed to let the farm manager know when something goes wrong in the house.

While the system will not correct the problem itself, its main purpose is the get

someone into the house to evaluate and correct the problem. Alarms are used to notify if there is loss of power or if the house internal temperature gets too high or too low in relation to the desired temperature. The alarm system will activate a siren, usually located at the facility, to alert anyone close by and an automatic phone dialer and/or pager to notify the farm manager

while he or she is away from the farm. In the case of power loss, emergency generators are used to operate ventilation, feeding and watering systems to prevent catastrophic losses. The emergency generator should have the capability of automatic power switch-over and be capable of delivering service for extended periods of time to operate the systems mentioned above.

Summary

Research on improving poultry housing is ongoing. Energy costs are becoming more significant to the grower's bottom line and housing construction, equipment and operation will be paramount in helping to make sure the houses are operated as efficiently as possible. As technology and equipment is redesigned and developed, researchers will continue to examine how broiler housing can be heated, cooled, and built in such a way that modern broilers continue to reach their genetic potential using the most economical and efficient methods.





Enhancing the Biosecurity System in Poultry Farming Through Oxidation Chemistry

Biosecurity in poultry is an integrated strategy that incorporates legal and policy frameworks to assess and control risks related to food safety, animal health, and associated environmental issues. In simple terms, biosecurity refers to the methods for maintaining & keeping infectious diseases away from poultry farms or, if we have a disease issue, how we can prevent our neighbours and farms from contracting it. Millions of farmers in India rely on the poultry industry for their livelihood. The demand for poultry meat and eggs has increased dramatically in recent years, which has led to a surge in this industry's production. The emergence of bird's superior strains (broilers achieving the slaughter weight by 35–42 days and layers with longer egg laying periods) has helped poultry farming evolve to higher production. Antimicrobials are now being used more often and indiscriminately in feed as growth enhancers in the drive for maximizing production. This poses a great risk to the existing AMR crisis.

Good management practices and the application of biosecurity measures maintain health of the flock and contributes safer poultry production.

The major component of biosecurity

involves,

- Traffic management- Vehicular & human movement
- Outbreak management- Four 'I' during outbreak (Identify, Isolate, Inform, Improve)
- Flock management that involves cleaning & disinfection

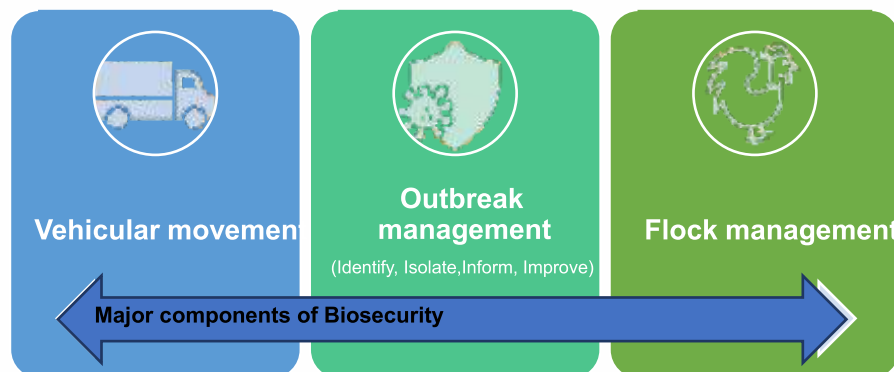
Use of sanitizers and disinfectants should be logical and prudent, begin well in advance during flock replacement, and continue until the flock is marketed. Instead of disinfection application only during an outbreak when pathogen have already penetrated through the birds' system. It is always sensible to practice effective disinfection before any outbreak.

Effective disinfection & sanitisation

We must develop our disinfection strategy effectively because the resistance pattern of microbes varies, with microbial spores being the most resistant in nature and enveloped viruses being the most susceptible (CDC, 2008). The effectiveness of various chemicals for disinfection should also be carefully studied. Alcohols and Quaternary Ammonium Compounds (QAC) are categorised as low-level disinfectants, hypochlorite



Dr. Rajib Upadhyaya
Product Manager- Poultry
Cargill



and iodophors as medium level disinfectants, and specific aldehydes and peroxygen compounds (oxidizers) as high-level disinfectants. (Hygiene protocols for prevention & control of diseases, Govt of Australia).

Meanwhile, detrimental diseases which occurs in poultry due to non-enveloped viruses such as Gumboro's disease, Chicken infectious anaemia, Inclusion body hepatitis & Egg Drop syndrome are associated with resistance to lipophilic agents such as QAC, phenols & biguanides. However certain aldehydes & oxidisers such as oxone (triple salt of potassium) are highly efficient against non-enveloped & other resistant microbes including their spores. (Klein et. al.1995 OIE).

Since, not all disinfectants are effective against serious diseases, diverse disinfectant chemistries that alternately target various microorganisms should be taken into consideration as a bottom line.

In poultry, the present trend is to use a triple salt disinfectant complex for efficiently enhancing the redox potential of drinking water resulting in oxidation of environmental & water borne microbes that includes even viruses & spores. The use of Oxidation-Reduction Potential (ORP) for "real time" water monitoring and recording has various benefits. Hand-held devices are affordable and could be essential back up to cross verify the operation of an in-line probe.

Studies have revealed that bacteria like E. coli are killed within a few seconds at an ORP value of 600 to 650 mV (Table 1). ORP is thus more direct measure of water sanitization than free chlorine.

ORP (mV)	Kill Time
500	1 Hour
550	100 Seconds
600	10 Seconds
650	0 Seconds

Table 1. Amount of contact time needed between an oxidiser & E. coli to kill it

based on ORP Values (Konjoian, 2011)

It is possible to compare different oxidizer products by talking about their oxidation strength in terms of ORP rather than ppm. Instead of evaluating the effectiveness of chlorine dioxide at a particular ppm, chlorine gas at a certain ppm, and peroxide at a specific ppm, ORP permits the comparison of the three treatment modalities on an equal footing. In comparison to chlorine dioxide or chlorine gas, more peroxide based product is required to obtain the same ORP. Poultry farmers now have a far better way to gauge a product's activity based on its ORP than they did in the past by focusing on the product inclusion needed to achieve desired ppm.

For poultry farm disinfection & water sanitisation, a potent triple salt based non-chlorine oxidant called potassium peroxymonosulphate (or Oxone) is extensively used. The various applications include foot baths and vehicle wheel dips, terminal and continuous farm disinfection and water quality improvement. Most commercially available non-chlorine oxidizers include 45% potassium monopersulfate, however blended compositions that may additionally include buffers, surfactants, and/or additives for the control of water borne microorganisms are also available. Potassium monopersulfate needs to be used in conjunction with an EPA-registered sanitizer because it is not a sanitizer. Effective non-chlorine oxidation, or the reaction with organic pollutants that maintains or improves water purity, is the function of monopersulfate. Like comparable chlorine compounds, non-chlorine oxidizers are meant to be used as an additional form of treatment. They offer extra oxidation of contaminants, which lowers the need for the main sanitizer. Since "active oxygen" performs the oxidation process from monopersulfate, it reacts with pollutants without utilising extra

chlorine. (PHTA recreational water committee, 2019)

Oxidising salts such as potassium peroxymonosulphate is an oxidizing disinfectant with quick, broad-spectrum action as it releases chlorine and oxidises, simultaneously. It is cost efficient (low rate of use) and can be used on surfaces and in cold fogging. When it comes to steel and rubber (used in boots and tyres), Oxone has been demonstrated to be more successful than quaternary ammonium compounds (QACs), hence it is favoured for foot baths and car wheel dips (Addie 2022).

Traditional oxidising agents have a major limitation, as they have incomplete dissolution in cold water, which causes clogged high-pressure sprayers and limit the base disinfection activity. In contrast, oxidizer-based disinfectants, which dissolved fully in water before use have effective disinfecting properties (Ministry of Agriculture, Govt. of South Korea, Patent publication no. KR102117677B1). Thus, an oxidising agent that has enhanced solubility & stability should always be preferred to achieve efficient disinfection & sanitisation.

