

POULTRY PLANNER

R.N.I. 71668/1999

Title Code HARBIL00563

Vol. 25 | No. 02 | February - 2023



*An imbalanced Gut
leads to production loss...*



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

**Multi-strain
probiotic**

**Prebiotic from
an Herbal
source**

Phytobiotics



- Better immunity
- Bile and acid tolerant
- Better villi crypt ratio
- Better digestion
- Thermostable at 100°C

Himalaya Wellness Company

Makali, Bengaluru 562 162, India

www.himalayawellness.com

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

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

Media Partner

 **Engormix** | **POULTRY PLANNER**

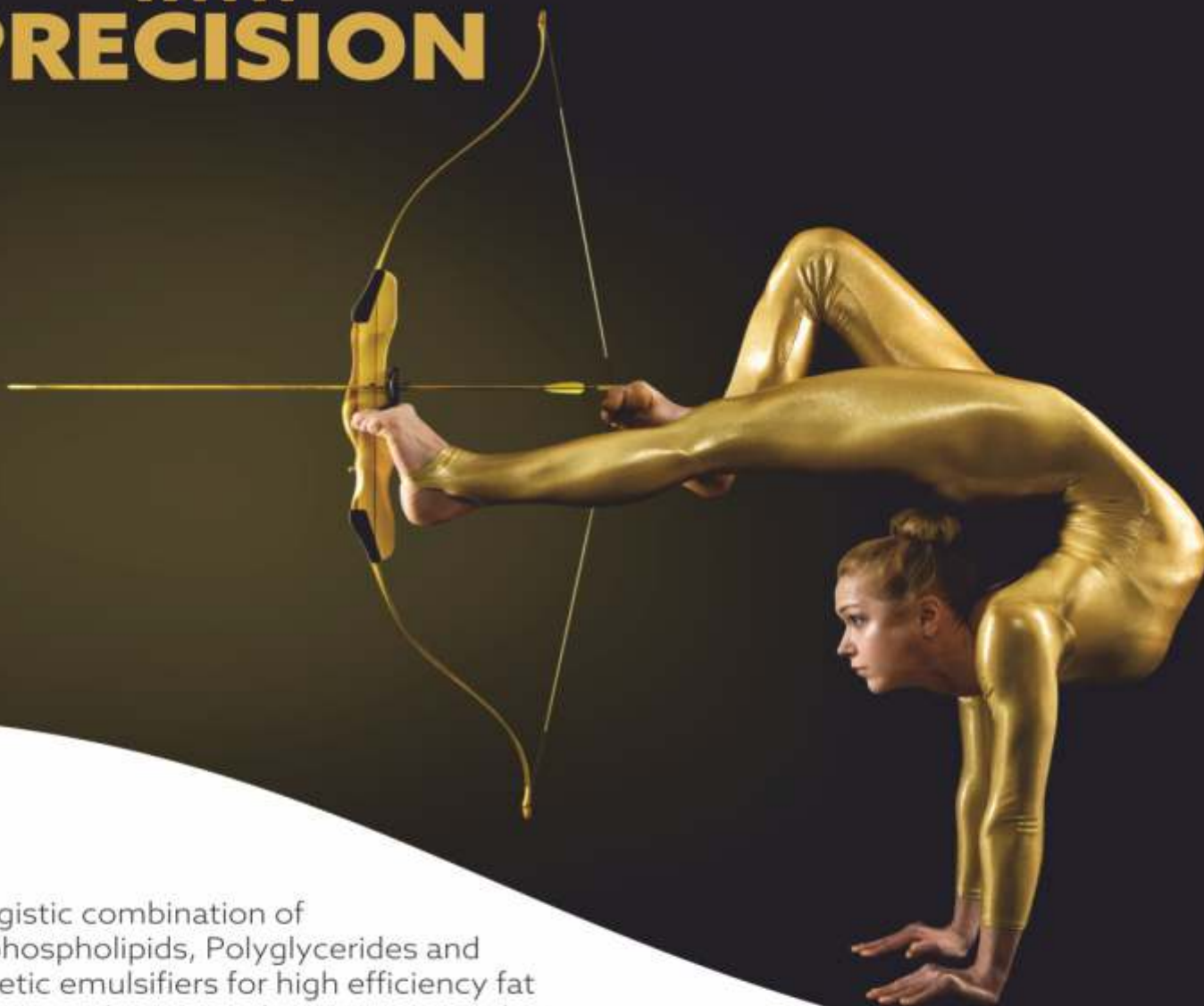
Supported by



☎ **741999 3009 | 999 170 5007**

✉ info@thepoultryexpo.com

FLEXIBILITY WITH PRECISION



Synergistic combination of
Lysophospholipids, Polyglycerides and
Synthetic emulsifiers for high efficiency fat
digestion and nutrient absorption in poultry

Improves Oil energy
and AME value

Faster, better digestion and
absorption of nutrients

Improves weight gain
and reduce FCR points

Lysoforte® 2.0

Science of Superior Nutrient Absorption

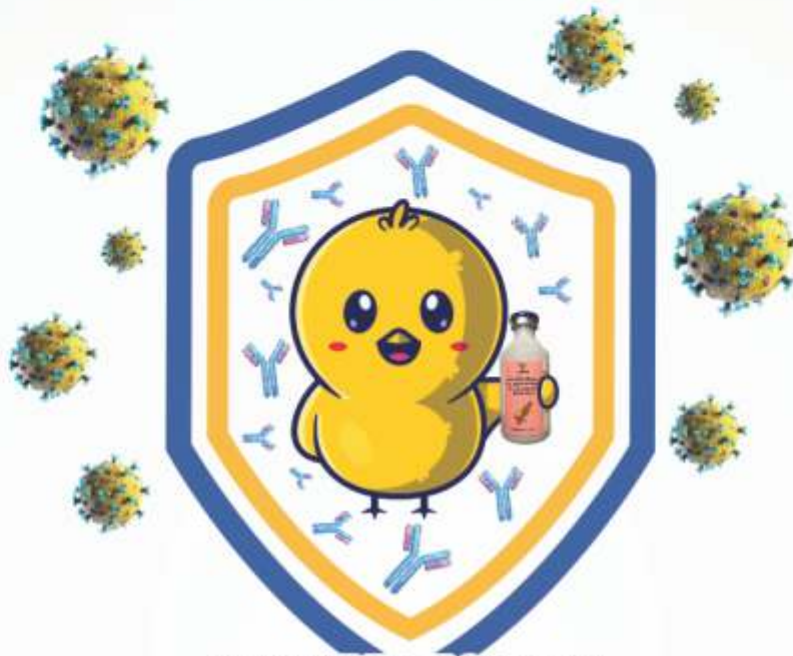
KEMIN

kemin.com

© Kemin Industries, Inc. and its group of companies 2022. All rights reserved. ®™ Trademarks of Kemin Industries, Inc., U.S.A.
Certain statements, product labeling and claims may differ by geography or as required by government requirements.



VH NBD GUARD



VACCINE THAT SHIELDS

**NEWCASTLE DISEASE AND INFECTIOUS BURSAL DISEASE
VACCINE INACTIVATED**
(1000 Doses/200ml)

Highlights

- ✓ Protection against indigenous genotypes of ND
- ✓ Protection against very virulent pathotypes of IBD
- ✓ Full antigen dose in low volume
- ✓ Helps developing age resistance against certain immuno suppressive diseases (CAV, IBH)
- ✓ Low volume with full antigen ensures complete immunity
- ✓ Provides high & uniform level of antibodies that persist for longer periods

VENTRI BIOLOGICALS
(Vaccine Division of VHPL)

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



Email: ventri.biologicals@venkys.com

www.venkys.com

Egg Breakage

...could impact your prof it!



Optimal calcium absorption (Hadjod)

Endurance optimizer
(Cr. Lasuna, Shatavari, Amalakk and Ashwagandha)

Improves fertility and hatchability

Improves egg production

Improves eggshell quality

Himalaya Wellness Company

Mumbai, Bengaluru 562 162, India

www.himalayawellness.com

E-mail: write_to.us@himalayawellness.com

SUCCESS BREEDS SUCCESS

ROSS 308 AP DELIVERS FOR ASHU BREEDING FARM

"For Ashu Breeding Farm, the proof is in the results, and the Ross® 308 AP comes through for us each time. The support from Aviagen India, and hard work of our own team, helps us maximize the excellent genetics."

MR. MOHAN GADA

Managing Director of Ashu Breeding Farm

ASHU BREEDING FARM We focus on business sustainability goals by supplying the best-quality products to our customers.

**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

Aviagen®



From the Editor's Desk



Importance of Health and Nutrition Management in Poultry

Health and nutrition management are critical in the poultry industry for several reasons. A well-managed diet and health program can lead to improved growth rates, feed conversion efficiency and overall performance of poultry, which can increase profitability. Healthy birds produce safe and high-quality meat and eggs. This leads to improved marketability and consumer confidence. To achieve this, nutrition management is of prime importance. A well-managed poultry operation that prioritizes the health and nutrition of the birds can be more sustainable and efficient, leading to improved long-term success.

A farm should conduct a nutritional assessment for their birds. While doing this, take into account factors such as stage of growth, egg production, and environmental conditions. Then develop a diet plan based on the findings of the assessment. The diet should contain an appropriate balance of nutrients ranging from proteins, carbohydrates, vitamins, fats to minerals. The feed should contain high quality ingredients free from contaminants.

A farm should regularly monitor feed intake to ensure that birds are consuming the appropriate amount of feed and; that the diet is meeting their nutrient requirements. This should highlight any birds with nutritional deficiencies and then one could adjust their diet accordingly.

Water plays a crucial role in digestion and nutritional absorption. So, ensure that the birds have access to clean and fresh water at all times.

As a final note, I will say, effective health and nutrition management is crucial for the success and profitability of the poultry industry.

OUR TEAM

Bhavana Gupta

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

Siddhi Gupta

Co-Editor
siddhi@pixie.co.in

Archit Sharma

Assistant Editor
editor.pcs@gmail.com
M: 9991705007

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. Mohit Bharadwaj

(Phd Scholar, Pantnagar)

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



**Poultry Planner
&
Dairy Planner**
Monthly Magazine



Monthly Magazine's

THE NEW STANDARD
IN DEVELOPING TODAY'S BUSINESS

Advertise with us
Today
See your business
Growing

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

With Over
35,000+
Readership

**Boost
YOUR BRAND
VISIBILITY**
with us



PARTICIPATED
EXHIBITION

ARTICLES

PRESS
RELEASE

CSR's

ADVERTISEMENTS
MARKET REVIEW
INDUSTRY UPDATES
LATEST NEWS

www.pixie.co.in

+91 9991705007

www.facebook.com/poultryplanner123

www.facebook.com/dairyplanner123

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

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

Advertisement

Advanced Bio-Agro Tech Limited	35
Alura Animal Health & Nutrition	19
Aviagen	05
Ayurvet Limited	Back Opening
Biosint	21
Biosint	73
B.V. Bio-Corp Pvt. Ltd.	27
Gupta Agro Industries	33
Huvepharma	43
Himalaya Wellness Company	01 (A)
Himalaya Wellness Company	04
Indian Herbs	23
Kemin	Front Inside
Maxima Nutrition	Back Title
Natural Herbs	17
Novus	09
Patel Feeders	68
Pixie Consulting Solutions Ltd.	07
Sapience Agribusiness Consulting LLP	15
Suguna Institute of Poultry Mgmt.	33
Suguna Foods	Back Inside
Top Syringe Manufacturing Company	25
The Poultry Expo	2 (A)
Uttara Impex Pvt. Ltd.	13
Uttara Impex Pvt. Ltd.	31
Vaksindo Animal Health Pvt. Ltd.	11
Venky's	29
Ventri Biologicals	Front Opening

Press Release

48	2023 Alltech Agri-Food Outlook Shares Global Feed Production Survey Data and Influencing Trends in Agriculture
50	Novus India launches Breeder Management and Nutrition: Moving the industry forward book during Poultry India Expo 2022
52	Eddy van Lierde Promoted to Global Head of Incubation Services
53	DSM and Foundation Earth Partner to Promote Food Eco-labeling
54	New Dynamic Leadership Team at CLFMA OF INDIA 2022-2024



Features

06	Editorial
08	Advertisement Index

Departments

Steller	44
Top Veterinary Institutes in India	
Making A Difference	46
Endeavors of Pashupati Group	
Egg Prices	47
Save The Date	56
Interview	57
News	59
Editorial Calendar	72
Subscription Form	72

Article

10	Pratapdhan Chicken: A Boon for The Rural Areas of Southern Rajasthan Dr. Pratibha Jareda
16	Distiller's Dried Grains with Solubles: A Grain Substitute for Economic Poultry Ration Sanket M. Kalam
20	Need of Enzymes in Poultry Production Dr. Sharad Durge
24	Role of Vitamin D in Poultry Nutrition K. R. Harini
30	Sustainable Practice in Dairy Farm Koshish
34	Chicken Meat Industry Fast Adapting to Changing Times Mr. O. P. Singh
38	Bird Flu Continues to Spread in Mammals - What this Means for Humans and Wildlife Divya Venkatesh
40	How do you Make a Universal Flu Vaccine? A Microbiologist Explains The Challenges, and How mRNA Could Offer a Promising Solution Deborah Fuller
42	The Pelleting Process: Factors Influencing Phytase Recovery Lode Nollet, Huvepharma

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™

Pratapdhan Chicken: A Boon for The Rural Areas of Southern Rajasthan



Dr. Pratibha Jareda^{1*}, Dr. Siddhartha Mishra² and Dr. Mukesh Bhakat³

¹Ph.D. Research scholar, ²Principal Scientist, Livestock Production Management Division, ICAR-National Dairy Research Institute, Karnal-132001, Haryana

³Associate Professor, Department of animal production, Maharana Pratap University of Agriculture & Technology, Udaipur-313001, Rajasthan

Introduction

Livestock, poultry farming, and agriculture are essential to our country's economy. Indian agriculture contributes 28% to India's gross domestic production (GDP) (Jha et. al., 2013), among which 17% of income comes from poultry alone. India ranks third in egg production and fifth in meat production worldwide (Livestock Production Statistics of India, 2019). The Indian poultry industry is growing at 8 to 10% for eggs and 15 to 20% for broiler productions (Srivastava, 2011). Countries poultry population was 851.81 million in 2019, an increase of 16.8% over the previous census. The country's total backyard and commercial poultry are 317.07 million, a rise of 45.8% and 534.74 million and an increase of 4.5% in 2019, over the previous census, respectively (20th livestock census). The contributing factors for this faster growth rate are a continuous increase in demand for poultry products, improved genetic potential of the birds due to continuous and accurate selection and breeding strategies, improvement in managerial practices as well as health cover and availability of the quality balanced feed (Mohapatra and Mishra, 2008). Phenomenal growth has been achieved in intensive poultry farming in India during the last three decades, particularly in urban areas. On the other hand, the chicken population in rural areas increased marginally. Moreover, due to their low productivity, their contribution to the total poultry production was almost static during the same period; as a result, poultry products are expensive (10-40%) in rural areas.

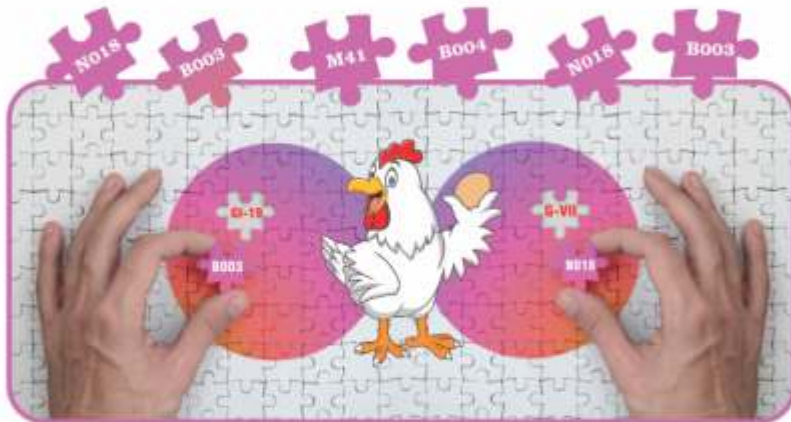
The country's rural and tribal areas have

found success with high-yielding chicken types as a source of income and nutritional security (Rajkumar and Rama, 2015). A 46% population growth in backyard poultry in 2019 (BAHS, 2019) can be attributed to the marketing of improved chicken kinds for higher productivity. Backyard poultry contributes about 17% to the total egg production, and chicken contributes up to 50% of the total meat production. Despite the high quality of poultry product manufacturing, there are much fewer chicken products available than the suggested levels of 180 eggs and 11 kg of meat; the situation is worse in rural areas. About 79 eggs and 3.2 kg of chicken meat are available annually per person on a per capita basis.

Rajasthan ranks 18th in poultry population, 1.46 million, (Livestock Census, 2020), which is less than 2 % of India's poultry population. The egg production in the state has reached 6631 lakh, with a share of 1.31% in the country's output. The per capita availability of eggs in year in Rajasthan is deficient (22 eggs) as compared to the national average of 79 and much lower than the eggs recommended by the Nutritional Advisory Committee of ICMR (180 eggs per capita per year), which suggests the excellent scope of improvement in poultry production in Rajasthan.

Pratapdhan, a dual-purpose chicken variety developed for rural poultry production at MPUAT, Udaipur, is promoted in Rajasthan. Various improved chicken varieties suitable for backyard poultry farming were developed over the years from different places, these varieties resemble





Broader Protection against - NDV virulent genotypes and - IBV Genotype I variants.

“Under perfect conditions, many vaccines work, but conditions are not perfect in the field.”

Combined Inactivated Vaccine in oil emulsion
Newcastle Disease virus - N018 strain
IBV multi strains : M-41 + B003 + B004 strain

VAKSIMUNE[®] ND L -IBplus



NDL IBplus



NDL Inaktif



NDL Inaktif 0.1



Inactivated Vaccine in oil emulsion

**VAKSIMUNE[®] NDL Inaktif
VAKSIMUNE[®] NDL Inaktif 0.1**

Newcastle Disease virus - N018 strain



indigenous fowl in body conformation, multi-coloured plumage, dull shanks, pink skin, and single comb, to scavenging in small-scale poultry operation by both public and private sector organizations, have generated new opportunities for poultry production.



Salient Features of Pratapdhan chicken

- It can be easily reared in rural areas.
- Along with being more liked by the village people due to the colour of this improved chicken being multi-coloured, its colour variation is also helpful in protecting it from its enemies.
- Its long legs protect it from enemies in rural areas.
- The colour of eggs is light brown, like native eggs.
- At 20 weeks (5 months), the body weight of 1478 to 3020 g of male and 1283 to 2736 g of female chicken.
- Egg production is approximately 161 eggs/annum.



- Four times more egg production than indigenous chicken.
- 75% more weight than indigenous chicken.

Rearing of Pratapdhan

Brooding of chicks:- Brooding is the care and management of newborn chicks for successful rearing without a hen.

Table -1 Physical Characters of Pratapdhan	
1	Colour
	a. Plumage colour Multi-colour
	b. Plumage Pattern Males- Solid Females- Dull
	c. Skin colour Yellow
	d. Shank colour Yellow
	e. Earlobe colour Red
	f. Comb colour Red
2	g. Eye colour Comb Black
	a. Type Single
	b. Size Medium in females and medium to large in males
3	Other specific visible traits Large and red wattles in males

Pratapdhan chick needs brooding care for the initial 4-6 weeks. Brooders built of wood, metal, or locally available materials generate artificial heat. Depending on the available facilities, the brooding arrangement can be set up on

Age (day)	Name of vaccine	Strain	Dose	Route
1	Marek's Disease	HVT	0.20 ml	S/C injection
7	Ranikhet	Lasota	One drop	I/N or I/O
14	Infectious bursal disease	Gum-boro (living mild)	One drop	I/N or I/O
28	Ranikhet	Lasota	-	Drinking water
42	Fowl pox		0.2 ml	Intramuscular

the floor or in a cage. Brooder houses, feeders, drinkers, and hovers should be disinfected before the arrival of chicks. On the floor, 2-3 inch clean bedding material spread uniformly during brooding. Spread newspaper over the litter for the first few days to stop the chicks from

eating it until they learn to consume feed since the litter could suffocate them to death. Alternately place feeders and drinkers. A chick guard can be used to limit the movement of chicks close to the heat source.

Feeding:- Up to 6 weeks of age, balanced feed fortified with required minerals, vitamins, antimicrobial, and

anticoagulant should be fed ad-lib. It is always important to ensure easy access to feed to all the birds and offer feed daily. 2400 Kcal ME, 16% protein, 0.36% methionine, 0.77% lysine, 0.35% accessible phosphorus, and 0.7% calcium are required for pratapdhan chicks. Local feed components might be used to prepare the feed.

Health care:- The Pratapdhan need protection against common diseases like Mareks, Ranikhet, and IBD. The vaccination schedule is as follows.

Free Range Management

At eight weeks, of age, birds will attain 681- 718g body weight (Table-2). With 10-20 birds per house depending on the location and Natural Feed Base accessible, these birds can now be raised in backyards under free-range conditions. The birds are kept in the night shelter at night after being released for foraging during the day. The male can be sold at any-time after attaining the minimum market body weight. Females of Pratapdhan lay about 150-160 eggs per year.

Feeding:- Once Pratapdhan learns to scavenge in the wild, it can readily pick up

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.



food from backyards while living in a free-range environment. Depending on the amount of additional feed supplementation necessary for vegetation intensity, waste grains, insects and grass seed, etc. In general, free-range birds can scavenge enough protein to satisfy their needs. Consequently, providing grain to the birds (maize, wheat, Jowar, barley, broken rice) is always beneficial to sustain production. When the pullet (female) is 6 to 6.5 months old, care should be taken to keep her weight within the range of 2.2 to 2.5 kg. Egg production may be lowered by excess body weight. Providing calcium sources (lime powder, shell grit, stone grit, etc.) @ 3–4 g/bird/day throughout the laying phase can reduce the broken/shell-less egg to a minimum.

Housing:- Housing is necessary for rain protection and nighttime shelter. About 1.5 to 2.0 square feet-of floor space is required per bird. House can be made using locally available low-cost material, i.e., stone, wire mesh, bamboo, wood, etc. Thatched roofs made of dry leaves or asbestos sheets may be used. The house should be well-ventilated and dry. Bedding can be made from locally accessible resources such as pulverised nuts, dry leaves, and rice husk. To keep the litter dry, turning is crucial once a week.

Health care:- The most important disease that affects birds under free-range farming is Ranikhet disease. Follow the proper vaccination schedule Pratapdhan birds should be vaccinated against Ranikhet disease at six months, preferably before the onset of summer. Night shelters should have good ventilation, light, and protection from predators. Deworming at 2-3 months intervals is required under free-range conditions.

Table 3 Performance of Pratapdhan chickens

Economic traits	Performance
• Day old body weight (g)	35
• Body weight at 8 wks of age (g)	681-718
• Body weight at 20 weeks of age in males (g)	2309
• Body weight at 20 weeks of age in females (g)	1734
• Body weight at 40 weeks of age in males (g)	2491
• Body weight at 40 weeks of age in females (g)	2230
• The average age at first egg production (d)	125
• Age at sexual maturity (d)	170
• Average egg weight (g)	50
• Annual egg production	150-160

Economics of Pratapdhan under Backyard / Free Range System

Table – 4 Economics of a unit of 20 Pratapdhan birds

S.No.	Particulars	Quantity	Unit cost	Amount
1	Fixed Cost			
	Cost of housing			
	a. Chick/ layer house (sq feet)	0	0	0
	Total			0
	Total Fixed Cost			0
2	Variable Cost			
	a. chicks six weeks	20	85	1700
	b. Feed (Maize) for adult stock (9 x 40 x 365=100 kg)	135	16	2160
	c. Feed (Maize) for grower (18 x 25 x100 = 50 kg)	50	16	800
	Total			4660
	Total Variable Cost			4660
	Income			
	a. Sale of male	9	500	4500
	b. sale of eggs (9x147=1323)	1323	10	13230
	c. Spent hen	9	300	2700
	Total Income			20430
	Total variable cost			4660
	Net Profit (Total Income less variable cost)			15770

Conclusion

Backyard poultry farming with the Pratapdhan breed requires less capital, can utilize family labour, and is a highly remunerative venture that has become an effective tool to empower rural women by making them financially stronger to meet routine expenses. Pratpadhan, a dual-purpose breed developed for backyard poultry production, requires very little input yet produces a higher number of eggs and has a higher growth rate.

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
325 HRDH Layout, 4th A Cross
3rd Block, 3rd Main, Kalyan Nagar
Bengaluru 500043, Karnataka (KA), INDIA

sapience

Distiller's Dried Grains with Solubles: A Grain Substitute for Economic Poultry Ration



Sanket M. Kalam, H. H. Savsani, Sneh D. Patel and Saman Y. Belim
Department of Animal Nutrition, College of Veterinary Science and Animal Husbandry, Kamdhenu University, Junagadh.
Corresponding Author: Sanket M. Kalam
Email: kalamsanket@gmail.com

Introduction

Distiller's dried grains with solubles (DDGS) is a feed ingredient substitute that is widely utilised in the feed industry due to its high nutritional value and low manufacturing cost. It is one of the by-products of the dry milling industry that consists of undigested grain components from ethanol fermentation of cereal grains such as maize, barley, wheat, sorghum, and rye. Corn and wheat are the most often used energy and protein supplements in livestock feed.

DDGS is considered as a "middle protein carrier" because it has a crude protein level that lies between soybean meal and maize. Because of its high energy, mid-protein, and digestible phosphorus content, DDGS is an attractive partial alternative for some of the more expensive and traditional energy (corn), protein (soybean), and phosphorus (mono- or dicalcium phosphate) sources used in livestock feeds. DDGS is a valuable feeding source for

livestock and poultry producers since it has a longer shelf life (nearly indefinite) than normal maize and soybean meal.

Nutrient content of DDGS

Nutrient variability in DDGS based on feedstock grain

Effects on poultry

DDGS has been recognized as a valuable source of xanthophylls (Runnels, 1957) and linoleic acid (Scott, 1965), as well as an excellent supply of protein, energy, water soluble vitamins and minerals, and amino acids for poultry (Purdum et al., 2014). As reported by Xue et al. (2012) lysine (1.23%) is the first limiting amino acid in DDGS but it is rich in methionine content (1.19%). Youssef et al. (2009) studied the use of DDGS as a feed ingredient in poultry ration and stated that DDGS may be considered as an alternative conventional feedstuff to other feed ingredients in poultry diets for energy and protein. DDGS may be a desirable, affordable alternative to maize and soybean meal in poultry rations (Swiatkiewicz et al., 2014).

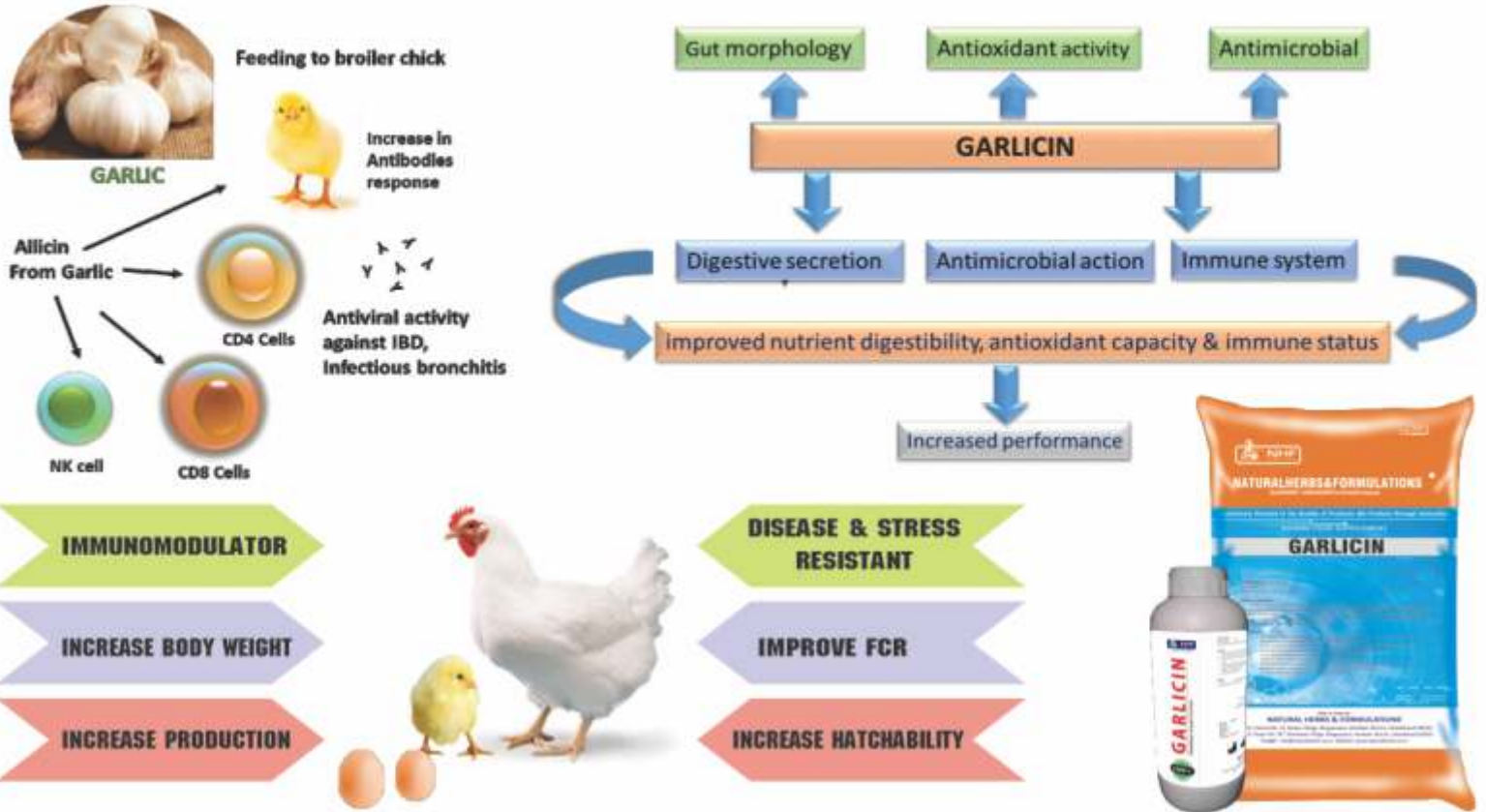
Nutrient variability in DDGS based on feedstock grain