As a conclusion, with alternating chemistry to reduce resistance, use of oxidizing agent is an effective sanitizing treatment. Strong oxidizer products actively seek for electrons to capture when they are put into the water. Living organisms and other organic substances in water provide a rich source of readily available electrons. To survive and function, bacteria and fungi require a specific electrical balance, and when that balance is upset, it results in detrimental effects such as protein denaturation, cell wall and membrane rupture and disruption of life-supporting metabolic pathways etc. In essence, these microbes are killed by oxidation & overall productivity in poultry farm is enhanced.

Collection and Transportation of Specimens for Poultry Disease Diagnosis

The quality of interaction between clinician and microbiologist has an enormous influence on the effectiveness of the laboratory service. An accurate diagnosis is based on interpretation of both clinical and laboratory data. Investigation of disease is solely dependent on the quality and appropriateness of the specimens collected. The diagnosis depends on skill and care with which the clinicians select, collect and transport the specimen to the laboratory. Clinical history, including the tentative diagnosis should always accompany the specimen. If available, a detailed post mortem report must also be sent. These set of information will help the microbiologist to select the most appropriate procedure and to interpretation of the results.

Specimens need to be collected for establishing a disease diagnosis or monitoring of vaccine response or surveillance. The knowledge of pathogenesis of infectious disease is the most important factor for determining most suitable specimen. The samples need to be appropriate, adequate in number and amount to provide a statistically valid result. Samples must be taken with care, to avoid undue stress or damage to the bird or danger to the operator. Careful consideration must be given to the collection, containment, and storage of the specimens, including biosafety measures to prevent spillage to the environment or exposure of other birds and human.

Strict sterile precautions must be observed while collecting and handling materials for isolation. The chance of isolating a microbe depends critically on the knowledge, care, and attention of the veterinarian collecting the

specimen. Specimens taken as a last resort after failed antibiotic therapy is invariably a waste of effort in case of bacterial disease. Having obtained suitable material, it must be carefully packaged, labelled, and transmitted to the laboratory by the fastest practicable method. Relevant shipping regulations must be followed. If material is sent to a laboratory of other country, the laboratory must be consulted in advance about its willingness to receive the material. All samples must be accompanied by a written note indicating the origin of the material, the relevant history and the tests required.

General guidelines for collection of specimens

Laboratory results are directly dependent on mode of collection, preservation and shipment of the specimen. Therefore, the samples are to be collected and handled in a manner that permits a high rate of recovery of the microorganisms present.

- Collect specimens from live sick or recently dead birds. Just prior to death and shortly thereafter, a number of intestinal bacteria may invade the host tissues. Some of the potential pathogens are difficult to assess when tissues have been invaded. Hence, for best results, fresh tissues must be collected as soon as feasible.
- Collect samples as aseptically as possible to avoid cross contamination.
- Collect sample from affected sites as soon as appearance of clinical signs. This is very important in case of viral infections as shedding of the virus is more pronounced during early phase of infection. This holds



Dr. N. P. Radhakrishnan

B.V.Sc., Success Poultry Care, 696-D2,
Anbu Nagar – 1, Namakkal
npradhakrishnan@gmail.com



true for enteric bacterial infection also.

- It is better to collect samples from clinical cases and in-contact birds. The later may shed large numbers of microorganisms.
- While investigating diseases of unknown cause, collect multiple different specimens that represent the different stages of the disease progression (e.g. the pre-clinical, early clinical, active clinical, chronically affected and convalescent phases).
- Collect samples from edge of the lesions and include some normal tissue. Microbial replication is more active at lesion's edge.
- Collect specimens before treatment. Samples taken from treated birds are of little value.
- If the specimens are not collected in time and/or before the start of treatment, the same should be intimated to the laboratory so that the laboratory can opt for other molecular tests than isolation work.
- Specimen should be relevant to the suspected disease. If not, a wide range of tissues should be sent in order to avoid failure of isolation of significant organisms.
- Obtain a tentative diagnosis. If not, collect specimens for several disciplines such as bacteriological, mycological, virological and pathological examination.
- Specimen on dry swab is liable to desiccation and hence more amounts of samples should be taken and sent to the laboratory as soon as possible. If needed, they can be sent in commercial swabs containing transport medium.
- Discuss the unexpected result with the laboratory.
- If a sample shows negative, it may not be considered due to intermittent shedding. Thus repeated sampling may yield actual result.
- Presence of commesal might not be considered unless pathogenic

factors of such isolate are revealed.

- Submit a detailed history of the case along with samples.
- The samples in water-tight, screw capped jars clearly indicating the tissue enclosed, animal identification and the date of collection are preferable.
- Send the samples at 4oC and not frozen, if delay in transportation is expected.

Transportation of clinical materials

Specimens should always be placed in the plastic biohazard transport bag attached to the request form and the bag should be sealed. Multiple specimens should be transported in impervious transport containers (green transport bags) and should not be carried by hand or in plastic or paper bags. Specimens must not be sent in standard envelopes via the internal post. Specimen packaging

It is the responsibility of all persons sending samples to the laboratory to adhere to national and international regulations ensuring that specimens sent to the laboratory do not present a risk to anyone coming in contact with them during transportation or on receipt in the laboratory.

Packaging Clinical materials:

- The packaging must be of good quality, strong enough to withstand the shocks and loadings normally encountered during carriage.
- The packaging must consist of at least three components:
 - A leak proof primary receptacle e.g. blood collection tube, MSU container;
 - A secondary sealable package to enclose and protect the primary container(s), e.g. plastic specimen bag.
 - Outer package: the secondary package is placed in an outer transport container with suitable cushioning that protects it and its contents from external influences such as physical damage and water while in transit.

Few points about antibacterial sensitivity test (ABST):

1. First of all, it has to be clear that the outbreak, must be due to bacteria alone. Or else it will lead to obfuscating result, as commensal bacteria/ opportunistic pathogen might intercept.
2. The specimen such as heart blood swab shall have to be obtained from birds that have died not before three hours in order to prevent contaminating microbes.
3. It is not guaranteed that the bacterial growth obtained for performing ABST is always pure and the growth may even comprise the causative bacteria. In such cases, the outcome of the treatment based on ABST may not result in fruitful end.
4. It is pertinent to isolate the causative bacteria and then perform ABST, although this process may be time-consuming.
5. Bacteria such as streptococci or Avibacterium paragallinarum does not grow in the media used in regular ABST.
6. Despite taking all the care mentioned in above points, there is a possibility of in vitro and in vivo difference which may lead to ineffective therapy.
7. Based upon the experience, a clinician must decide the correct choice of antibiotics when more than one antibiotic are found to be sensitive or intermediate sensitive in ABST.

Conclusion:

It can be concluded that the collection and despatch of specimens with correct labelling determine the efficiency of the laboratory data. The rapidity in collection and despatch of the specimens to the willing laboratory with good expertise is another factor which decides fruitful laboratory output. Moreover, it is mandatory to follow the Nation's guidelines in despatch of the specimens.

Dr. N.P. RADHA KRISHNAN, B.V.Sc.,

(Regn. No. 2854)



SUCCESS POULTRY CARE

696-D2, Anbu Nagar Scheme - 1, Salem Road, Namakkal - 637 001, TAMILNADU
Cell : 94422 76630, 95247 66630 E-mail : successpoultrycare.nam@gmail.com

Uniqueness of Success Poultry Care

- * Headed by experienced poultry veterinarian
- * Both nutritional and microbiological analysis under one roof
- * Internationally approved protocols are being followed
- * Accurate and precise results
- * Rapid analysis
- * Communication of results through Email / Whatsapp within 24 hours
(Except Pepsin Digestibility (PD), Mold & *Salmonella.spp*)
- * Results given with interpretation and suggestion for microbiological analysis
- * Current results compared with previous results for serology
- * Analytical charges are same irrespective of sample's origin



ELISA done for the following :

- Infectious bursal disease (IBD)
- Infectious bronchitis (IB)
- Reovirus
- Mycoplasma gallisepticum (MG) and
- Mycoplasma synoviae (MS)



Janaki Group- CSR Initiative



When there is a problem or a natural disaster, Janaki Group actively contributes to social service for needy people in addition to producing feed for poultry and hatcheries.