	Dry matter (%)	Protein (%)	Oil (%)	NDF (%)	ADF (%)	References
Corn	94.7 – 95.5	28.5 – 29.9	9.7 – 11.0	35.8 – 39.7	15.3 – 16.7	Chrenkova et al., 2012
	87.1 – 92.7	26.0 – 31.7	9.1 – 14.1	33.1 – 43.9	11.4 – 20.8	Cromwell et al., 1993
	87.2-90.2	28.7 – 31.6	10.2 – 11.4	36.7 – 49.1	13.8 – 18.5	Spiels et al., 2002
	N/A	30.8 – 33.3	10.9 – 12.6	N/A	15.4 – 19.3	Belyea et al., 2004
Wheat	93.3 – 94.3	34.1 – 35.1	4.2 – 4.7	34.0 – 40.4	18.2 – 25.2	Chrenkova et al., 2012
	93.1 – 94.4	38.4 – 40.1	4.5 – 5.4	46.4 – 49.7	10.4 – 11.6	Nuez Ortin & Yu 2009
Barley	27.7-30.1	14.9 – 15.9	5.7 – 6.3	78.9 – 79.5	30.3 – 31.8	Mustafa et al., 2000



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

A. Effects on Broiler

Oryschak et al. (2010) compared the feeding value of extruded and non-extruded wheat and corn distillers dried grains with solubles at a level of 0, 5, or 10% for broilers to compare the growth performance. They observed that there was no negative impact on the weight or yield of the breast meat when corn or wheat DDGS were included up to 10% of the diet. Rice DDGS can also be used as an alternative protein meal for economic broiler production up to an inclusion level of 12.5% in diets for broiler chickens (Dinani et al., 2018a). In broilers, optimum inclusion rates should be between 12 and 15%. (Lumpkins et al., 2004). For good-grade (light) DDGS, these levels can be raised to 20% and above when the diet is nutritionally balanced with special attention to the amount of digestible lysine.

B. Effects on layer

Egg production, egg quality traits and immune competence in laying hens were all improved by incorporation of 10% rice DDGS in phases I and II of feeding (Lumpkins et al., 2004). Furthermore, Krawczyk et al., (2012) also stated that, layer diets can be supplemented with 10% DDGS, which can increase egg production, lower egg weight and improve feed conversion per egg laid. 10% rice DDGS added with protease enzyme can improve gut health and is cost economics in layers (Gupta, 2016). Incorporation of 15% DDGS in the ration have no negative impact on egg production, egg weight, feed consumption or feed utilization (Lumpkins et al., 2005) however egg production, specific gravity production and haugh unit were

not affected even at higher dietary inclusion level during laying period (Ghazalah et al., 2011). Whereas Ghazalah et al. (2011a) reported that increasing the dietary inclusion of DDGS reduces egg production, egg weight and egg mass in laying hens.

Constraints

When large amounts of distillers' grain are fed to animals, it may cause sulphur toxicity as sulphuric acid is used in the ethanol production process thus, ethanol by-products might contain high concentrations of sulphate. Central nervous system disorders are caused by an excessive concentration of H₂S, which inhibits the oxidative processes in nerve tissue.

Maize is sensitive to fungal infections that produce mycotoxins thus it is a risk factor. Mycotoxin concentrations in maize distillers' grain are approximately three-fold times higher than in original grain due to the concentration that non-starch components undergo throughout the distillery process. It is therefore important that maize intended for bioethanol production be devoid of mycotoxins before processing. There are various methods to reduce mycotoxin levels, such as eliminating damaged grains before they enter the process. To detoxify mycotoxins in stillage, chemical treatments (NaOH, NH₄OH, H₂O₂, NaCl, CH₂OH) must be done.

"Molasses balls" are likely to form if the temperature of the distillers' grains is improper when the solubles are introduced back. These can later result in significant issues with the pellet mill's

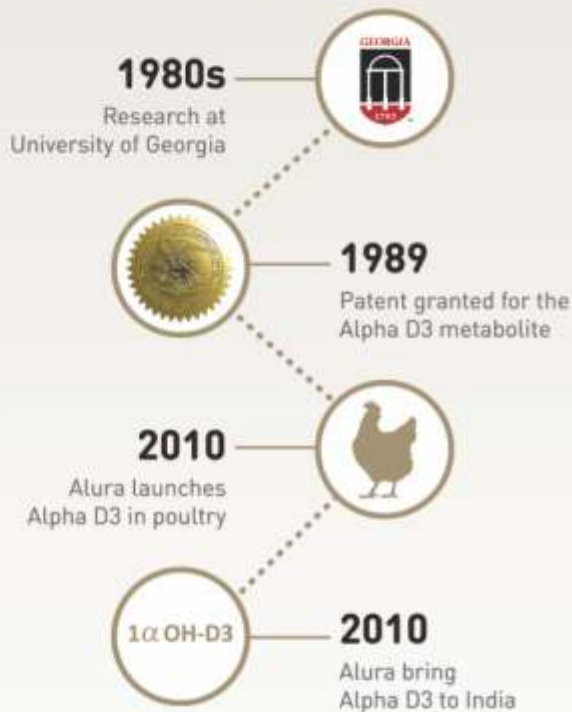
throughput. Because of the springiness of the fibre inside the co-product, pellet durability can be greatly reduced when DDGS is utilised at more than 5% of the diet.

To optimize the rate of conversion to ethanol, maize is sometimes finely milled before fermentation. Bridging and flowability of the resulting DDGS during shipment and storage might become problematic if the average particle size is 300 microns or less. If the DDGS particle size is too small (between 300 and 400 microns), a large portion of the DDGS may pass through the bird's gizzard more rapidly, minimising its exposure to proteolytic digestion. As a result, it reduces the bird's ability to digest nutrients.

Conclusions

Feed cost remains the largest portion of the poultry industry and the worldwide market demand for soybean, maize and other grains is increasing gradually, which has led to a steep rise in their price, making it difficult for economical feed production for the poultry industry. Thus, DDGS has a lot of potential to be used as an alternative grain resource in the feed industry since they are highly nutritious, economical and cost-effective feed resources which also have greater feeding values than other original grains. For poultry, DDGS is a rich nutritional source of energy, protein, water-soluble vitamins and minerals thus, extra protein or amino acid supplementation can be utilized to improve production. Even with certain constraints, DDGS is a useful feed ingredient that may be effectively included in poultry diets to reduce expenses for overall benefits.

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



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.



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



Need of Enzymes in Poultry Production



Dr. Sharad Durge

PhD, Animal Nutritionist – PAN India
Sapience Agribusiness Consulting LLP,
Bengaluru

A chicken has a very simple digestive system. The chicken digestive system comprises the beak, mouth, oesophagus, crop, proventriculus, gizzard, small intestine, colon and cloaca. The digestive system, the salivary gland, the liver, and the pancreas help digest the food, and the residual wastes are eliminated from the body. The digestive system is responsible for ingesting food, its breakdown into its constituent molecules and absorption into the bloodstream, and waste elimination. Since the chicken has a simple digestive system, the diet must be high quality and easily digestible to attain optimum and productive performance.

During digestion, the enzyme amylase, produced by the salivary and oesophageal glands, breaks down the starch carbohydrates. However, the amount of enzyme action at this stage is minimal. The first major enzyme activity occurs in the proventriculus and the gizzard. The secretions of the proventriculus (glandular stomach) include hydrochloric acid to lower the pH of the system and the food mixture, the enzyme pepsin that acts on protein, and the hormone gastrin that stimulates the production and release of gastric juice in the proventriculus and pancreatic juice from the pancreas. The gizzard is a very powerful organ which physically breaks the food particles into smaller sizes to make

the work of the enzymes easier. At the same time, the enzymes previously released into the food with the saliva and by the proventriculus are thoroughly mixed into the food, improving their ability to carry out their work. The enzymes amylase and pepsin act on starch and simple protein to break them down into simpler proteins. However, there is a limitation on the production of these enzymes in the body.

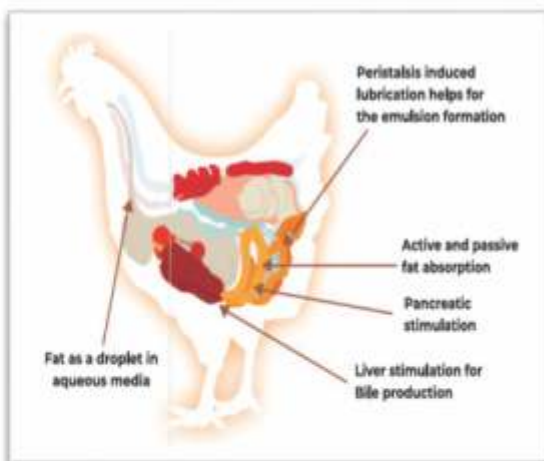
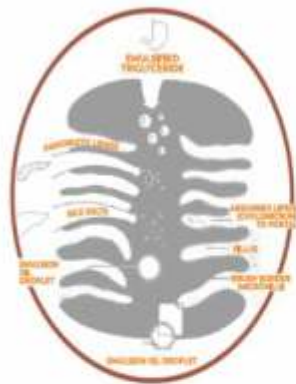
When food enters the duodenum, pancreatic juice and bile from the liver enter via ducts located at the distal end of the duodenum at about the junction of the duodenum and the jejunum. However, because of the backflow of pancreatic juice and bile towards the gizzard, the actions of these secretions start earlier in the digestive process than would be expected by their entry point to the small intestine. Another effect of this secretion is an increase in the intestinal contents' pH in the duodenum's latter half, from strong to weak acid. As a result, most of the starch and varied amounts of protein and lipase are digested during this digestion process. In contrast, many other components like non-starch polysaccharides (NSP), complex proteins, lipids and phytic phosphorus are excreted undigested due to a lack of enzymes for their digestion.

The chicken's dietary energy and protein components are derived



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

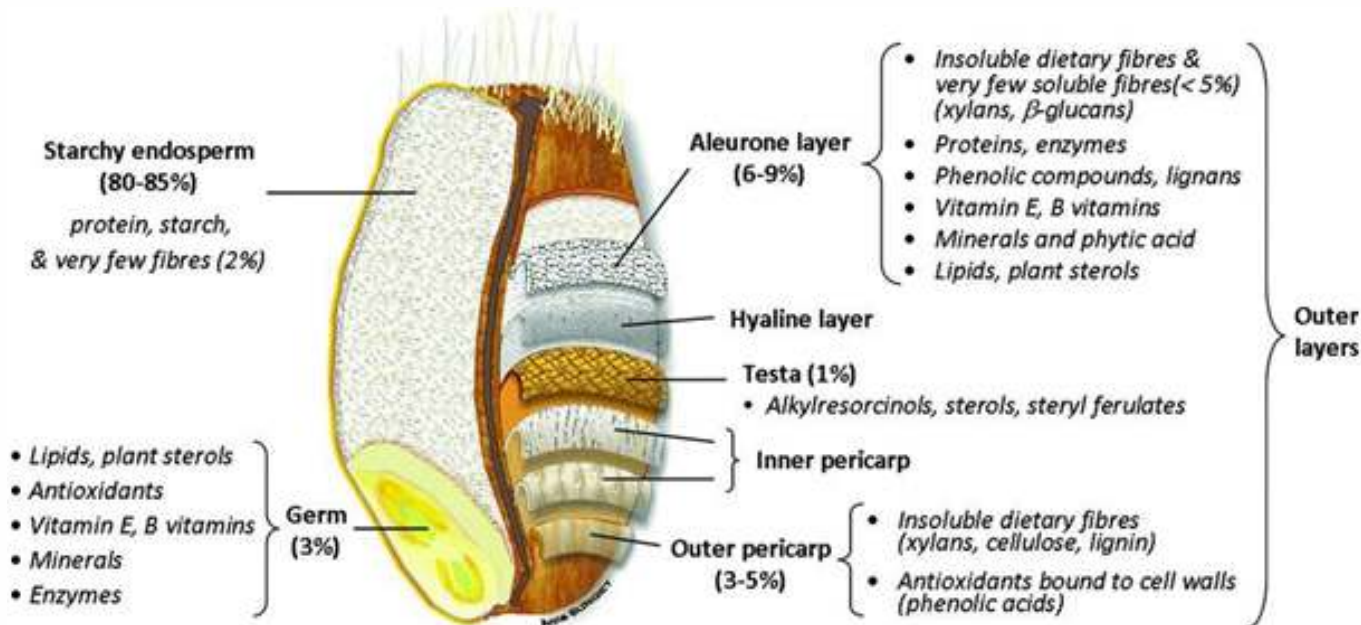


Fig. 1. Composition of seed. PC: Surget and Barron (2005)

from various crop seeds. Plants produce seeds for the reproduction and propagation of their species. During seed production, due care is taken to protect the germ from external pests and changing climate.

The germ (3%) and endosperm (80%) are protected by many insoluble fibrous layers aleurone layer (6-9%), Hyaline layer, testa (1%), inner pericarp and outer pericarp (3-5%). Most fibrous layers contain NSPs (6-33%) like xylans, beta-glucans, mannans, pectins, cellulose, phytic acid, vitamins, minerals, lipids, and phenolic acids.

Raw materials for poultry feed are purchased on a weight basis. When seeds are processed to make poultry feed, NSPs and other complex materials remain. NSPs and other nutritional complexes do not get digested during digestion and often act as an anti-nutritional factor in the system. NSPs soak water in the intestine and increase the viscosity of digesta. This viscous material forms a jelly-like material and

encapsulates other nutrients like Protein, Mineral, and Vitamins, making them unavailable for enzymatic digestion and absorption. Unabsorbed material is excreted out and pollutes the environment. This way, the dry matter gets wasted, and ultimately, money is wasted.

Species-specific enzymes are insufficient to utilise feed raw materials' potential fully. As a result, raw material components like NSPs and phytic acid go unutilised, and potential digestible proteins and lipids are underutilised due to lower levels of enzymes and individual variability in enzyme production.

Supplementing exogenous enzymes improves nutrient digestibility (Lei et al., 2017). Exogenous enzymes like Cellulase, Xylanase, Mannanase, Beta-Glucanase, Pectinase, and Phytase helped utilise unutilised NSPs and phytic acid. At the same time, supplementation of amylase and multi-protease helped realise maximum utilisation of starch and protein. There are many

commercial enzymes available in the market with different combinations. Some contain Amylase, Cellulase, Glucanase, Mannanase, Pectinase, Xylanase, Phytase, Protease, Lipase, and probiotics like Bacillus Coagulance. Combining many enzymes is a better option for exploring the potential of raw materials, even at lower quality. Moreover, adding probiotics and systemic enzymes helps better nutrient absorption and performance.

The utilisation of exogenous enzymes contributes to the nutrient composition and availability in the final feed. Therefore, feed costs can be optimised using the nutrient availability matrix value. Exogenous enzymes are a boon to the feed industry in the current scenario of rising raw material prices. Using exogenous enzymes in feed helps achieve better FCR, uniformity in the flock, improved health, better use of cheap feed ingredients, and reduced feed cost.



Your Trusted BioCholine Since 2001

BioCholine

Natural, stable and high strength conjugated choline



Indian Herbs

is the pioneer to innovate the concept of natural choline for animals species and is the **No. 1 company** to launch Natural Choline- **BioCholine** for the first time in India in the year 2001.

Four years after its launch, **BioCholine** was introduced to global market in 2005.

Today **BioCholine** is a millennial brand that has spanned the world across 7 continents & has legacy of global presence in more than 50 countries.

Natural and safe

Non-hygroscopic

Suitable with premixes

TMA free and non-corrosive

Outstanding bioavailability

Lower Dose & cost effective



PRESENTATION

25 kg

Our customers know the true worth,
because originality matters

Being
Original

FEED INCLUSION RATE

750gm BioCholine

can replace 1 kg of choline chloride (60%) with better production performance and to help prevention of FLS

Role of Vitamin D in Poultry Nutrition



K. R. Harini

PhD Scholar, ICAR - Indian Veterinary Research Institute, Bareilly (Uttar Pradesh) 243122

K. R. Sriranga and Tejeshwari Satpute

PhD Scholars, ICAR-National Dairy Research Institute, Karnal (Haryana) - 132001
Corresponding Author:

K. R. Harini

Email: harinikr20@gmail.com

Introduction

Vitamin D plays an important role in the poultry nutrition as it involves in the calcium absorption and other biological process. Vitamin D is a steroid compound that includes provitamin D, pre-vitamin D, vitamin D and Vitamin D metabolite. Vitamin D is a fat-soluble prohormone that has an anti-rachitic properties. Vit. D is generally available in two forms, ergocalciferol (Vit. D₂) synthesized in the plant leaves; and cholecalciferol (Vit. D₃) synthesized in the skin of animals. The most active form of vitamin D is vitamin D₃. The Vitamin D₃ in circulation is synthesized from precursors such as

7-dehydrocholesterol in skin, cholecalciferol and/or ergocalciferol (D₂) supplementation in diet and also 7-dehydrocholesterol content of pre-gland secretion, which spread to the feather and converted into pre-cholecalciferol and cholecalciferol which is ingested by the bird. The vitamin D₃ is synthesized from its precursor in the skin under the effect of UV irradiation. The modern poultry rearing system is intensive and are kept totally inside the shed without access to sunlight which altered their nutritional requirements for vitamin D and made it most essential component of the poultry nutrition.



Cage layer fatigue



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)



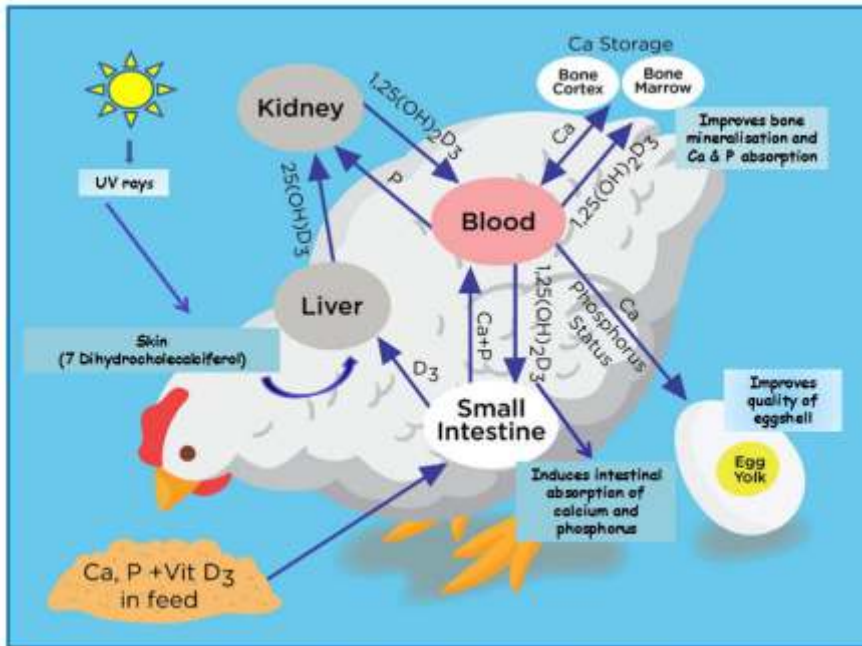
VetDose **Prime**
Bottle Mounted Set
(BMS)



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

- Durability
- Reliability
- Comfort

All spare parts easily available



Vitamin D₃ attains the biologically active form after metabolic alteration which mainly occurs in liver and kidney. Vitamin D₃ is converted to 25-hydroxy-cholecalciferol (25-OH-D₃) in liver and then in kidney it is converted to 1,25-dihydroxycholecalciferol (1,25-(OH)₂-D₃) and 24,25-dihydroxycholecalciferol [24,25-(OH)₂D] (DeLuca, 1988). Further these are converted to 30 or more metabolites out of which 1,25-(OH)₂-D₃ is the active form.

The vitamin D is transported through Vitamin D binding protein (DBP) which is in the form of apoprotein in plasma. The relative affinity of binding protein to Vitamin D compounds is 25-(OH)D₃ = 24,25-(OH)₂D₃ = 25,26-(OH)₂D₃ > 25-(OH)D₂ > 1,25-(OH)₂D₃ > vitamin D₃ (Drescher et al., 1969). The binding capacity of Vitamin D₂ with DBP is very poor that restricts the efficient utilization of vitamin D₂ from birds. Vitamin D intracellular receptor (VDR), a steroid receptor gene superfamily assists in functionality of vitamin D. The VDRs have more affinity and specificity to 1,25-(OH)₂D₃.

The target tissues for 1,25-(OH)₂D₃ are intestine, bone, parathyroid

gland and kidney. The main biological role of 1,25-(OH)₂D₃ is to maintain the homeostasis of calcium and phosphorus by calcium and phosphorus absorption in intestine, bone homeostasis, calcium mobilisation in the bone, calcium reabsorption in the kidney and enhanced utilization of phytophosphates. Hence, vitamin D plays an important role in bone and egg shell mineralization. The deficiency of vitamin D may lead to rickets, dyschondroplasia and leg problems in addition to deterioration of egg quality. Besides bone mineralization, vitamin D also increases the immunity of poultry and possesses antioxidant properties. Vitamin D supplementation to poultry not only improves the production performance and health of poultry, but also provides vitamin D rich poultry products to humans.

Effect of Vitamin D on broilers

The NRC requirement of vitamin D₃ for broiler is 200 IU/kg from 0-3 week and from 6-8 week and 300 IU/kg from 3-6 week. BIS specification of Vitamin D₃ is 600 IU/kg for broiler chicken, in turkey 1100 IU/kg, in ducks 400 IU/kg,

Japanese quail 750 IU/kg. Vitamin D₃ supplementation in poultry helps to improve the growth performances by increasing feed intake, feed efficiency, feed conversion ratio, body weight gain. In addition, vitamin D supplementation helps to improve bone mineralisation and reduces bone abnormality, lameness, tibial dyschondroplasia (TD), hock dermatitis and footpad abnormalities. Furthermore, it helps in muscle growth and improves meat quality by increase in theyellowness and lightness of breast and thigh muscle, decreases in the shearing force of meat, meat colour, juiciness and tenderness.

In recent studies, supplementation of the 25-OH-D₃ (0.2 kg/1000 litre solution) in drinking water has shown increased body weight gain and decreased incidence of lameness by reducing tibial dyschondroplasia and other leg abnormalities in the broilers.

Supplementation of more vitamin D than NRC requirement i.e., upto 2000- 4000 IU/kg has shown increased growth performance, bone quality, walking ability and reduced the incidence of tibial dyschondroplasia. It improves the dressing percentage, breast meat yield and meat quality by increasing juiciness, tenderness and flavour of the aged meat. However, some authors have reported no additional effect on growth performances when cholecalciferol supplementation was above 3500 IU/kg.

The 25-OH-D₃ is the most active form of vitamin D compare to other forms. It has been reported that the replacement of cholecalciferol by 25-OH-D₃ has shown twice improved in body weight gain and bone mineralization of femur, tibia, and metatarsus. The complete or

We are the
Largest Manufacturer
of Vitamin Premixes



BREEVIT

Vitamin Premix for Breeders

LAYVIT

Vitamin Premix for Commercial Layers

BROVIT

Vitamin Premix for Commercial Broilers

BROVIT PLUS

Vitamin enriched premix for Commercial Broilers

**These superior Homogeneous Premixes manufactured at state-of-the-art Plant
brought to you by the world's largest producer of vitamin premixes**

partial replacement of cholecalciferol by 25-OH-D3 increased the breast and pectoralis muscle growth, muscle protein synthesis and decreased the inflammatory immune response, intensity of footpad and hock dermatitis and incidence of tibial dyschondroplasia.

Effect of vitamin D on layers

NRC requirement of vitamin D3 for white egg laying chicken is 200 IU till 18 week, 300 IU from 18 week onwards till first egg lay. Vitamin D has an effect on Body weight gain and feed intake and feed efficiency.

According to the researchers the vitamin D supplementation above the NRC specification had shown improved layer performance and egg quality. Upto 4000 IU/kg shown increase in body weight gain, tibial ash concentration, decreased incidence of tibial dyschondroplasia and rickets. But the supplementation upto 6000 IU/kg has shown increase in egg weight and egg shell quality without having additional effect on laying performance and the bone mineralization.

In old age birds the active vitamin D3 metabolites decreased due to reduced activity of renal 25-hydroxylase leading to increased eggshell cracks in layers. Hence the substitution of cholecalciferol by 25-OH-D3 partially or completely in layers diet improved feed conversion ratio, body weight gain, increased eggshell percentage and thickness, increase in hatchability and decrease in early embryonic mortality. Maternal supplementation of cholecalciferol and 25-(OH)D3 improves the progeny skeletal development, growth, body weight gain, morphological maturation, intestinal function and decreases the incidence of TD and rickets in offspring. The effect was more in the

chicks of young birds (30-37 weeks) than the chicks of older birds (more than 45 weeks).

Antioxidant property of vitamin D

Vitamin D plays an important role in antioxidant properties of egg similar to other fat soluble vitamins viz., Vitamin A and Vitamin E. It acts as a membrane antioxidant by inhibiting iron-dependent liposomal lipid peroxidation. Among these several metabolites of vitamin D, the 7-dehydrocholesterol has more antioxidant property.

Immunomodulation property of vitamin D

Vitamin D has the effect on the innate and adaptive immune response by enhancing the growth of T and B lymphocytes. The vitamin D receptors (VDR) and the metabolizing enzymes are present on many cells including antigen-presenting-cells, T cells, B cells, monocytes/macrophages and dendritic cells (DC). The 25-hydroxyvitamin-D3 1-alpha-hydroxylase also known as (CYP27B1) converts 25-D to 1,25-D (calcitriol) locally in cells which express the antibacterial property in monocytes/macrophages. The 1,25-D inhibits the maturation of the dendritic cells leading to altered functionality of helper T-cell (Th). In the cells that lack CYP27B1 like neutrophils, epithelial cells, trophoblasts and decidual cells, the circulating systemic 1, 25-D synthesized in kidney have the antibacterial effect. Moreover, 25-D has the antibacterial effect on the cells like epithelial cells, trophoblasts and decidual cells. Vitamin D3 supplementation at 2.5mg/kg body weight causes immunomodulation, therefore the inflammatory response is not expressed during acute endotoxic shock in broiler chicks.

Fortification of eggs with vitamin D

The fortification of egg with vitamin D can be made in three ways: dietary supplement of vitamin D3/25-(OH)D3 to the hens, UVB exposure to hen, and exposing liquid egg products to UVB. The dietary Vitamin D3 increased the vitamin D content of egg yolk compared to vitamin D2 supplementation. Feed supplementation can provide higher levels of vitamin D in eggs than UVB exposure of the hens. High level of cholecalciferol supplementation upto 24,700 IU/kg can be used for the fortification of egg with vitamin D without any change in the physical and sensory property of egg, the lipid concentration and effect on the egg quality. The association between vitamin D3 in feed and vitamin D3 in eggs was found to be linear between trials. With feed containing 617.5 g/kg feed, a maximum of 20 g/100 g yolk was produced within the linear range.

Conclusion

The vitamin D is essential for many functions in the body like calcium and phosphorous homeostasis, bone mineralization, hormonal regulation. Vitamin D has effect on body weight gain, feed intake, feed conversion efficiency, muscle growth, fortification of egg, egg production and egg quality and also on immunity. The vitamin D requirement varies with the concentration of the dietary calcium and phosphorus level. The vitamin D level should be more than the present NRC requirement i.e. around 3,000 IU/kg. 1, 25-hydroxycholecalciferol is more efficient in commercial poultry nutrition. In addition, it is possible to create value added eggs, which are higher in vitamin D and therefore beneficial to human consumers.

Excellent start for
Chicks



ChicklineTM
Enriched with Vitamins & Minerals

Prevents dehydration and starvation stress during transit and during prolonged chicks holding



For further information please contact :

VENKY'S (INDIA) LIMITED

ANIMAL HEALTH PRODUCTS DIVISION

An ISO 9001 Certified Company



"Venkateshwara House", S.No.: 114/A/2, Pune - Sinhagad Road, Pune - 411 030 (India)

Tel : 020 - 24251803 Fax : +91-20-24251060 / 24251077

www.venkys.com

E-mail : ahp@venkys.com

Sustainable Practice in Dairy Farm



India is the largest milk producer. India is ranked 1st in milk production contributing 23% of global Milk production.

Major environmental issues of dairy farms and gaushalas (cattle shelters) are said to be related to disposal of dung and urinal wastewater. Poor handling and disposal of dung and wastewater causes water pollution and odour problem. The NGT, in July 2021, issued detailed guidelines for disposal of bovine waste.

Local bodies/corporations/SPCBs (state pollution control boards) should ensure that untreated waste is not discharged outside the premises, it said among other things.