The employees of Janaki Group donated one day's pay in November 2009 to help the flood victims in the KURNOOL area by providing food and blankets. This demonstrates how dedicated each employee is to the organization's social mission. The organisation provided food and blankets to leprosy patients in Secunderabad's BALAJINAGAR, JAVAHARNAGAR, and YAPRAL in February of 2012.

A pavilion in KARIMNAGAR stadium was built with assistance from the Janaki group's "CHALIMEDA JANAKIDEVI MEMORIAL" trust, which is managed by the Janaki group. Every year, the Sri Venkateswara Veterinary University of Andhra Pradesh receives the GOLD Medal from the Janakidevi Memorial Trust for their work in poultry sciences.

For deserving students, they also cover tuition and HOSTEL costs in addition to the awards. Additionally, M/s. Vimala FEEDS contributes to the salaries of the teachers at the LALGADI MALAKPET SCHOOL in the RR Dist.



This CSR initiative of Janaki Group must be encouraged by all.



GUPTA AGRO INDUSTRIES



Baby Feeder



Chick Feeding Tray



Mini Chick Feeder



Feeder with Cone Extension and Grill



Jambo Male Parent



Male Parent



Jumbo Feeder with Cone Extension



Female Parent Feeder



Male Parent Feeder



Jumbo Female Parent Feeder



Pan Feeding



Chain Feeding

GUPTA AGRO INDUSTRIES

Gupta Agro Industries Gali No. 1 Anand Vihar under
Railway flyover Hansi Road KARNAL 132001
Email: guptashiraz@gmail.com | Mob: 98120 52121

Biosint Nutraceuticals Collaborates on Research for its New Innovative Product Line with the PDP, ICAR, Hyderabad



"Research is Creating new Knowledge" - Neil Armstrong

"Biosint Nutraceuticals" has established its state of art R & D facility for field the trials of their products from last 18 years as a unit under firm known as A & L life sciences. For the new innovative product line Biosint Nutraceuticals collaborates the research work with Directorate of Poultry Research, Indian Council of Agricultural Research (ICAR). PDP under ICAR at Rajendranager is the renowned institution known for research in the field of poultry genetics, nutrition & health.



Dr R N Chatterjee, Director-Directorate of Poultry research ICAR and Dr Prasad Kulkarni, Director Biosint Nutraceuticals exchanging the research agreement copies.



Research team lead by Dr Shanmugam M, Senior Scientist, -Directorate of Poultry research along with Dr M R Reddy, Principal Scientist -Directorate of Poultry research along with Director Dr R N Chatterjee and Dr Prasad Kulkarni during the event.



Dr Prasad Kulkarni on behalf of Biosint Nutraceuticals formally signed to exchange the agreement copies at Hyderabad facility under guidelines of Dr R N Chatterjee, Dr S V Rama Rao, Dr M R Reddy, Dr Shanmugam M and Dr Ravi Pachaiyappan at the Hyderabad facility.

The project is initiated with support of Dr S V Rama Rao, Principal Scientist (Nutrition), Directorate of Poultry research ICAR- Rajendranager, Hyderabad

Dr R N Chatterjee, Director-Directorate of Poultry research ICAR- Rajendranager Hyderabad said that "this Industry-Academic collaboration will continue its research throughout the year for developing innovative concept that can support poultry producers to increase their income. This is just a beginning of supporting the rural economy."

Dr Ravi Pachaiyappan, Founder-Director Biosint Nutraceuticals explained that "research remained philosophy of the organization since inception, further its comtinence is now possible through such technocratic institutional collaborations. The facility is unique and perfect place to undertake research projects on genetics, nutrition & health."

Dr Prasad Kulkarni, Director Biosint Nutraceuticals explained that "Only innovative & research-based speciality product solutions can support today's price sensitive farming business. Its logical that these product solutions must be time tested and address real challenging part of poultry farming, like immunity and productivity. This

Dr Shanmugam M, Senior Scientist, - Directorate of Poultry research introducing the research set up in the facility at directorate of Poultry research ICAR- Rajendranager Hyderabad to Dr Prasad Kulkarni, Director, Biosint Nutraceuticals.

collaboration is the perfect roadmap of developing specific product solutions which really todays farming business demands. This is the right stage set for the innovation that the poultry industry in India needs today"

The research is supported by Principal Scientist Dr M R Reddy who has extensive experience in the field of immunology, pathology and disease surveillance.

The research project is driven by the team lead by Senior Scientist Dr Shanmugam M, having rich research experience of more than 15 years with the expertise in the field of avian fertility.

Food Safety & Food Quality through a One Health Approach



Knowledge seminar organised by KPFBA in association with Sapience Agribusiness Consulting



One Health & the nature of interconnectedness

The Karnataka Poultry Farmers & Breeders Association was proud to associate with Sapience Agribusiness Consulting in organising a knowledge session on 20th October 2022 at Courtyard by Marriott in Hebbal, Bengaluru. The theme of the knowledge event was One Health and the nature of interconnectedness between Human Health, Animal Health, and The Environment. The esteemed speakers

and panellists enlightened the audience about the One Health approach to achieve optimal health outcomes by recognising the interdependence and the fragile balance between people, animals, plants, and their shared environment. And at the end of the seminar, the audience was better informed on impact issues, such as the prudent use of antibiotics and the trickle-down effect of antimicrobial residues in animals on human health. Dr Sushant Rai, the respected President of KPFBA, brought the meeting to order and



established the significance and importance of the knowledge session's theme. Mr Prashant Kumar (Director, Sapience) hosted the event and kickstarted the programme with an overview of One Health.

TANUVAS. He was also the national coordinator at the UK Research and Innovation Programme for One Health representing poultry in India. Dr Raman spoke on the need for safe poultry production, the importance of prudent

challenges in broilers and breeders, Dr Filip, spoke on the dominant strains of Salmonella and their impact on food safety and, importantly, threw light on emergent strains such as Salmonella Infan+s in broilers and the impending food safety issues in the context of One Health.



Dr Filip went on to outline the impact of *Clostridium Perfringens* and *Staphylococcus Aureus* on broiler health and the various nutritional strategies as alternatives to antibiotics to facilitate gut health. Dr Filip also spoke about butyrates and bacteriophages as effective replacements to antibiotics to maintain gut microbiota equilibrium.

Impact of bacteriophages – an effective prophylactic replacement to AGPs

The third keynote speaker was Edgar Shin, the CEO of CTC Global. CTC Global is at the forefront of bacteriophage research and its application in animal health. First, Edgar introduced Xcelsio, a feed additive bacteriophage which is an effective prophylactic replacement to AGPs. Next, he explained in detail the lytic mode of action of bacteriophages. Finally, rounding off his presentation, Edgar presented the global research studies on the impact of bacteriophages on various strains of E. Coli, Salmonella, C. Perfringens, and S. Aureus.

Dr G.B. Puttanaiah, Chairman of the technical committee of KPFBA, provided a keen overview of the session and drew attention to the importance of working together to preserve our interconnected ecosystems and the need to understand emerging diseases in poultry farming. He then asserted the need to evaluate and prudently use antibiotic alternatives, such as bacteriophages.

The need for safe poultry production

The first keynote speaker was Dr Raman Muthuswamy. Dr Raman is a professor and former head of parasitology at

usage of antimicrobials, and the relevance of the One Health programme. In addition, Dr Raman discussed the importance of feed quality control and summarised the drivers of quality control of poultry feed in achieving food safety and quality.

Salmonella Infantis in broilers and the impending food safety issues

The second keynote speaker was Dr Filip Van Immerseel. Dr Filip is a Research Professor at the University of Ghent and the head of the gut health team at Ghent. An authority on bacterial intestinal





Panel discussion on One Health

A panel discussion on One Health followed the keynotes. The panellists were Dr Giridhar Gopala (a medical doctor who works with the One Health Trust, USA), Prof. A. Natarajan (a professor of animal nutrition who heads the animal feed analytical and quality assurance laboratory at Namakkal Veterinary college), Dr Raman Muthuswamy, Edgar Shin, and Dr Gopi M (NIANP). The panel discussion was moderated by Dr Mahesh Subhash Patlapati, who serves as the joint commissioner and Director of CPDO&TI, GoI. Dr Mahesh spoke about the interconnected nature between human health, the environment, and animals and how, at the global level, four

organisations, UNEO, FAO, WHO and WOA (formerly OiE), are coming together to understand and find measures to attain One Health. Dr Giridhar Gopal, who represents the One Health Trust, a global think-tank on AMR, spoke of the importance of understanding the various drivers of a silent killer, i.e., Antimicrobial Resistance in humans and how AMR will soon be the largest cause of death in humans. He spoke of integrating the three sectors working in different silos—Human Health, Animal Health, and the Environment.

Dr A. Natarajan spoke from an animal nutrition perspective. He informed the audience of how feed quality causes gut health problems, leading to higher antibiotic usage. He then implored the

need to focus on high-quality feed ingredients and high-quality feed as an input measure to reduce antibiotic use in animals. Through his primary research on AMR, Dr Gopi highlighted the alarming growth of antimicrobial resistance and espoused the need, as an industry, to gear up with measures cutting down antibiotic use dramatically. In their closing remarks, Dr Raman highlighted the need for biosecurity. Edgar remarked on the importance and need to use alternatives such as bacteriophages, which he called nature's solution to AMR. And Dr Natarajan reinforced that antibiotics need not be used in the feed and categorically stated that antibiotics, at low levels, as in the case of AGPs, do not work.



The vote of thanks was delivered by Dr T. Rajaram (General Manager – Sapience).



Round Table Session on One Health Approach to AMR & its challenges in Animal Origin Food Value Chain

2 November 2022

SUPPORTING PARTNER ew | nutrition

New Delhi



ew | nutrition



Confederation of Indian Industry

CII - EWN Round Table Session on One Health Approach to AMR & its challenges in Animal Origin Food Value Chain

New Delhi, November 2, 2022: Antimicrobial resistance (AMR) is a condition where bacteria, viruses, parasites, and fungi become resistant to treatments that once worked to treat them. The widespread use of antibiotics and other antimicrobials by humans, animals (including farmed fish), and plants, as well as the dispersion of their drug residues in soil, crops, and water,

have all contributed to the high levels of AMR that are already present on the globe today. It is considered the greatest and most urgent global risk, requiring international and national attention through a One Health approach.

With a vision to spread awareness and generate public discourse around AMR, the Confederation of Indian Industry, in collaboration with EW Nutrition,





Confederation of Indian Industry

from (L to R) -

Dr Bhupinder Singh, Managing Director & CEO, Vista Processed Foods Pvt. Ltd;

Dr Shirish Nigam, Managing Director, EW Nutrition South Asia;

Mr Suresh Chitturi, Co-Chairman, CII National Committee on Animal Husbandry & Dairying, President-International Egg Commission, Vice Chairman & Managing Director, Srinivasa Farms;

Dr Anuj Sharma, Technical Officer – Antimicrobial Resistance, Laboratories, Infection Prevention & Control, WHO Country Office for India;

Dr Vivekanandan Perumal, Professor, Kusuma School of Biological Sciences, Indian Institute of Technology (IIT), Delhi;

Dr Lata Kapoor, Additional Director, Head, Centre for Bacterial Disease and Drug Resistance & AMR Program Unit, National Centre for Disease Control, Ministry of Health and Family Welfare, India

organised a round table session on the theme "One Health Approach to AMR and its Challenges in the Animal Origin Food Value Chain" on November 02, 2022. The objective of this round table session is to engage participants from various domains in discussion and enable them to contribute their perspectives and ideas on how to bring global best practises into the local market to prevent and mitigate AMR, ensuring sustainability of the animal origin food value chain through a One Health approach.

The programme was graced with the presence of Mr Suresh Chitturi, Co-Chairman, CII National Committee on Animal Husbandry & Dairying, President-International Egg Commission, and Vice Chairman & Managing Director, Srinivasa Farms; Dr Anuj Sharma, Technical Officer – Antimicrobial Resistance, Laboratories, Infection Prevention & Control WHO Country Office for India; Dr Shirish Nigam, Managing Director, EW Nutrition South Asia; Dr Lata Kapoor, Additional Director, Head, Centre for Bacterial Disease and Drug Resistance & AMR Program Unit, National Centre for Disease Control, Ministry of Health and Family Welfare, India; Dr Vivekanandan Perumal, Professor, Kusuma School of Biological Sciences, Indian Institute of Technology (IIT), Delhi; Dr Bhupinder Singh, Managing Director / CEO, Vista Processed Foods Pvt. Ltd. More than 70 people from various domains attended the session and positively participated and shared their views.

"Antimicrobial resistance (AMR) is the issue in global health that most exemplifies the One Health concept, which aims to sustainably balance and optimise the health of people, animals, and ecosystems. The current COVID-19 pandemic has shown the need to strengthen health systems and surveillance for humans, animals, and the environment, including infections caused by resistant pathogens.", stated by Mr Suresh Chitturi, Co-Chairman, CII National Committee on Animal Husbandry & Dairying, President, International Egg Commission, and Vice Chairman and Managing Director, Srinivasa Farms

Addressing the session, Dr Anuj Sharma, Technical Officer for Antimicrobial Resistance, Laboratories, and Infection Prevention and Control at the WHO Country Office for India, said, "AMR is a complex multifactorial, multidimensional, and multi sectoral issue that is poorly understood, and antimicrobials are global public health goods. All these advances in modern medicine will go to waste if we are not able to tackle AMR. Developing state action plans in line with the national action plan and proper implementation through a One Health approach will be a step in the right direction to prevent antimicrobial resistance together."

"We know that antibiotic resistance cannot be avoided; it can only be delayed. To slow it down, we must invest in cost effective technologies. Phytochemicals could be used as antibiotic alternatives in the poultry sector to promote growth and enhance host health, which ultimately reduce antibiotic use and prevent AMR." highlighted, Dr. Shirish Nigam, Managing Director, EW Nutrition South Asia.

Dr. Lata Kapoor, Additional Director, Head, Centre for Bacterial Disease and Drug Resistance and AMR Program Unit, National Centre for Disease Control, Ministry of Health and Family Welfare, India, said, " Antimicrobial resistance (AMR) is an emerging global threat. Antimicrobial resistant infections are estimated to skyrocket and could account for 10 million deaths each year by 2050 if no actions are taken. Strict enforcement of regulation, particularly in the dispensing of antibiotics by pharmacies, together with the development and adherence to the national standard treatment protocol, is urgently required."

"Epigenetics, a stable phenotypic change that does not involve alterations in the DNA sequence, can be used to understand when you see resistance in a bacteria that is not explained by genetics. This science has the potential to use an effective diagnostic tool for AMR " said Dr. Vivekanandan Perumal, Professor, Kusuma School of Biological Sciences, Indian Institute of Technology (IIT), Delhi.

DUVASU Celebrates World Egg Day

'World Egg Day 2022' was celebrated by College of Veterinary Science and Animal Husbandry, DUVASU, Mathura on 14th October, 2022. On this occasion, a speech competition was organized by Department of Poultry Science for the undergraduate students on 'Eggs for a better life'. It was attended by faculty and students of the college. The winners of the competition were awarded prizes. Dr.Gulshan Kumar, Dr. Ambika Sharma and Dr. Parul were the jury members. Dr.P.K.Shukla, Dean, College of Veterinary Science and Animal Husbandry and Registrar and Dean PG, DUVASU, Mathura was the Chief Guest on the occasion. He stressed the importance of eggs as a source of nutrients in midday meal schemes and the strength of poultry products to boost immunity in New Normal. Dr.VikasPathak, Dean Students' Welfare also addressed the gathering. Dr. Amitav Bhattacharyya, Associate Professor, Poultry Science designed and coordinated the program along with his departmental colleagues. Dr. Manish Kumar Singh, Poultry Farm Manager proposed the vote of thanks.