Cow dung is a very serious problem for people around the farm. The problem is often caused by cow dung which is not handled professionally. Its existence pollutes the environment and can act as transmitter of disease. According to the India has 64.61% population in rural areas, where cows and buffalos are the major castles which can generate 10-15 kg dung/day.

India had 192.5million cattle and 109.9million buffalos in 2019, as per the data provided by National Dairy Development Board.

According to the United Nations Food and Agriculture Organisation, the animal waste on this planet produces around 55-65% of methane, which when released in the atmosphere can cause

global warming 21 times higher than the rate CO₂ does. People in Indian villages use cow dung for cooking purpose by direct burning, due to partial combustion of the dung, it produces smoke, which is very much harmful.

Cow Dung as an Alternative Source of Energy

Our dependence on non-renewable source of energy such as coal, oil and gases are increasing worldwide. Coal is the main source of energy in India, coal accounts for 44% of the total energy consumption. Although India being third largest coal producing country in the world, but we are facing a shortage of coal supplies.

As coal and other fossil fuels are getting depleted, we need to look for an environment friendly and renewable alternative energy sources.

Biogas plants help retain the organic fertilizer which increases agricultural yield, ensure cleaner environment, and provide an alternative source of energy for the farms.

Basic Design and Construction

Biogas plants can be designed and constructed as per the requirement, depending upon the amount waste available and the amount of gas needed.

Economic Viability

Generally setting up Biogas plants is considered expensive, to promote and support sustainability, Govt. of India is





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 -/ +918778408635,
Maharashtra – Swapnil Ballal -/ +919689948713, Telangana/ Andhra Pradesh
Orissa – Mr. Shankar Reddy -/ +918008802148

Collaboration with : 
Pancosma
makes sense

 **B-TRAXIM**
Fe
Cu
Zn
Mn

supporting by providing subsidies for setting up biogas plants, which may range from 25000 to 5cr and the payback period of a biogas plant is generally considered to be 3-4yrs. Besides supplying energy and manure, provides an excellent opportunity for mitigation of greenhouse gas emissions and reducing global warming and thereby earning carbon credit, which in turn can be encashed on a yearly basis, thus making biogas plants economically viable.

Biogas as an alternative to LPG for cooking

As the price of conventional cooking gas (LPG), is constantly increasing and becoming unaffordable for the major population, The gas produced from the biogas plant can be used as an alternative and thus affordable, as the gas is produced by the digestion of cattle dung, it is more economical and environment friendly.

Biogas as an alternative to electricity

The expenses on power used in a dairy processing unit is so huge as they must food processing units, and other major electrical appliances, the major expenses on the electricity can be reduced by converting the biogas produced to electricity by installing a biogas Genset.

Biogas as an alternative for pollution free fuel

If the biogas produced from the dairy farm which may include the cattle dung and any organic wastes generated in the farm, is considerably high, it can be further purified to CBG, which is equivalent to CNG and can be used in vehicles or filled in cylinders and sold to restaurants and other industries.

The black gold from the biogas plant

The slurry that is produced post the anaerobic digestion process, is considered black gold as it is very much rich in N, P, and K a very good fertilizer that can be sold to the farmers.

The electricity or the CBG produced, and the sale of organic fertilizers are the most important sources of income that are expected from the biogas system.

The technology involved in biogas production is simple and can be implemented cheaply and efficiently by employing small-scale digesters that are

easy to use and maintain.

These biodigesters can offer benefits to all spheres of society but are more beneficial to dairy farms. They can use the gas produced for cooking, running biogas generators, and fertilizing crops with the residual waste or sell them.

The unprocessed cattle dung or burning of the cattle dung is more dangerous as it emits greenhouse gases and CO2 and thus polluting the environment. Whereas the combustion of biogas provides a clean source of energy, as it does not produce soot, like firewood. This helps

reduce indoor air pollution, which in turn prevents respiratory infections and associated diseases. It can be a good alternative to LPG which is getting costlier.

Biogas plants significantly curb the greenhouse effect: the plants lower methane emissions by capturing this harmful gas and using it as fuel. Biogas generation helps cut reliance on the use of fossil fuels, such as oil and coal, the most important of its many advantages is that biogas can offer a decentralized energy solution.

Considering a farm with 100 Cows can generate 16kg of Biogas, which is equivalent to LPG by setting up a biogas plant of 40cum at the cost of INR 15 Lakhs if needed with the help of biogas Genset, the farm can utilize the gas for producing 60 units of power a day and the 200kg of dry manure obtained from the slurry output, which is highly rich in N, P, K in the following composition (Table - 1), considered as black gold, can fetch INR 1000/ day. The farm will get Rs. 3.5lakhs as subsidy from the Govt. Of India to run the plant and can claim carbon credit of approximately Rs. 1-2 lakhs annually, in addition the manure.

Slurry Type	Nitrogen (%)	Phosphorus (%)	Potash (%)
Digested Slurry	1.5 – 2.0	1.0	1.0
Vermicompost	0.5-1.5	0.1 – 0.30	0.15 – 0.56
Cow Dung	1.19	0.3	0.48

Ref: A study on bioslurry results and uses



GUPTA AGRO INDUSTRIES



Baby Feeder



Chick Feeding Tray



Mini Chick Feeder



Feeder with Cone Extension and Grill



Jumbo 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



Mr. O. P. Singh

CHICKEN MEAT

INDUSTRY FAST ADAPTING TO CHANGING TIMES

Historic existence of Indian Poultry Industry from the last 50 years not only have created many milestones but also evolved as major rural employment generator producing the ultimate protein. Poultry meat production increased from 3.725 million tons in 2014 to 8.80 million tonnes in 2020-2021 (BAHS, 2021). While the egg production increased from 82.93 billion in 2015-16 to 122.05 billion in 2020-21 (Dept. of DAHD Annual report 2021-22). The total poultry in the country is 851.81 million (including backyard poultry) in 2019, registered an increase of 16.8% in the total poultry.

Poultry development is one of the most flexible sectors in the country, fast adapting itself to the changing bio security, health and food safety needs. The total Commercial Poultry in the country is 534.74 million in 2019, increased by 4.5% over previous census.

Raw material cost is scaling up around 40%. Average rate of interest on capital cost, farming & feed model is above 8%. Feed raw material availability & high-end technology in feed & feed ingredient production need to be focused for feed and production cost reduction.

Capital cost for feed production and farming technology adoption is also an additional burden escalating cost of production, absence of infrastructure for distribution of livestock is probably the most expensive in India in comparison with the world average. Therefore, a joint response along with the government needs specialized attention. Although skilled manpower is a great shortage in the industry but it is still affordable comparatively towards standard, but skill cost is projected to grow average by 15% per year. Regulatory support required to make the product available throughout the year every season despite festivities and religious obstruction.

It is glaring to understand how India is transiting towards non vegetarian food, having more than 70% of population is non vegetarian but states like Haryana, Punjab, Delhi, Rajasthan, & Gujrat needs systemic approach from the industry to build robust favourable transition towards non vegetarian food.


ABTL



IF **GUT** HEALTH
IS YOUR
CONCERN!

ADD

3 MORE
FEATHERS
TO YOUR BIRD



INTEGRITY



PROTECTION



BALANCE

CosBacTM
Total Gut Health Solution

Multi-Species | Prebiotic Mix

Indications are extremely positive, only persuasive efforts can drive the social structure favourably towards poultry industry. States like J&K, Uttarakhand, Chhattisgarh, Telangana, Orissa, Andhra Pradesh, Tamil Nadu, Kerala & Karnataka are positively placed with its dominating non vegetarian population, who are looking for regionalized choices to enhance poultry protein consumption provided their choices are met comprehensively. Remarkably non vegetarian consumption is equally distributed between female and male population countrywide.



India's growing appetite for meat clearly indicates the opportunities and challenges towards big draw. As per data poultry meat consumption in 2020 onwards is beyond 4 million tonnes and similarly the domestic consumer wallet share towards food is ever increasing up to 35% of total expenditure outflow in the mass, despite India being growing economy. In the urban sector expenditure is done up to 43% towards food whereas below poverty line in the rural segment 57% outflow goes to food. We need to respond towards these challenges on behalf of industry ensuring adoption of poultry meat in regular food basket. Inclusion of rural mass which is the largest population in the country based on their affordability have to be catered strategically by the industry. To address the market on priority it is also evident that rural adults across India spent only 10% on the animal protein whereas the urban adults spend only 11 % on the animal protein. Thereby demand of rural areas to be stimulated favourably by the poultry industry. Consumption volume of poultry meat in India have ever increasing pattern with the largest consumption data of 4.1 million tonnes but forecasted to the beyond acceleration.

Although the worldwide total consumption of poultry meat by 2021 has reached to 133 million tonnes but Indian social fabric will drive ever increasing pattern up to 41% of all the protein meat by 2030. The increase in poultry meat is projected to account for over half of additional animal protein availability in the coming decade.

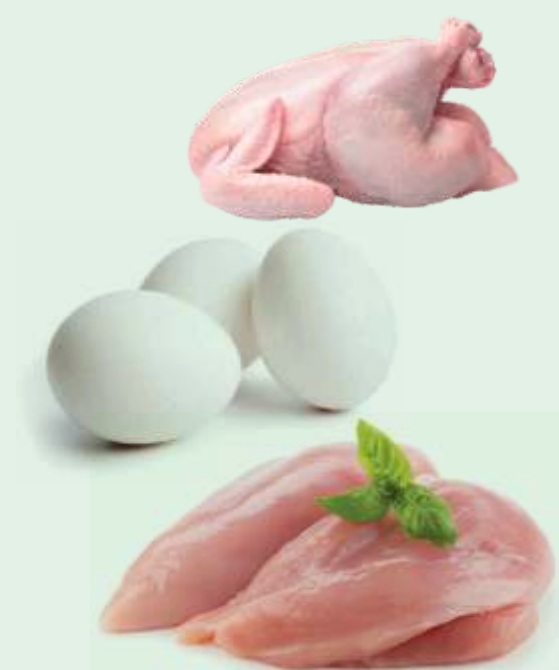
The challenging points are, how do we motivate and educate the transition with much categorized response.

Challenges are well described under my assumption:

- 1 Affordability and Cost Comparison Rural vs Urban.
- 2 Supply Chain & Logistics.
- 3 Product life cycle management - Storage & Warehouse setup – such infrastructures will help to stabilize the market in terms of fluctuations.
- 4 Religion & Vegetarianism.
- 5 Environmental Challenges.
- 6 International Trade compatibility.
- 7 Scale of Production.
- 8 Cost of Capital.
- 9 Regulatory Support.
- 10 Skilled Manpower/Technical expertise.
- 11 Over dominance of middleman – Development of reliable and stable market chain round the year is must.
- 12 NGO's Intervention motivated by other countries.

Overview of Opportunities for the sustainable growth:

- 1 Growth of Consumption.
- 2 International trade.
- 3 Protein sufficiency to the nation.
- 4 Rural market development and rural employment generation
 - About 30% of total population comes from urban pocket and 70% belong to rural area.
 - The availability of poultry meat and eggs, creating a vast marketing opportunity in the rural sector.
 - Fulfill demand of healthy, convenient foods at economical prices is the key.
- 5 Logistics & distribution network & independent venture for food.
- 6 Product versatility can help to grow the industry - Adding Value to poultry products.
- 7 Meritorious product & qualitative education to mass.
- 8 Institutionalization of industry.



It is also important to reframe our situation in order to capture consumer attention & adopt a sustainable agenda for improvement :

- 1 Transparency should take the lead in sustainability.
- 2 Capture consumption patterns and trends in food purchasing behaviour.
- 3 Accelerating digital connection with consumers can be more effective.
- 4 Drive-through access, delivery & digital ordering are a must – (Post Covid scenario).
- 5 Keep chicken as a protein on the centre of the plate for the modern consumer who is surrounded by choices.
- 6 Food safety and nutritive value supporting health.

It is urgent to map the ongoing customer journey's which are driving the chicken protein consumption & will continue to drive the changing habits overall.

The global fast food market size is valued about 600 billion dollars and is expected to grow at CAGR 4.6 % till 2030. The rise in customers spending & the growing influence of convenience food, food delivery & other influencing applications will be the major factors to enhance market growth in India.

Factors such as affordability, availability & vast consumer choices & everlasting food education will enhance and enrich the consumer fabric for protein. The demand for the

fast-food industry in the region "India" will be approximately 250 billion dollars by 2030. Interestingly QSR share seem to be growing with the help of drivers like Dominos, KFC, Pizza Hut & McDonald's with their large number of outlets and customized responses and recipes in Indian mass.

India's eating out market valuing approximately 45 thousand crores have a growth plan of 20-25%, ensuring value proposition, designer recipes as well as vibrant young generation.

Institutions like Railway, Army, Corporate dining, Food sector, branded fine dining restaurants, Quick Service Restaurant & Mobile carts with continually driving the poultry protein consumption which puts Indian poultry industry at restructuring model to meet the challenges. Value addition, variable customer choices, Chicken meat regional versatility and western motivated trends are pointers to examine in order to best archetype of poultry industry.

Although we have mastered poultry protein production greatly but value proposition, cost of production remains the success denominators in the future. We must ensure relevant CAPEX deployment in desirable areas and building a very transparent model of food production & food delivery by building enough capability of processing setup which can suite not only the most dynamic food perspective in India but also can evolve sustainability.



ABTL



Advanced Bio-Agro Tech Limited (ABTL)

Corporate Office:

No. 201, 2nd Floor, S.N.6/1/1,
Deron Hills, Baner Road,
Pune 411045 (India)

@ info@abtl.in

+91 20 2729 1020 / 21

www.abtlenzymes.com

CIN: U24100MH2004PLC149464

Registered Office:

5th Floor Sun Magnetica,
LIC Service Road, Louiswadi,
Thane (W) 400604 (India)



Bird Flu Continues to Spread in Mammals - What this Means for Humans and Wildlife



Divya Venkatesh

Research Fellow,
University of Oxford

As bird flu continues to decimate poultry and wild bird populations around the world, the virus – a deadly strain called H5N1 – appears to be spreading to mammals. The virus has already been confirmed in foxes and otters in the UK, and more recently in four dead seals.

Bird flu refers to influenza A viruses that mainly infect birds. These viruses naturally circulate in wild waterfowl, usually without causing any symptoms.

But when they spread into poultry, some subtypes of the virus can evolve into forms that are highly infectious and deadly (classified as “highly pathogenic”), and can rapidly spread and kill domestic birds.

The H5N1 virus causing the current outbreak is one such highly pathogenic virus. Since its emergence in 1996, scientists have feared it poses a pandemic threat. The virus has shown a propensity to jump to humans (called “spillover”) with a high mortality rate.

World Health Organization (WHO) figures show that between January 2003 to

November 2022, there have been 868 cases of human infection with H5N1, more than half of which were fatal.

The foxes and otters that died were probably exposed to the virus by scavenging infected dead birds. The bodies of these birds have very high amounts of virus. Exposure to such a large dose might explain how the virus was able to overcome the species barrier.

Given that these cases occurred seemingly singly in different locations and times, they are probably dead ends – that is, unlikely to have caused further transmission in mammals. Evidence in the cases of seals in the UK also points to spillover (the virus going from birds to seals) rather than spread (going from seal to seal).

In contrast, the outbreak reported in a Spanish mink farm in October 2022 is more worrying. It is more likely that it spread from mink to mink due to the cramped conditions in which the animals live. Over 50,000 mink had to be euthanised.



Viruses from the mink appear to have acquired several changes in their genes, at least one of which may help it grow better in mammals. How the virus spread to mink is not clear, but it is known that farmed mink are often fed raw poultry. They are also not completely isolated from contact with other animals, such as wild birds.

In the wild, the virus has also recently been implicated in the mass death of sea lions in Peru in seven protected marine areas. And there are reports of the virus killing hundreds of seals in the Caspian Sea, off the coast of Dagestan in Russia. If confirmed, the number of animals involved

would suggest mammalian transmission.

All these infections do not mean that a virus capable of causing a pandemic will emerge. But the growing range of the virus gives more opportunities for it to evolve and for humans to come into contact with it.

H5N1 is a long-anticipated threat. Even so, having a clear idea of its evolution will help design more effective vaccines and treatments. Additionally, the virus is already having a devastating effect on wildlife and could spread to further endangered species.

Therefore, surveillance – testing

for the virus and sequencing samples from animals and humans at high risk of exposure – is crucial. We also need to consider vaccinations in obvious sources such as poultry and shutting down mink farms entirely.

“Since H5N1 first emerged in 1996, we have only seen rare and non-sustained transmission of H5N1 to and between humans,” Tedros Adhanom Ghebreyesus, director general of the WHO, said in a press briefing last week. “But we cannot assume that will remain the case, and we must prepare for any change in the status quo.”



How do you Make a Universal Flu Vaccine? A Microbiologist Explains The Challenges, and How mRNA Could Offer a Promising Solution



Deborah Fuller

Professor of Microbiology,
School of Medicine, University
of Washington

To everything there is a season, and for the flu, it's wintertime. Flu cases peak between December and February, and the flu vaccine is your best defense. Getting the vaccine means you will be less sick even if you get a breakthrough infection.

However, your immune system is in a constant race against the flu virus. Like the virus that causes COVID-19, influenza rapidly changes and mutates into new variants, so manufacturers have to update the flu shot to try to keep pace. After identifying a new flu variant, it takes manufacturers about six months to update the vaccine – and in the meantime the virus can mutate again. This phenomenon is called antigenic drift, and can reduce the effectiveness of the flu vaccine for that season.

An ongoing threat is that a major change in the flu virus, or antigenic shift, could cause the next flu pandemic. This happens when a flu virus from animals, such as birds or swine, gains the ability to transmit between humans. Most people will have no immunity against this new animal-origin virus, so it could quickly spread into a pandemic. If

that happens, the annual flu shot will not be effective and can't be updated fast enough to stop a global spread.

I am a researcher developing new vaccines to prevent future pandemics. Nearly 20 years ago, my lab and several others developed a vision of building a universal influenza vaccine that could give us the leading edge in the race against influenza and prevent the next flu pandemic by effectively combating any eventual flu strain. One potential way to do this is with messenger RNA, or mRNA.

What is a universal influenza vaccine?

A universal influenza vaccine is one that does not need to be updated each year because it is designed to protect against all or most influenza variants. Scientists are exploring several ways to develop universal influenza vaccines. Most fall into one of two buckets.

The first includes vaccines that focus on conserved, or unchanging, parts of the virus. This strategy directs the immune system against parts of the virus, or antigens, that are shared among all variants and can't



mutate without weakening or killing the virus.

The second includes mosaic vaccines. These are like a cocktail of protein pieces taken from different variants. The blend is made up of versions of the protein hemagglutinin – essential to the influenza virus's ability to infect cells – that is found in all flu variants circulating in animals and people. The goal is to induce immunity against nearly all variants so there will be fewer gaps in the immune system's defenses for the virus to slip through.

Using mRNA for a universal flu vaccine

The recent success of mRNA vaccines for COVID-19 shows promise for their use in achieving the vision of an effective universal influenza vaccine.

There are 20 known subtypes of influenza. Prior to the development of mRNA vaccines, it wasn't feasible to make a single flu vaccine against all 20 subtypes due to the complexities and costs in manufacturing. Unlike traditional vaccines, constructing and producing mRNA vaccines is rapid and simple because manufacturers don't have to produce and purify the protein directly. Instead, mRNA vaccines provide the genetic sequence of the protein and then use the body's own cells to generate that protein in its natural structure. This makes it relatively easy to incorporate any antigen or many antigens.

Recently, a team of researchers designed a mosaic mRNA vaccine with sequences from multiple

versions of the hemagglutinin protein, each representing one of the 20 influenza subtypes. This vaccine induced broad immunity against each variant in mice and ferrets.

Several research groups are also exploring the conserved antigen approach with mRNA vaccines. Animal studies have shown that it's possible to design mRNA vaccines that can both focus immune responses against highly conserved, vulnerable parts of the virus and induce broad immunity against a wide range of different influenza subtypes. These include avian flu viruses that share many genetic sequences with human influenza.

Another promising approach uses computational modeling to leverage both conserved and mosaic approaches. This strategy displays multiple hemagglutinins from different influenza subtypes on a nanoparticle. Nanoparticles are structures that give researchers more precise control over how the immune system sees the viral antigens, subsequently allowing them to induce stronger immune responses against multiple variants. Here, both conserved and variable regions of the virus are exposed to the immune system and can lead to broad immunity.

Obstacles to a universal flu mRNA vaccine

There are still several challenges before a universal influenza mRNA vaccine can be made available.

For one, it is not clear which conserved antigens provide the broadest protection, and some

don't naturally induce strong immune responses. So, mRNA vaccines may need improvements like additional components that help activate immune cells. One such addition could include using mRNA to express nanoparticles that stimulate stronger immune responses against the conserved antigens presented by the vaccine.

The mosaic approach is also limited by the maximum dose possible for mRNA vaccines, because higher doses could cause increased adverse reactions to the vaccine. When that dose gets divided into 20 or more antigens, the dose of one or more of those antigens may drop below the threshold needed for protection.

Scientists are working on these challenges, including by developing new mRNA technologies that work with a much lower dose. If mRNA vaccines work for universal protection from influenza, the same strategies could also apply to other frequently mutating viruses, such as the virus that causes COVID-19 and maybe even HIV.

In the meantime, mRNA vaccines may soon usher in a new era of more effective annual flu vaccines by providing a better match to each flu season's new variants. Two seasonal influenza mRNA vaccines are currently in human clinical trials. If successful, they may offer more effective protection from the annual flu than our current flu vaccines. With mRNA vaccines, I believe that we are at the beginning of starting a new race against flu that we may finally win.

The pelleting process: factors influencing phytase recovery

Lode Nollet, Huvepharma.

The heat susceptibility of a phytase depends on its intrinsic heat stability. However many factors will have an impact during pelleting and these need to be considered when evaluating the heat stability of a phytase.



During pelleting, the feed mixture is heated in the conditioner by adding steam. Conditioning has several aims: it improves pellet quality, it reduces power consumption during compression in the die and it increases the hygienic status of the feed. Dry steam is injected at 1.5 to 2 bar and at 127°C to 134°C. The conditioning temperature may vary from 65°C to 90°C, and conditioning times vary from short (30 sec.) to extended (3 to 4 minutes). Afterwards, the conditioned feed is compressed in a die to form the pellet. The transfer of the mash feed through the die holes generates friction, which can potentially lead to an extra loss of phytase activity. After die compression, the pellets are cooled (and dried) in a vertical countercurrent cooler. The final temperature should be around room temperature, and the moisture content should be below 13%.

Processing factors affecting enzyme recovery

The following factors have been shown to significantly affect the enzyme activity in the feed pellet.

Conditioning temperature and time

Enzyme inactivation increases with temperature and residence time in the conditioner. Adding enzymes in feed mills using a hygieniser or extended conditioning will result in rather low enzyme recovery.

Moisture content of the mash feed

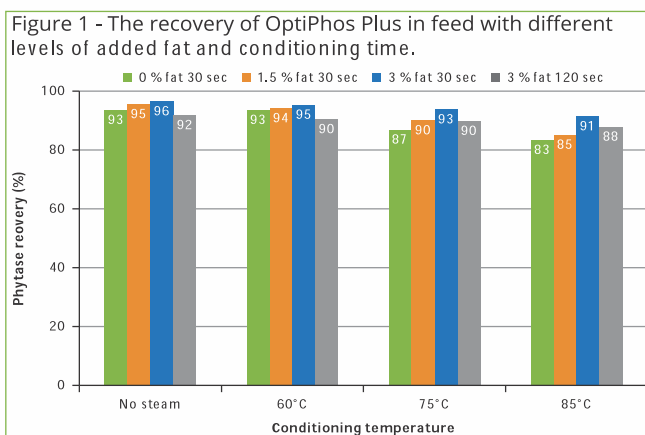
Dry heat has less effect than wet heat, thus low-quality steam (oversaturated steam containing water droplets) negatively impacts enzyme stability.

Diameter and length of the die

Die friction will increase temperature at the pellet surface, so small pellets (2 mm) tend to have lower recovery than large (5 mm) pellets. The L/D ratio (length to diameter ratio) of a die is therefore an important parameter: the higher this value, the more friction heat and the less recovery is to be expected.

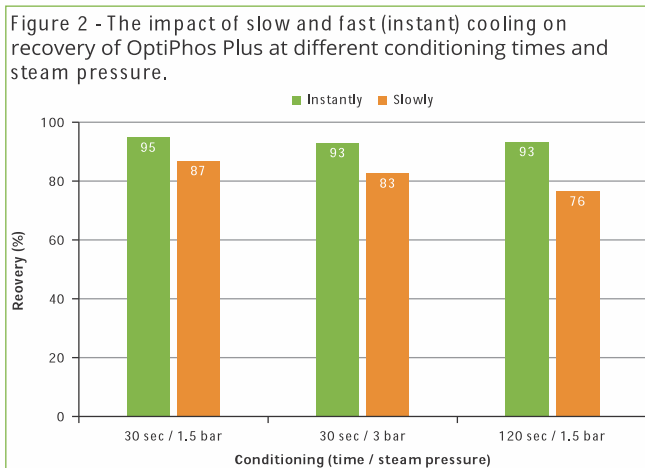
Feed composition

Minerals and fibre negatively affect the die throughput as they increase friction. However an increase in free fat percentage results in higher throughput as fat is a lubricant. A recent trial conducted at Ghent University in Belgium investigated the heat stability of an intrinsic heat stable phytase (OptiPhos plus) in a feed supplied with different levels of fat. The results showed that phytase recovery was 8% higher at 85°C when 3% fat was added, even at prolonged (120sec) conditioning time (Fig.1)



Speed of cooling down of the pellets

Slow cooling causes a post-effect of the heat. A study conducted at Ghent University demonstrated that fast cooling of pellets increased recovery by 10% at 30 sec conditioning time & 3 bar steam pressure. This effect even reached 17% when a long conditioning time was applied (120 sec; Fig.2)



Conclusion

The recovery of phytase during pelleting depends on many factors. However, high intrinsic heat stability is the best guarantee for obtaining the highest level of recovery under all pelleting conditions at the feed mill.

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

OptiPhos[®] Plus

AUTHENTIC
EUROPEAN
SOURCE



BEAT
the **HEAT**

THE INTRINSIC THERMOSTABLE PHYTASE

Top Veterinary Institutes in India



Indian Veterinary Research Institute, Bareilly

Indian Veterinary Research Institute (IVRI) is located at Izatnagar, Bareilly in Uttar Pradesh state. It is an advanced research facility in the field of veterinary medicine and allied branches. It has regional campuses at Mukteshwar, Bangalore, Palampur, Pune, Kolkata and Srinagar. Formerly known as Imperial Bacteriological Laboratory, it was renamed in 1925 as Imperial Veterinary Research Institute. The name of the institute was changed following independence to Indian Veterinary Research Institute. Administrative control of the institute is currently under Indian Council of Agricultural Research (ICAR), New Delhi.



P.V. Narsimha Rao Telangana Veterinary University, Rajendra Nagar, Hyderabad

Veterinary education initiatives in Telangana state can be traced back to the pre-independence times. Hyderabad Veterinary College was established on 05-08- 1946 as a constituent college of Osmania University by His Excellency The Nizam of Hyderabad, a Princely state in the pre-independent India. Andhra Pradesh Agricultural University was established in the year 1964 on the lines of Land Grant Pattern of Farm universities in USA with headquarters at Rajendranagar, Hyderabad and all the Agricultural, Veterinary and Home Science colleges and Research Stations were brought under its administrative control. Thus, the faculty of Veterinary Science remained in the fold of Agricultural University until 2005.

In the year 2005, Veterinary faculty was delineated from the Agricultural University and a separate University in the name of Sri

Venkateswara Veterinary University was formed on 12-06-2005 with headquarters at Tirupati for focused development in Veterinary, Animal and Fishery Sciences. It was having Five Veterinary, Two Dairy Technology and One Fishery colleges, Fourteen Research Stations, Eleven Polytechnics, Two Krishi Vignan Kendras and Two Veterinary Hospitals under its administrative control. Consequent to the bifurcation of Andhra Pradesh state as Andhra Pradesh and Telangana states in the year 2014, the need for bifurcating Veterinary University also became imminent. Thus, Sri P.V. Narasimha Rao Telangana State University for Veterinary, Animal and Fishery Sciences was established by the Government of Telangana on 22.11.2014 with headquarters at Rajendranagar, Hyderabad and brought all the relevant institutes located in Telangana state under the fold of newly formed University duly delineating them from Sri Venkateswara Veterinary University. Subsequently, the University is renamed as P.V. Narsimha Rao Telangana Veterinary University from 24-05-2016.



Mumbai Veterinary College

The foundation of The Mumbai Veterinary College, Mumbai, in 1886 marked the establishment of the veterinary profession in this country. The Mumbai Veterinary College was inaugurated by Prof. J. H. Steel, B.Sc. F.R.C.V.S., a person with experience and dynamism as its first principal. But due to foresight of its pioneers and unceasing efforts of the successors the college has reached a stage when as it enters the 125th year it is poised to make a quantum jump. The Mumbai Veterinary College can claim a just pride in seeing that the seeds of the Veterinary Science it had sown a hundred years back, has developed into a huge tree giving out numerous branches of specialization in various aspects of live stock industry; Thanks to this, the veterinary profession today has been contributing to the National Progress on a large scale.