Trouw talks about the Challenges of Tomorrow that need to be addressed Today: Review on Anti-microbial Resistance (AMR) and Gut Health Management



Trouw Nutrition India organized the second season of Trouw Talks in association with Confederation of Indian Industry (CII), focusing on Anti-microbial Resistance, a fast-rising global reality and public health concern, and how right strategies for Gut Health Management today can support the efforts toward responsible usage of antibiotics tomorrow. This time Trouw Talks was completed in three chapters at three locations pan India – starting from Karnal followed by Coimbatore and Bengaluru. All the events were highly successful and had an enthusiastic collective gathering of 300+ including Integrators, Feed Millers, Farmers, Consultants and Academicians.

Karnal chapter on 2 September 2022, was paneled by Dr. R K Singh (Program Director, One Health Support Unit (OHSU), Department of Animal Husbandry & Dairying, GoI and Former Director, ICAR-IVRI), Mr. Ricky Thaper (Treasurer, Poultry Federation of India and VP& Head – North Zone, IB Group), Dr. Peter Smid (Global Program Manager Feed Additives, Trouw Nutrition Global), Dr. Saurabh Shekhar (Managing Director, Nutreco South Asia), and Mr. Himanshu Saxena (ISM – Feed and Forage, Foss India). The session was moderated by Dr. Chandani Parihar, Marketing Head, Nutreco India and started with Mr. Ricky Thaper setting the context on why there is a need to discuss the topic today and how various strategies can be effectively implemented for reducing usage of antibiotics. Dr. Saurabh Shekhar then went on to explain why Trouw Nutrition, a Nutreco company, decided to bring this initiative and how it is close to our



Dr Saurabh addressing the audience in Karnal

purpose of Feeding the Future. He said that “As global industry leaders, we believe in taking the lead on topics that are critical for sustainable development. AMR is one such topic; we strongly believe, supported by proven results, that nutritional solutions are the first line of defense in keeping animals healthy and productive. Eventually playing an important role in reducing the usage of antibiotics.”

Keynote speaker, Dr. R K Singh while discussing about addressing the local impact of the global reality stated that AMR is a silent pandemic and with increasing multi-drug resistance, it impacts both animal and human health with economic implications. One Health approach of WHO is about bringing multiple stakeholders together with a farm to fork approach.

The presentation of second Keynote speaker, Dr. Peter Smid, included discussion on Gut Health Management for effective strategy to combat AMR. Key highlights from his presentation are:

- By 2050, we can lose 10 million lives per year to AMR making AMR the no. 1 cause of death.

- Over the past years, while consumer and food industry have this topic high on the agenda, there has also been dilemma about the transition.
- Trouw Nutrition focuses on a step by step, integrated Feed-Farm-Health approach when supporting customers.
- An important aspect to this approach is managing the pathogen load via various channels while improving the health of the animal.
- Gut health is esp. critical as it is linked to the overall health of birds, performance improvement and antibiotic reduction.
- Organic acids play an important role in managing the gut health and have been proven under local and global conditions in managing antibiotic usage.

Coimbatore session on 13 September 2022 was chaired by Dr. Jayaraman Krishnarajan (renowned Poultry Consultant), Dr. Natrajan A., (Professor and Head, Animal Feed Analytical and Quality Assurance Lab., VCRI, Namakkal), Dr. Peter Smid, Dr. Saurabh Shekhar, Dr. Ramesh Kumar (CEO,



Dr. Jayaraman addressing the audience in Coimbatore

Salem Microbes Pvt. Ltd.) and Mr. Himanshu Saxena. The session was moderated by Dr. Ramesh Kumar and Dr. Natarajan A. set the context for the evening giving a clear brief on how we have seen the anti-microbial resistance progress over the years and how our current actions are going to be important.

Dr. Jayaraman as a Keynote speaker gave the local and global overview of AMR explaining that it is more than a perception and is a reality. He explained how over the course of time there have been gradual shifts from AGPs as the search for alternatives to antibiotics in food production system continues. His suggestion to the audience was that prepare in advance and ensure to have a framework that is able to mitigate the fast changing outside world.



Participants asking questions during Panel discussion



Dr. Saurabh addressing the audience in Bengaluru

Bengaluru chapter on 16 September 2022 was chaired by Prof. G Devegowda (President, Institution of Veterinarians of Poultry Industry), Dr. S. S.Pattabhirama (Group Nutritionist, Nanda Group), Dr. Peter Smid, Dr. Saurabh Shekhar and Mr. Bharat Aswani (Managing Director, Foss India). The session was moderated by Dr. Chandani Parihar and Dr. Pattabhirama set the context for the audience on how antibiotic resistance is a growing concern and requires our attention.



Audience in Bengaluru TrouwTalks

For further information, kindly write to us at customercareindia@trouwnutrition.com or visit our website: www.trouwnutrition.in





Meeting with CKL

Carus Laboratories Exhibits at Aviana Africa in Uganda and introduces its innovative solutions

Carus Laboratories has participated with its team in Aviana Africa (International livestock, poultry and fish expo) which was held at UMA Show Grounds Lugogo in Kampala, Uganda from 28th to 29 October 2022 as an exhibitor and stole the show with its innovative solutions.

As one of the fastest-growing animal health care organization in India, Carus Laboratories Pvt. Ltd. has exhibited a basket of unique solutions well researched and produced in its state-of-art FAMI-QS & ISO 9001-2015 certified manufacturing plant situated at Kunjapura, Karnal 132001, Haryana, India.

Their team members Dr Amit Kumar Pandey (GM: International Business) and Mr Vipin Sardana (International Operation Manager) represented the company at this event. As the African continent has a huge opportunity in the veterinary field, the company main aim was to interact with local stakeholders in the cattle and poultry business and find distributors for their wide range of animal feed supplements and additives. They met some of the stakeholders at Expo and in their offices like Quality Chemical limited, Biyinizika poultry, Goodman international, Vetcenter, Concfed, etc.

Their team also visited the neighbouring country of Uganda i.e. Kenya & met with many renowned brands in Kenya like Twiga Chemical, Elgon Kenya, CKL Africa Ltd., Murphy chemicals, Metrovet and Ultravetis East Africa.





Meeting with Murphy chemicals



December 2022

1. Agri Livestock

Dates: 02 - 04 December 2022

Venue: Myanmar Expo Hall

City: Yangon

Country: Myanmar

Website: www.agrilivestock.net

January 2023

1. India Poultry Show-2023

Dates: January 20 - 22, 2023

Venue: Codissia Trade Fair Complex

City: Coimbatore, Tamilnadu

Country: India

Website: www.indiapoultryshow.com

2. The International Production & Processing Expo (IPPE) 2023

Dates: January 24 - 26, 2023

Venue: Georgia World Congress Center

City: Atlanta

Country: USA

Website: www.ippexpo.org

February 2023

1. Dairy and Poultry Expo

Dates: February 2 - 4, 2023

Venue: ICCB, Kuril Bishwa Road, Nexto 300 Ft Purbachal Express highway

City: Dhaka, Bangladesh

Country: India

Website: www.limraexpo.com

March 2023

1. Viv Asia 2023

Dates: March 8 - 10, 2023

Venue: IMPACT

City: Bangkok

Country: Thailand

Website: www.vivasia.nl

May 2023

1. Middle East Poultry Asia 2023

Dates: May 1 - 3, 2023

Venue: Riyadh International Convention and Exhibition Center

City: Riyadh

Country: Saudi Arabia

Website: www.mep-expo.com

2. Fieravicola 2023

Dates: May 3 - 5, 2023

Venue: Rimini Expo Centre

City: Rimini

Country: Italy

Website: www.fieravicola.com

3. Viv Rusia 2023

Dates: May 30 - June 1, 2023

Venue: Crocus Expo

City: Krasnogorsk, Moscow

Country: Russia

Website: www.meatindustry.ru

July 2023

1. Livestock Philippines 2023

Dates: July 5 - 7, 2023

Venue: World Trade Center Metro Manila

City: Pasay City

Country: Philippines

Website: www.livestockphilippines.com

August 2023

3. The Poultry Expo @ The Livestock Expo

Dates: August 3-5, 2023

Venue: India Expo Center & Mart

City: Greater Noida

Country: India

Email: info@pixieexpomedia.com

Website: www.pixieexpomedia.com

Hamlet Protein Appoints New CFO



Poul Jørgensen CFO

Hamlet Protein, a global producer of specialty ingredients for young animal nutrition, has announced the appointment of Poul Jørgensen as CFO. From the company's headquarters in Horsens, he will be in charge of the finance operations and the IT organisation (Denmark).

Mr. Jørgensen, a graduate from the University of Southern Denmark and alumnus of the Copenhagen Business School, comes with an international background and experience in finance, IT and logistics.

"I am excited to join Hamlet Protein and help implement its' ambitious growth agenda," stated Jørgensen.

"It is important to invest in strong financial leadership in current volatile market conditions. We are happy to welcome Poul in our organization, and look forward to partnering with him," commented Hamlet Protein CEO Erik Visser.

Hamlet Protein manufactures soy-based protein ingredients and fibre specialties for swine, poultry, ruminant, and aquaculture at two plants in Denmark and the United States. Hamlet Protein serves customers all over the world through a network of its own sales offices and distributors.



Mr. Joginder Singh Uppal

takes charge as Regional Business Director ISC Proteon Pharmaceuticals consolidating its position in India

Proteon 
Pharmaceuticals

In line with its expansion plans, Proteon Pharmaceuticals India, a subsidiary of Proteon Pharmaceuticals S.A. Poland, announced the appointment of Mr. Joginder Singh Uppal as the Regional Business Director for the Indian subcontinent and South-East Asia Region. Mr. Uppal will drive growth and acquisition strategies across the regions to support the poultry, aquaculture and dairy industries in achieving safe and sustainable production.

Over the decades, antibiotics have become a norm used in animal feed in multiple countries to promote the well-being and growth of animals. At the present juncture of time, this practice has now raised a lot of apprehensions. A priority concern has been that continuous exposure to antibiotics can contribute to antimicrobial resistance. Proteon Pharmaceuticals focuses on precision biology for microbiome protection to improve animal and human health, increasing environmental sustainability and eliminating the unnecessary use of antibiotics. Diseases caused by Salmonella and E. Coli are the major challenges faced by poultry producers. The infections caused by these bacteria not only impact poultry's health but also the profitability of the producers as well as human health.

Mr. Uppal has a rich and recognized track record of more than 30+ years in sales and marketing in the Poultry and Livestock sector and has worked in varied markets across India, South Asia, Middle East and Africa. He has strong technical knowledge on the subject and with expertise in sales, corporate strategy, and trade management, Mr. Uppal will focus on improving organizational performance and unlocking new business opportunities through strategic alliances with key decision-makers.

Elaborating on his new role at Proteon Pharmaceuticals, Mr. Uppal commented "Phage therapy mainly utilizes lytic phages to kill their respective bacterial hosts and can be an attractive solution to combating the emergence of AMR in livestock. With an aim to provide an innovative antibacterial solutions to the animal health industry; Proteon's mission is to eliminate unnecessary antibiotic usage, reduce the risk of AMR and at the same time, increase the sustainability of protein production through the reduction of waste and in the improvement of on-farm efficiency."

Commenting on Mr. Uppal's appointment, Dr. Paolo Doncecchi, Global Sales Director Proteon Pharmaceuticals, said, "We are proud to induct Mr. Joginder Singh Uppal from the industry and we wish him the very best as he takes on the mantle of a challenging position of Regional Business Director. I am particularly thrilled about this critical role being fulfilled by a reputed veteran like Mr. Uppal. With his vast experience across diverse industries and work cultures, he will spearhead the next levels of growth and reinforce Proteon Pharmaceuticals as a forerunner in the

bacteriophage revolution in the region. His appointment is a reinforcement of the Proteon vision to be a leader in bacteriophage research and technology with customer empowerment at the helm of it.

Mr. Nipun Gupta, CCO at Pharmaceuticals adds "We have already launched BAFASAL+G(R) and BAFACOL(R) for poultry to control Salmonella and E. Coli respectively. We have also introduced BAFADOR(R) for Aquaculture to control Pseudomonas and Aeromonas, and very soon we will be launching BAFACAM for dairy to control mastitis. There are also many other products in the pipeline to target the pathogenic bacteria prevalent in the poultry, dairy, and aqua industry to enhance the profitability of the farm owners. With Mr. Uppal now taking charge, he already has his hands full to ensure that our products can benefit the vast number of poultry and dairy farmers as well as the growing food industry with solutions that are sustainable, non-GMO, and drive financial viability."

About Proteon Pharmaceuticals

Proteon Pharmaceuticals S.A. is a global leader in bacteriophage (phage) technology for livestock farming and aquaculture. Proteon's mission is to eliminate the need for unnecessary antibiotic use, reduce the risk of antimicrobial resistance (AMR), as well as to increase the sustainability of protein production through the reduction of waste and improvement of on-farm efficiency. Proteon's products function by modulating the microbiome enabling prophylactic health. Proteon has patented a precision phage product development platform using genomics technologies, molecular biology, bioinformatics and artificial intelligence (AI) to create effective, reliable, and safe antibacterial solutions for animal and human health.

Website: www.proteonpharma.com

Linkedin: <https://in.linkedin.com/company/proteon-pharmaceuticalsindia>



Innovatec Expands its Innovative Footprint by Introducing the Ultimate In-Ovo Egg Injection System



Innovatec Hatchery Automation introduces its latest development for the poultry industry. Innovatec has increased its innovative footprint by introducing the Ultimate In-Ovo Egg Injection System to the market.

The Ultimate In-Ovo was created with the goal of providing the highest level of biosecurity possible during injection, minimising vaccine waste, increasing



ease of maintenance, and, most importantly, improving chick performance.

The advanced double-needle injector and perpendicular egg setting up to 12 degrees ensure that all live embryos on a setter tray are vaccinated consistently. The needles are automatically cleaned after each injection, ready for the next tray.

The Ultimate In-Ovo has a needle-cleaning programme during the start-up and end of vaccination to improve biosecurity. The built-in "Smart Filling" method ensures minimal vaccine loss while priming at the start of production.

Automation equipment from Innovatec has been described as simple, robust, and innovative by industry experts. The Ultimate In-Ovo is built on the same principles. Downtimes can be avoided using the Smart Design Concept. Easy, regular

maintenance will suffice year after year for maximum productivity at the lowest possible cost.

Our contact-free concept provides unrivalled cross-contamination controls by adding the Ultimate In-Ovo System to a hatchery's candling & transfer processing line. The CLEANchick™ detects live embryos with unparalleled precision, while the Exploder Removal System (ERS) removes contamination with no direct contact. The absence of dead(s) prior to vaccination improves biosecurity at all levels.

A cleaner hatchery environment, free of exploders during transfer and processing, will result in a better and more consistent hatch, reducing the need for antibiotics and other medications. These enhancements will result in more efficient operations, a healthier product, and a more profitable company.



**The Ultimate In-Ovo in-line with the CLEANchick and Exploder Removal System*

Pescafresh opens a new processing facility in Mumbai

pescafresh
passion for fresh

Pescafresh, India's first D2C brand in the seafood and meat categories, has opened a new processing facility and distribution hub in Mumbai for its seafood, meats, eggs, ready-to-cook (RTC), and ready-to-eat (RTE) processing operations.

This Lower Parel Central Area Processing and Distribution Centre (CAD) features separate processing areas for seafood, poultry, mutton, RTC and RTE, as well as industry-leading temperature and humidity controls. A culinary centre, dry storage, an office mezzanine, freezers, coolers, and loading docks are also available. The unit includes an R&D centre for developing exceptional fresh seafood and meat products.

The new facility, which is equipped with industry-referenced processing and analytical capabilities and is based on European standards, will serve customers hygienic and 100% fresh Pescafresh products.

This facility supports the company's strategy of investing in infrastructure that allows the brand to create formulations that meet customer needs and market trends. It was built to meet the highest hygiene and cleanliness standards, and various industry-standard Sanitary Standards Operating Procedures (SSOPs) have been implemented.