Tamil Nadu Veterinary and Animal Sciences University

The Tamil Nadu Veterinary and Animal Sciences University, popularly known as the acronym 'TANUVAS', blossomed on 20.09.1989 as the first Veterinary University of the country, through the Tamil Nadu State Government Act 42 of 1989. The seed for the establishment and growth of TANUVAS was sown as early as 1876, when the Madras Veterinary College was started as an Agricultural School in Chennai to offer diploma and certificate course in the field of veterinary and animal sciences. The institute attained the status of a college on 01.10.1903, when it started functioning at Dobbin Hall, Chennai and admitted 20 students for a three-year diploma course called GMVC (Graduate of Madras Veterinary College). It was the only veterinary college in the erstwhile composite Madras State till mid 1950's.



Bihar Animal Sciences University (BASU)

Bihar Animal Sciences University (BASU) has been established with its headquarters at Patna through an act of Bihar State. The University became operational from 13 June 2017 with the appointment of its first Vice Chancellor. The new University has been carved out of the Bihar Agricultural University as two of its constituent colleges at Patna viz. Bihar Veterinary College and Sanjay Gandhi Institute of Dairy Technology have been transferred to the BASU, whereas a new College of Fisheries has been established in 2018. To further expand the horizon of the University and strengthen the research and outreach, following research institutes, stations and substations are being transferred to BASU.



Endeavors of Pashupati Group

Pasupati Group started as a small poultry farm in Kasupada, a remote village in the Cuttack district of the Odisha State in 1982. The small farm began to grow exponentially and the Pasupati venture is in animal feeds, breed farming, hatcheries, animal nutrition and organic manures.

Now, they have enough wealth to share it with the impecunious. They have given educational assistance to schools. To name a few:

- Government Upper Primary School, Kahnupur
- Panchayat High School, Tangi
- Government Girls High School, Tangi

They have organized health camps in the Jagatpur, Safa and Tangi. They have helped developed rural infrastructure like bus stands, playgrounds, and sanitation boxes. They have given numerous medical assistance to the locals.



EGG

Daily and Monthly

Prices of January 2023

Name Of Zone / Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Average	
NECC SUGGESTED EGG PRICES																																	
Ahmedabad	573	575	577	577	577	582	585	590	592	596	600	605	608	610	610	610	610	610	610	595	580	580	580	580	545	530	530	530	495	495	470	574.42	
Ajmer	551	551	551	551	540	556	560	561	570	571	571	571	571	570	570	571	571	561	550	550	517	517	517	500	490	490	470	445	445	430	430	531.26	
Barwala	544	544	544	544	544	549	553	557	565	568	571	571	571	571	571	571	551	551	551	515	515	515	487	470	470	470	426	426	426	426	526.06		
Bengaluru (CC)	560	565	565	565	565	565	565	565	575	575	575	575	575	575	575	575	575	575	575	575	550	550	550	550	550	520	520	495	495	465	465	552.42	
Brahmapur (OD)	554	557	560	560	560	560	563	566	571	571	573	577	577	582	582	585	585	585	585	585	565	565	555	535	535	530	525	510	495	485	470	455	550.90
Chennai (CC)	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	550	550	550	550	535	520	520	500	500	480	559.03
Chittoor	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	543	543	543	543	528	513	513	493	493	473	552.03
Delhi (CC)	566	566	566	566	566	566	568	575	582	590	590	590	592	592	592	592	592	592	592	573	570	570	540	530	530	510	510	495	480	445	445	445	551.16
E.Godavari	534	537	540	540	540	540	543	546	551	554	556	559	561	563	565	567	567	567	567	555	555	540	540	515	515	510	505	490	480	480	480	435	533.23
Hospet	520	525	525	525	525	525	525	525	535	535	535	535	535	535	535	535	535	535	535	535	510	510	510	510	510	480	480	455	455	425	425	512.42	
Hyderabad	538	541	541	541	541	541	545	549	553	556	559	561	563	563	563	563	563	563	563	550	530	530	530	530	510	490	490	490	470	450	415	418	527.32
Jabalpur	550	560	555	555	543	551	560	570	570	575	575	565	565	565	572	572	577	577	560	548	533	533	533	533	515	505	500	490	470	450	450	541.19	
Kolkata (WB)	605	608	608	608	608	608	611	615	617	620	625	625	630	635	639	639	629	624	624	605	605	585	585	570	570	570	540	530	500	500	502	594.84	
Ludhiana	543	543	543	543	543	543	550	556	560	566	566	568	568	568	568	568	568	568	568	553	551	536	521	516	501	496	486	471	471	441	431	426	530.06
Mumbai (CC)	596	599	602	602	602	602	602	606	610	614	617	620	622	624	624	624	624	624	624	610	590	590	590	590	570	550	550	550	530	510	475	591.71	
Mysuru	562	567	567	567	567	567	567	567	577	577	577	577	577	577	577	577	577	577	577	577	550	550	550	550	550	520	520	495	495	465	465	553.71	
Namakkal	550	555	555	555	555	555	555	555	565	565	565	565	565	565	565	565	565	565	565	565	545	545	545	545	545	515	515	490	490	460	460	544.19	
Pune	593	595	595	595	595	595	595	598	601	604	607	610	610	610	610	612	614	614	614	600	590	590	590	590	590	580	560	550	530	510	500	588.61	
Raipur	560	560	560	560	550	560	570	570	570	580	580	580	570	560	565	565	570	570	555	545	530	530	533	530	515	500	500	490	480	445	445	541.87	
Surat	580	585	585	585	585	590	595	600	600	605	610	615	615	620	620	620	620	620	620	600	590	590	590	590	570	550	550	550	530	510	490	586.45	
Vijayawada	534	537	540	540	540	540	543	546	551	554	556	559	561	563	565	567	567	567	555	555	540	540	515	515	510	505	490	480	480	480	435	533.23	
Vizag	550	552	555	555	555	555	558	558	560	562	565	568	570	572	575	575	575	575	575	575	575	575	550	550	530	530	520	500	480	480	480	480	547.10
W.Godavari	534	537	540	540	540	540	543	546	551	554	556	559	561	563	565	567	567	567	555	555	540	540	515	515	510	505	490	480	480	480	435	533.23	
Warangal	540	543	543	543	543	543	547	551	555	558	561	563	565	565	565	565	565	565	565	552	532	532	532	532	512	492	492	492	472	452	417	418	529.26
Prevailing Prices																																	
Allahabad (CC)	586	586	586	586	586	590	600	610	614	619	624	624	624	624	610	605	605	600	590	590	571	562	552	543	538	524	500	490	486	476	578.23		
Bhopal	555	555	560	565	565	565	570	570	590	600	600	580	575	580	580	580	580	580	565	565	550	550	530	530	515	515	505	505	470	475	554.84		
Indore (CC)	560	560	560	560	560	560	570	570	590	590	580	575	570	570	570	575	570	560	550	535	535	535	525	515	515	500	500	475	460	460	545.97		
Kanpur (CC)	576	576	576	576	576	586	595	595	614	614	614	614	614	614	614	595	586	586	562	562	548	548	533	505	505	505	490	467	467	452	563.84		
Luknow (CC)	600	600	600	600	600	610	616	616	630	630	630	630	630	630	630	617	617	617	617	610	603	600	590	573	573	563	563	550	533	523	601.00		
Muzaffarpur (CC)	601	601	601	598	598	604	611	620	625	625	625	633	633	628	630	630	630	612	612	600	585	580	560	560	535	535	515	515	480	480	482	585.29	
Nagpur	560	560	550	555	555	560	560	570	570	570	582	582	582	570	570	570	570	560	550	550	540	540	535	510	510	510	490	450	450	545.52			
Patna	601	601	601	598	598	604	611	620	625	625	625	633	633	628	630	630	630	612	612	600	585	580	560	560	535	535	515	515	480	480	482	585.29	
Ranchi (CC)	601	601	600	600	590	595	600	610	619	619	619	619	619	619	619	624	624	619	614	610	590	586	576	571	562	548	533	524	500	500	486	587.00	
Varanasi (CC)	616	616	607	607	607	607	616	623	627	633	633	633	633	633	633	633	627	620	610	600	593	583	583	583	567	550	533	533	523	507	490	595.45	

2023 Alltech Agri-Food Outlook Shares Global Feed Production Survey Data and Influencing Trends in Agriculture

The 2023 Alltech Agri-Food Outlook revealed global feed production survey data and trends.

Data collected from 12th annual global feed survey estimates world feed production remains steady with a slight decrease of 0.42% to 1.266 billion metric tons. Pet feed shows most significant growth while beef feed begins to moderate

Alltech released its 2023 Alltech Agri-Food Outlook on January 23rd, highlighting global feed production survey data. Despite significant macroeconomic challenges that affected the entire supply chain, global feed production remained steady in 2022 at 1.266 billion metric tons (BMT) in 2022, a decrease of less than one-half of one percent (0.42%) from 2021's estimates. The annual survey, now in its 12th year, includes data from 142 countries and more than 28,000 feed mills.

Europe bore the brunt of the impact, including significant disease challenges, severe weather and the impacts of the invasion of Ukraine. The global COVID-19 pandemic has had major impacts on the agri-food sector, contributing to supply chain challenges and accelerating the adoption of new technology and environmental sustainability practices.

The top 10 feed-producing countries over the past year were China (260.739 million metric tons [MMT]),

the U.S. (240.403 MMT), Brazil (81.948 MMT), India (43.360 MMT), Mexico (40.138 MMT), Russia (34.147 MMT), Spain (31.234 MMT), Vietnam (26.720 MMT), Argentina (25.736 MMT) and Germany (24.396 MMT). Together, the top 10 countries produced 64% of the world's feed production, and half of the world's global feed consumption is concentrated in four countries: China, the U.S., Brazil and India. Vietnam experienced a great recovery in terms of its feed tonnage in 2022, entering the top 10 ahead of Argentina and Germany and crowding out Turkey, which reported reduced feed tonnage. Russia overtook Spain, where there was a significant reduction in feed production.

Key observations from the survey:

- Feed production increased in several regions, including Latin America (1.6%), North America (0.88%) and Oceania (0.32%), while Europe decreased by 4.67%, Africa by 3.86% and the Asia-Pacific region also dropped 0.51%.



- Globally, increases in feed tonnage were reported in the aquaculture, broiler, layer and pet food sectors, while decreases were reported in the beef, dairy and pig sectors.
- Although it experienced a narrow reduction in feed production, China remains the largest feed-producing country in the world, followed by the United States and Brazil.

Notable species results:

- **Poultry** sector experienced increases in both layer and broiler feed production.
 - Avian influenza, other diseases and the high costs of raw materials affected the layer sector in many markets, especially in Asia, Europe and Africa. On the other hand, growth in the sector was boosted due to bigger challenges in other sectors that led to increased demand for eggs. Overall, layer-sector feed production increased by 0.31%.
 - While the overall tonnage in the broiler sector increased by 1.27%, there were significant differences from country to country. Overall, feed production growth in the broiler sector was reported mainly from the Middle East, North America and Latin America.
- **Pig** feed production was down globally in 2022 by almost 3%. ASF and high feed prices depressed pig production in many countries. However, in Vietnam, China, South Africa, Brazil and Mexico, better pork prices and other market conditions led to growth in the sector.
- **Dairy** feed tonnage decreased by 1.32%, mainly due to the high cost of feed combined with low milk prices, which caused farmers to reduce their numbers of cows and/or rely more on non-commercial feed sources. Some

exceptions included Ireland, where drought caused farmers to rely more on commercial feeds, and New Zealand, where milk prices were higher.

- **Beef** feed production decreased slightly by 0.34% globally. The downward trend continued in Europe, but increases were seen in almost all other regions. In Australia, the reduction in feed tonnage was a result of plentiful grass and not a reflection of any changes in the demand for beef.
- **Aquaculture** sector experienced a total global feed production growth of 2.7%. The Top 5 aquaculture feed countries are China, Vietnam, India, Norway and Indonesia. Significant increases were reported in China, Brazil, Ecuador, the Philippines and the U.S. Aquaculture feed production was one of a few sectors that saw growth in Europe.
- **Pet** feed production had the highest increase among the sectors, with a global average 7.25% rise in production. This significant increase is largely due to the rise in pet ownership amid the COVID-19 pandemic. North America and Europe continue to be the top pet feed-producing regions.

Notable regional results:

- **North America** reported an increase of 0.88% (2.272 MMT) and the U.S. remained the second-largest feed-producing country globally, behind China. Growth was reported in the broiler, beef and pet food sectors.
- **Latin America** experienced growth of 1.6% (3.066 MMT), and Brazil remained the leader in feed production for the region and ranked third overall globally. Most of the growth was reported by Mexico, Brazil and Chile.

- **Europe** saw the largest decrease in feed production of 4.67% (-12.882 MMT) in its feed production due to issues that include the invasion in Ukraine and the spread of animal diseases, such as African swine fever (ASF) and avian Influenza (AI).
- **Asia-Pacific** remained flat as decreases reported in China, Pakistan, Thailand and Malaysia were offset by increases in Vietnam, the Philippines, Mongolia and South Korea. The region is home to several of the top 10 feed-producing countries, including China, India and Vietnam.
- **Africa** experienced a decrease of 3.86% in feed tonnage (-1.718 MMT), mainly because of reductions reported in Egypt, Morocco, Kenya and Nigeria. South Africa, on the other hand, saw an increase of more than 2%, and Namibia also reported higher feed tonnage in 2022.
- The **Middle East** region is up significantly at 24.7% (6.301 MMT), as a result of more accurate reporting and efforts by the Saudi Arabian government to increase broiler production as part of its Vision 2030 plan.
- **Oceania** was flat, with a small reduction reported by Australia that was offset by a slight increase reported by New Zealand.

Alltech works together with feed mills and industry and government entities around the world to compile data and insights to provide an assessment of feed production each year. Compound feed production and prices were collected by Alltech's global sales team and in partnership with local feed associations in the last quarter of 2022. These figures are estimates and are intended to serve as an information resource for industry stakeholders.

To access more data and insights from the 2023 Alltech Agri-Food Outlook, including an interactive global map, visit alltech.com/agri-food-outlook.



FOR IMMEDIATE RELEASE
 Contact: **Elizabeth A. Davis**
 Elizabeth.Davis@Novusint.com

Novus India launches Breeder Management and Nutrition: Moving the industry forward book during Poultry India Expo 2022

Novus's latest publication showcases insights and experience of industry experts around the world.

Bengaluru, india (november 23, 2022)–

The Novus India team held a successful launch of our latest book, *Breeder Management and Nutrition: Moving the industry forward*, during Poultry India Expo 2022 at Hyderabad. One hundred twenty breeder operators, media, and business partners from India, Bangladesh, and Nepal shared their overwhelming responses to the new publication during the event.

Novus Executive Manager for Global Poultry Solutions Hugo Romero-Sanchez, PhD, was joined by a fellow book author virtually to present highlights from the book on the topics of progeny, macro minerals, and male breeder nutrition.

The book's 14 chapters were carefully curated to serve as a reference for current broiler breeder production best

practices and considerations as well as to be a catalyst for new ideas in management, nutrition, and industry sustainability.