This facility supports the company's strategy of investing in infrastructure that allows the brand to create formulations that meet customer needs and market trends. It was built to meet the highest hygiene and cleanliness standards, and various industry standard Sanitary Standards Operating Procedures (SSOPs) have been implemented. A visit to the CAD reinforces Pescafresh's commitment to quality, with spic and span interiors, clear workflows, and employees who wear head nets, face masks, and gloves to maintain high hygiene standards.

OVN Optimum Vitamin Nutrition®

Check and adjust vitamin levels for more sustainable farming

ANIMAL NUTRITION AND HEALTH

DSM

"We are pleased to announce the opening of the new CAD facility, which was built in accordance with HACCP standards and in accordance with regulatory and FSSAI standards." Our commitment to providing high-quality products ensures that we have a system in place to ensure complete traceability - truly from sea to shore to door and farm to fork. Aside from cutting-edge technology, the company has a competent and well-trained in-house team to enforce stringent quality measures, such as meat selection through stringent grading and standardisation, and automated handling. Before starting work at the new facility, all employees must receive in-

house training certification," said Sangram Sawant, founder of Pescafresh.

Pescafresh, which is already present in Mumbai and Pune, will soon expand into Bengaluru and Delhi NCR.

Roxell introduces the Fortena™ chain feeding system for hens

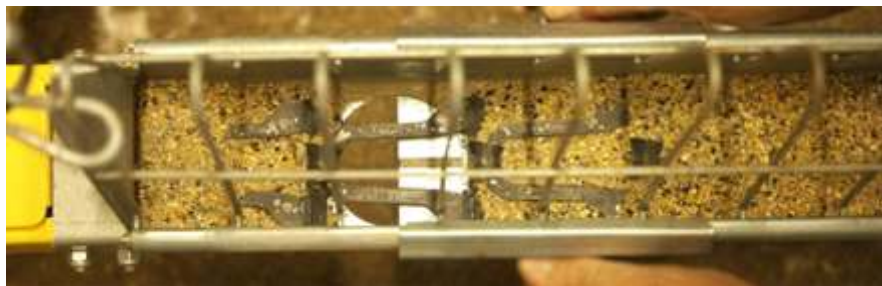
Roxell launches the Fortena™ chain feeding system for broiler breeders in the production period. Roxell has thus completed its total feeding range, which now includes a solution for every type of



poultry farmer. These feeding systems are part of Roxell's 360° farm equipment range, which also includes innovative drinking systems, nests, heating, ventilation, and controllers.

The Fortena™ chain feeding system is not merely an upgraded version of the systems currently available. The feeding specialists at Roxell have taken care of the design of the chain, feed trough, and corner wheels. The end result is a novel chain feeding system that enhances and accelerates the hens' feed intake while lowering residual feed.

Feeding systems for every type of poultry farmer



"It may be surprising that as a notorious pan-feed promoter, Roxell now also has a chain feeding system, but actually it's a logical step," says Frank Hartmann, Marketing Manager at Roxell. "We have been working hard on broadening the range for 10 years. The excellent performance of pan feeding systems is an indisputable advantage. However, those who opt for ease of use and visibility will find an excellent alternative in our chain feeding system. A chain feeding system therefore also belongs in a 360° product range. In short, today Roxell has a solution for every need."

New chain feeding system, robust and convenient

The Fortena™ chain feeding system is not a copy. Our systems are all innovative, durable and performant and this chain system is no different. Specifically, our feeding experts worked on the design of the chain, feed trough and corner wheels. That is why the feed

intake improves with Fortena and that is due to the greater ease with which hens eat. The feed remains intact better and the hens get to the feed more easily. Moreover, the new corner wheels require hardly any maintenance. Finally, we use high-quality materials and techniques to guarantee the longevity for which Roxell is known.

Inge van daele, product manager at roxell



IFIF and FAO strengthen their collaboration on critical issues to ensure safe and sustainable feed and food

The International Feed Industry Federation (IFIF) and the Food and Agriculture Organization of the United Nations (FAO) met for the 21st time to strengthen their collaboration on critical issues such as ensuring safe, nutritious, and sustainable feed and food.

Mrs. Maria Helena Semedo, Deputy Director-General FAO, and Mr. Thanawat Tiensin, Director Animal Production and Health at FAO, along with Mr. Ruud Tijssens, IFIF Chairman, officially opened the meeting. They welcomed the IFIF delegates, who represented over 80% of global compound feed production, and reaffirmed their commitment to this long-standing partnership, agreeing to continue to strengthen their collaboration to address the feed and food chain's challenges.

"FAO and IFIF have a long standing partnership," said Daniela Battaglia, Livestock Production Officer at the FAO's Animal Production and Health Division. "This meeting addressed a number of critical issues of common interest, such as the need for capacity development to ensure feed safety and the importance of collaborating to tackle antimicrobial resistance containment" (AMR). FAO is committed to collaborating with the private sector and feed producers, believing that they can make the livestock and food sectors more responsible and sustainable, as well as achieve important goals such as public health and animal health and welfare."

About IFIF

The International Feed Industry Federation (IFIF) is made up of national and regional feed associations, feed-related organisations, and corporate members from all over the world,



representing more than 80% of global feed production. The International Feed Industry Federation (IFIF) provides a unified voice and leadership to represent and promote the global feed industry as an essential participant in the food chain that provides sustainable, safe, nutritious, and affordable food for the world's growing population.

USDA Announces Investments to Increase Competition and Expand Meat and Poultry Processing Capacity



The Biden-Harris Administration is investing \$73 million in 21 grant projects through the first round of the Meat and Poultry Processing Expansion Program, according to USDA Secretary Tom Vilsack. MPPEP responds to President Biden's call to increase competition across the economy in order to help American families save money. This announcement will increase meat and poultry processing capacity, increasing competition, supporting producer income, and strengthening the food supply chain, lowering costs for working families and creating jobs and economic opportunities in rural areas.

Furthermore, the Administration is investing \$75 million in eight projects through the Meat and Poultry Intermediary Lending Program and more than \$75 million in four meat and poultry-related projects through the Food Supply Chain Guaranteed Loan programme.

These announcements support the Biden-Harris Administration's Action

Plan for a Fairer, More Competitive, and More Resilient Meat and Poultry Supply Chain, which dedicates resources to expand independent processing capacity. As President Biden highlighted earlier this year, creating fairer markets and more opportunities for family farmers helps bring down prices at the grocery store.

Merck Animal Health Reintroduces CORVAC-3® Vaccine



Vaccine provides broad spectrum protection against the strains associated with coryza outbreaks in the U.S.

Nov. 3, 2022 – Merck Animal Health, known as MSD Animal Health outside of the United States and Canada, a division of Merck & Co., Inc., Rahway, N.J., USA (NYSE:MRK), has announced the reintroduction of its Corvac-3 to help U.S. poultry producers combat outbreaks of avian coryza, an acute respiratory infection of chickens.

Corvac-3 provides broad-spectrum protection against disease caused by *Avibacterium paragallinarum* (coryza serotypes A, B or C) and is approved for use in chickens five weeks of age or older by subcutaneous injection. It has optimum antigen content and provides dependable development of immunity against the disease.

"In light of recent outbreaks of avian coryza, Merck Animal Health has relaunched its Corvac-3 vaccine in the U.S." said Jim Stockam, D.V.M. for Merck Animal Health. "This vaccine is prepared from three inactivated strains of *Avibacterium paragallinarum* belonging to serotypes of A, B, and C and provides comprehensive protection against the strains associated with coryza outbreaks in the U.S."

The product is now commercially available. It comes in a 500-ml (1,000 doses) presentation.

NIHC urges FDA to approve hemp seed



On November 3, the National Industrial Hemp Council of America (NIHC) urged the US Food and Drug Administration (FDA) to approve hemp seed as an ingredient in animal feed. Patrick Atagi, President and Chief Executive Officer of NIHC, addressed the letter to FDA Commissioner Robert Califf.

The letter follows an Aug. 9 webinar co-hosted by NIHC and the Association of American Feed Control Officials (AAFCO). The webinar, titled "Hemp as a Feed Ingredient: A National Discussion," brought together officials from the United States Department of Agriculture (USDA), the Food and Drug Administration (FDA), as well as industry professionals and policymakers, and was attended by over 1,000 state regulators, hemp industry, and veterinary professionals.

According to the NIHC, the approval of hemp seed would benefit both farmers and consumers.

"Part of our mission has been to promote the safe and efficient use of hemp-based animal feed for livestock production," Atagi wrote in the letter. "The US agriculture industry is dealing with a global grain shortage as a direct result of the Ukraine conflict." According to the USDA, this has resulted in a direct 16% increase in inputs for all domestic livestock producers since last year."

In the letter, Atagi emphasised the various clinical trials on hemp seed and hemp-based ingredients in animal feed that have been submitted to the FDA. According to the letter, all of these trials produced the same result: no cannabinoids were transferred into the food supply chain from animals fed hemp-based meal, including hens, hogs, and dairy cattle.

Activin is the scientifically designed micro-nutritional bundle of nutrients that successfully modulate aging and stress related effect on the fertility of the flocks. The product assures the micro nutrient supply to the male and female birds that are critical for the reproductive performance to achieve optimal fertility of the flock.

ACTIVIN

Facilitating fertility



Reach Out To Us :

BIOSINT NUTRACEUTICALS

Corporate Office : 37, Krishna Nagar, KK Pudur 4th St., Coimbatore - 641 038.

Telefax : + 91 - 422 - 2430275 | Mobile : 094435 17258

E-mail : biosint@gmail.com | Web : www.biosint.co.in

For technical details of product, trials you can connect Dr Prasad Kulkarni, Director , Biosint Nutraceuticals
@prasad.kulkarni@biosint.co.in

Editorial Calendar 2022

Publishing Month: January Article Deadline : 30th, Dec. 2021 Advertising Deadline : 3rd, Jan. 2022 Focus : Disease Prevention	Publishing Month: February Article Deadline : 30th, Jan. 2022 Advertising Deadline : 3rd, Feb. 2022 Focus : Nutrition Management	Publishing Month: March Article Deadline : 28th, Feb. 2022 Advertising Deadline : 3rd, March 2022 Focus : Vaccination	Publishing Month: April Article Deadline : 30th, March 2022 Advertising Deadline : 3rd, April 2022 Focus : Heat Stress
Publishing Month: May Article Deadline : 30th, April 2022 Advertising Deadline : 3rd, May 2022 Focus : Cold Chain Mgmt.	Publishing Month: June Article Deadline : 30th, May 2022 Advertising Deadline : 3rd, June 2022 Focus : Feed Production	Publishing Month: July Article Deadline : 30th, June 2022 Advertising Deadline : 3rd, July 2022 Focus : Layers, Cages, Eggs	Publishing Month: August Article Deadline : 30th, July 2022 Advertising Deadline : 3rd, August 2022 Focus : Genetics & Breeding
Publishing Month: September Article Deadline : 30th, August 2022 Advertising Deadline : 3rd, September 2022 Focus : Biosecurity	Publishing Month: October Article Deadline : 30th, September 2022 Advertising Deadline : 3rd, October 2022 Focus : Winter Management	Publishing Month: November Article Deadline : 30th, October 2022 Advertising Deadline : 3rd, November 2022 Focus : Environment Control	Publishing Month: December Article Deadline : 30th, November 2022 Advertising Deadline : 3rd, December 2022 Focus : Industry Outlook

Subscription Rates

Time Period

1 Year	INR 2400	USD 250
3 Year	INR 6500	USD 650
5 Year	INR 10000	USD 1000

*18% GST Extra

Contact Name : _____

Company Name : _____

Postal Address : _____

City : _____ State : _____ Mob. No. _____

Postal Code : _____ Country : _____

We wish to subscribe the following

Poultry Planner

1 Year 3 Year 5 Year
from _____ to _____

Dairy Planner

1 Year 3 Year 5 Year
from _____ to _____

Poultry Times of India

1 Year 3 Year 5 Year
from _____ to _____

Grand Total: _____

Payment Details:

Send DD or Cheque in favour of Pixie Consulting solutions Ltd. payable at Karnal
 Address: C/o OmAng Hotel, Namaste Chowk, Near Janta Petrol Pump,
 KARNAL - 132001 (Haryana) INDIA or Transfer money to HDFC Bank
 Bank address: Opp. Mahavir Dal Hospital
 Account Type: Current
 Account Name: Pixie Consulting Solutions Limited
 Account Number: 01958730000179
 IFSC Code: HDFC0000195 | Swift Code: HDFCINBB | PAN No. AAACP6186B

For more detail, contact:



Pixie Consulting Solutions Ltd.
 C/o OmAng Hotel, Namaste Chowk, Near Janta Petrol Pump,
 KARNAL - 132001 (Haryana) INDIA
 Email : poultry.pcsl@gmail.com | editor.pcsl@gmail.com
 Website : www.pixie.co.in
 M: +91 999 170 5007 | 7419993009

Date: _____ Company's Stamp & Signature

By signing this form I acknowledge that I have read and agree to the quoted cost above

*5% GST Extra **Advertisement Tariffs**

Advertisement Type	Single Issue (cost @)	Advertisement Type	Single Issue (cost @)
Front Page	45000 <input type="checkbox"/>	Back Title	30000 <input type="checkbox"/>
Front Gate Fold	45000 <input type="checkbox"/>	Back Gate Fold	30000 <input type="checkbox"/>
Front Title Inside	30000 <input type="checkbox"/>	Back Title Inside	25000 <input type="checkbox"/>
Front Title Opening	25000 <input type="checkbox"/>	Back Title Opening	20000 <input type="checkbox"/>
Full Page	12000 <input type="checkbox"/>	Center Spread	35000 <input type="checkbox"/>

MYCO SECURITY

DON

FUM

AFB₁

ZEA

Organoaluminosilicates

Synergistic binding
and protection

Global expertise



Defusion™

Defuses multiple mycotoxins, defends gut integrity

Supported by Cargill's

Comprehensive mycotoxin survey

Lab & on-site mycotoxin analysis

Customer oriented MycoSchool

Provimi Animal Nutrition India Pvt. Ltd.

IS-40, KHB Industrial Area, Yelahanka New Town, Bengaluru - 560 064, India

Email at: info_info@cargill.com

Call at: +91-9606077510



Nutritional Imbalance

Coccidiosis & Enteritis

Endotoxins

Sudden Dietary Changes

Bacterial Infection

Feed Toxicity



Convert your losses into profits with **special protection of...**

SALCOCHEK™

ANTIDIARRHOEAL AND GUT FUNCTION MODULATOR

For further information, please contact:



AYURVET LIMITED

6th Floor, Sagar Plaza, Distt. Centre, Laxmi Nagar, Vikas Marg, Delhi-92, INDIA
Ph. : 011-22455992-4 Fax : 011-22455991
e-mail : consumercare@ayurvet.com web : www.ayurvet.com

**TRADITIONAL KNOWLEDGE™
MODERN RESEARCH**

The RIGHT FEED



Suguna Broiler Feed



- ✓ Better Livability
- ✓ Faster Growth
- ✓ Better FCR

PBS | BS | BF | BC 7.5% | BC 10%
BC 35% | BC 40%



Suguna Layer Feed



- ✓ Better Livability
- ✓ More Eggs
- ✓ Lowest Feed Cost

LSC | LCC | LGC | LLC | LC 35% | LC 40%



Suguna Country Chicken Feed



- ✓ Balanced Feed
- ✓ Rich in Nutrients
- ✓ Better Weight Gain

CCS | CCF | CCBP



IntraHygiene

The nr.1 programme to ensure the best farm hygiene

Are you aware of the **hygiene
threat** at your farm?



Essential tools
for optimal
biosecurity



Biosecurity begins with an in-depth look at potential entry points and its most possible route into the farm. Movement of animals, personnel, wild animals and rodents should be kept as restricted as possible. The Intra Hygiene Concept is the solution for optimal biosecurity.



LEARN MORE

Would you like to know more? www.intracare.nl

Intracare