Those in the industry and academia will likely recognize the book's contributors: Eddy Decuyper of K U Leuven, Aitor Arrazola of Perdue University, Rickvan Emousand Annemarie Mens of Wageningen Livestock Research, Henk Enting of Cargill, Dinabandhu Joardar of Cargill, Edgar O. Oviedo-Rondón of North Carolina State University, Rebecca Forder of the University of Adelaide, Johan Buyse of K U Leuven, Juan Carlos Abad and Robin Jarquin of Cobb-Vantress, David Cavero Pintado and Xabier Arbe Ugalde of H&N International, and Stanislaw Budnik, Juxing Chen, Silvia Peris, Hugo Romero-Sanchez, and Mercedes



Vázquez-Añón of Novus.

"It was important to have contributors from recognized academia, as well as experts from the industry and breeding companies, to properly cover the vast array of topics ranging from practical management, nutrition (quality and quantity), welfare, (epi)genetics and physiology," Buyse said.

Novus Official Book Launch Event

BREEDER MANAGEMENT AND NUTRITION

Moving the Industry Forward



Novus International, Inc. is a leader in scientifically developing, manufacturing, and commercializing nutrition and health solutions for the animal agriculture industry. Novus's portfolio includes ALIMET®, MFP®, and MHA® feed supplements, MINTREX® bis-chelated trace minerals, CIBENZA® enzyme feed additives, NEXT ENHANCE® feed additive, ACTIVATE® nutritional feed acid, and other feed additives. Novus is privately owned by Mitsui & Co., Ltd. and Nippon Soda Co., Ltd. Headquartered in Saint Charles, Missouri, U.S.A., Novus serves customers around the world. For more information, visit www.novusint.com. ©2022 Novus International, Inc. All rights reserved.

Eddy van Lierde Promoted to Global Head of Incubation Services



Edinburgh, Scotland. – Aviagen® is pleased to announce that Eddy van Lierde has been named Global Head of Incubation Services, effective from Jan. 2. A search has begun to fill his previous position as Incubation Specialist. Eddy will replace Dinah Nicholson, as she transitions to retirement. Dinah is still an integral part of the team.

In his new role, Eddy will lead Aviagen's team of global incubationists in their mission to provide the best support to customers around the world, as well as to Aviagen hatcheries and internal production operations.

One major focus for Eddy and his team is research, including incubation trials to provide the latest, relevant and practical advice. To ensure Aviagen hatcheries are equipped with the industry's most innovative equipment, the team works closely with incubator and hatchery automation companies. Another passion of Eddy and his team is teaching and inspiring future poultry professionals through hatchery schools and workshops.

Eddy commented, "I am excited to begin this new adventure with a dedicated group of people who are committed to our customers and our birds, and am proud to be part of their team. Chick health, welfare and performance begin in the hatchery, and what we do is essential to providing our customers with the robust stock they need to feed the world."

Years of dedication to incubation and hatchery progress

Eddy has served the global poultry industry for three decades. As Hatchery Specialist, he enriched Aviagen hatcheries and customer service teams in the US, Canada and Latin America with his knowledge and expertise.

Eddy's career with Aviagen began in 1995 when he joined Ross Poultry Ltd in New Zealand (now Aviagen New Zealand) and became involved with the incubation program, and later moved to Australia to become Hatchery Manager. Originally from Belgium, he attended the Japan Livestock Technology Association School, where he studied hatchery management and poultry husbandry.

Eddy will report directly to Aviagen Vice President of Global Technical Operations Dr. Bryan Fancher. "Eddy has done an outstanding job as Incubation Specialist, and will provide great leadership for the Global Incubation Services team," commented Bryan.

DSM and Foundation Earth Partner to Promote Food Eco-labeling

Royal DSM, a global purpose-led science-based company, and Foundation Earth, an independent, nonprofit organization issuing front-of-pack Eco Impact scores on food products, announce their agreement to cooperate on eco-labeling of food and beverages to empower consumers to make more sustainable food choices based on transparent and credible information.



Within the new partnership DSM will undertake full Life Cycle Assessments (LCAs) for participating brands under the Foundation Earth method, enabling companies to access an aggregated eco impact score on their food and drink products, as well as an ecolabel that can be displayed on the front-of-pack. The scores delivered by Foundation Earth range from A+ to G and are re-certified yearly, making it possible for product owners to improve their production and grade over time.

The agreement means that agri-food companies joining Foundation Earth can now access DSM's Sustell™ service to measure and improve the environmental impacts of animal protein products (e.g. eggs, milk, fish and meat), based on accredited methodologies (e.g. EU PEF).

Developed by DSM with Blonk Consultants, Sustell™ is a first-of-its-kind intelligent sustainability service that delivers accurate, simple, and actionable farm-level solutions to improve animal protein production's

environmental footprint and profitability. By catalyzing sustainable value chains and enabling environmental transparency and supply chain to differentiate, Sustell™ helps producers achieve their sustainability commitments.

Cliona Howie, CEO at Foundation Earth, Foundation Earth: "At Foundation Earth we are always looking to extend our knowledge by partnering with diverse experts in the food sector. We are excited to join forces with DSM, who will allow us to scale our work and bring further expertise on Life Cycle Assessments for protein under the Foundation Earth method."

Ivo Lansbergen, Executive Vice President of Animal Nutrition and Health at DSM: "I firmly believe that nutrition and sustainability information are essential for consumers to make informed decisions. Primary, farm-level data is key to enabling all the players in the animal protein value chain to unlock new market opportunities and create a race to the top in terms of sustainability. Sustell™ makes it possible."



New Dynamic Leadership Team at CLFMA OF INDIA 2022-2024



CLFMA OF INDIA is a Non-Profit Organization and an Apex Chamber, nurturing "One Voice" of the Livestock Industry.

It was formed in the year 1967 with the objective of helping the promotion of overall animal husbandry, including the promotion of the concept of balanced feeding of animals in accordance with their nutritional requirements for deriving from them maximum output through productivity improvement. It was broad-based to include members from all sectors of livestock production during 2002.

CLFMA has a membership base of around 250 nos. representing Dairy, Aqua, Poultry, and other sectors related to the Indian Livestock Industry viz. manufacturers and suppliers of feed additives, raw

materials, feed plant and machinery, Laboratory equipment and also breeders, integrators, meat processors and exporters, vaccine manufacturers, animal health, etc.

On 16th February, 2023, CLFMA's Election was held in the Extra-Ordinary General Meeting (EGM) and the new leadership team took charge for the period 2022-2024. The outgoing Chairman Mr. Neeraj Kumar Srivastava, Managing Director, South Asia & South – East Asia, Novus International, expressed his appreciation and conveyed his best wishes to the new team led by Mr. Suresh Deora, Director – S.A. Pharmachem Pvt. Ltd., who got elected as the new Chairman of CLFMA OF INDIA for the period 2022-2024.

Mr. Neeraj Kumar Srivastava outgoing

Chairman said that, it was indeed a great pleasure to work with CLFMA as a Chairman and after 2 years CLFMA has decided to appoint Mr. Suresh Deora, who is an accomplished, talented business leader having a vast experience in managing the businesses of Livestock Sector as a whole and is actively involved into Human & Animal Nutritional business.

Mr. Suresh Deora, is also the Chairman of Indian Red Cross Society – Mumbai, President and Trustee of KARM, Hon. General Secretary of India – China Chamber of Commerce and Industry. He presides over many education institutes. He is a well-seasoned and networked businessman connected with many industry stake holders including government authorities, BIS, FSSAI, etc and under his



CLFMA Office Bearers 2022-2024

Stewardship, we anticipate CLFMA would continue to grow to greater heights.

He thanked Mr. Neeraj Kumar Srivastava and CLFMA and said that, it was a great honour to be appointed as Chairman in a renowned association like CLFMA, as it is the single leading voice of the Animal Husbandry Industry. He promised to do his level best to help CLFMA work for the benefit of its' members and the industry at large. He added that he was truly honoured and thrilled to carry the great legacy of many distinguished leaders, which has served the livestock industry for more than 5 decades. He promised to do his level best towards building the visibility of CLFMA, its image & reputation and working towards betterment of the livestock industry.

He also said that Mr. Neeraj Kumar Srivastava's team has done a great job especially with regard to government engagements and conducting relevant seminars during his tenure.

Following Office Bearers were elected for the period 2022 – 2024

1. Chairman : Mr. Suresh Deora, S. A. Pharmachem Pvt. Ltd.
2. Dy. Chairman : Mr. Sumit Sureka, Shivshakti Agro (India) Pvt. Ltd.
3. Dy. Chairman : Mr. Divya Kumar Gulati, Nurture Aqua Technology Pvt. Ltd.
4. Dy. Chairman : Mr. Naveen Pasuparthi, Nanda Feeds Pvt. Ltd.
5. Dy. Chairman : Mr. Sandeep Kumar Singh, Godrej Agrovet Ltd.
6. Hon. Secretary : Mr. Abhay Shah, Spectoms Engineering Pvt. Ltd.
7. Treasurer : Mr. Nissar F. Mohammed, Coastal Exports Corporation
8. Immediate Past Chairman : Mr. Neeraj Kumar Srivastava, Novus Animal Nutrition (India) Pvt. Ltd.
Executive Director : Ms. Chandrika Venkatesh

The other members of the Managing Committee 2022 - 2024 comprises of:

- | | | | |
|----------------------------|-----------------------------------|------------------------------|---------------------------------------|
| 9. Dr. Prashant Shinde | : Cargill India Pvt. Ltd. | 17. Mr. R. Lakshmanan | : Shanthi Feeds Pvt. Ltd. |
| 10. Mr. Anil M | : KSE Limited | 18. Mr. Balaram Bhattacharya | : Indian Herbs Specialities Pvt. Ltd. |
| 11. Dr. Devender Hooda | : Huvepharma SEA (Pune) Pvt. Ltd. | 19. Mr. K. Narender Reddy | : Natural Remedies Pvt. Ltd. |
| 12. Mr. R. Ramkuty | : Niswin Enterprises | 20. Dr. Anup Kalra | : Ayurved Limited |
| 13. Dr. Saikat Saha | : Evonik India Pvt. Ltd. | 21. Dr. Vijay Makhija | : Intervet India Pvt. Ltd. |
| 14. Mr. Ramakanth V. Akula | : The Waterbase Limited | 22. Mr. Jaison John | : U. S. Soybean Export Council, Inc. |
| 15. Mr. Vijay Bhandare | : Bhavani Agrovet Pvt. Ltd. | | |
| 16. Mr. Abhay Parnerkar | : Godrej Tyson Foods Ltd. | | |



CLFMA Managing Committee 2022-2024

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

- 1. 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

September 2023

- 1. Space 2023**
Dates: September 13-15, 2023
City: Rennes
Country: France
Website: www.space.fr

A Closer Look at Atomes with Dr. John Nehme

we will be pleased if you can briefly describe what Atomes does to our readers.



Good morning. Firstly, we need to understand Atomes's core of activity.

Atomes is a Canadian company founded in 1999 by a team of scientists. These professional industrial chemists and microbiologists have applied their technical knowledge and expertise to the development of products that satisfy the growing needs in several divisions such as animal healthcare and pharmaceuticals, hotels, commercial and residential complexes, water and wastewater treatment, food and beverages processing, aerospace and military, pulp and paper, agriculture, petroleum and constructions.

We have more than twenty affiliate companies responsible over marketing Atomes technologies. We are operating all over the globe with more than two hundred distributors.

Our R&D joint projects transpire with the biggest companies worldwide. We are responsible for the R&D of lot of governmental institutes and universities in North America including the decontamination of biological warfare diseases for the US Army. We simply invent new molecules and sell it to the world!

Atomes has partnered up with twenty US institutes. Do you have any partnership plans with an Indian entity?

Yes, we have plans and already in motion. I would prefer not to disclose this matter till we finalize it with the Indian entities.

Back in 2021 you published a paper on Antibiotic Replacement Technology which led to the development of Novo Biotic. How is the response from the consumers?

The consumers all around the world are not aware about the poultry practices because such issues are only correlated to professionals such as farmers but I can assure you that for the last five years we have been successful in replacing all AGP as preventive measures in lot of countries. Production of antibiotic free chicken is becoming real and our target is to make the farmer conscious about it.

Is Bioxy Enverno your flagship product? After all, it took a good chunk of your Technical Symposium presentation.

During the symposium I elaborated on four patented

technologies and introduced the 5th Novel. Allow me please to elaborate:

- BIOXY** - It extrapolates Atomes decontamination program of the biological warfare diseases adapted by the US Army to the animal healthcare using unique patented organic decontaminant.
- ATO GROWTH X55** - Introducing the new curative and preventive detoxifier, toxin binder, acidifier, bio-preservative, antioxidant, anti-inflammatory, expectorant unique patented technology.
- ENHANCE** - First water sanitizer as per-dioxide to replace regular chlorine dioxide with a shelf life of four years and 60000 ppm heat stable.
- FORMUL A CID** - Our unique acid for the CIP that have a pH of 1 completely safe and non-harsh and non-corrosive.
- BIOSCIENCES P** - Introducing and elaborating on the first patented powder biological AGP, a mix of six lippeptides to claim antibiotic free chicken.

I can tell you that all the five patents are my flagship products during the symposium.

Can we say Bioxy is the child of your 'Organic Farm Decontamination Program'?

You can say Bioxy is the mother, the father, and the child of the organic farm decontamination.

The 'Organic Farm Decontamination Program' is running successfully back in North America? How is the program running in India?

This decontamination program is globally successful in the healthcare, animal healthcare and food industries. The program has been running in India for more than three years with outstanding results.

How is Atomes shaping the Animal Healthcare industry here?

It's not that easy as one may think. We have long term

plans for the next ten years. We plan to introduce unique and patented biotechnologies that will re-shape this industry in India and secure better exports toward adapting high production standards when using Atomes technologies.

What are the new technologies you are working on right now? Just a quick brief of it is enough. After all, new techs can shape industries in new ways one cannot imagine.

We are operating in more than nine divisions with almost a thousand unique products. Of course, we cannot elaborate on the new technologies we are working on. However, you can consider the animal healthcare and crop protection as our main R&D focus for 2023.

Atomes is heavily focused on R&D. I humbly say, India has innumerable scientific minds with great potential. Do you see a new R&D branch in India in the near future?

You need to take into consideration that our R&D starts from and in the field, based on the team requests. Let me give you an example from the Indian market. Usually, farmers sanitize their farms drinking water with chlorine dioxide. Now, chlorine dioxide is generated when mixing 2 components together resulting in release of toxic fumes and low concentrations of the dioxide up to maximum of 0.5%. One must note that the shelf life of the prepared solution is twenty four hours at most. It is also not heat and pH stable. It took us three years of extensive work to release a patented single molecule named ENHANCE. It is

a per-chlorine dioxide at 6% concentration with four years of shelf life with no smell. It is completely safe. It is heat and pH stable up to seventy two hours.

The new R&D branch you are asking about? Well, it is already established in India. How? It is not about equipment and premises. It's about conveying the field needs to the R&D. That is the most difficult part in the game.

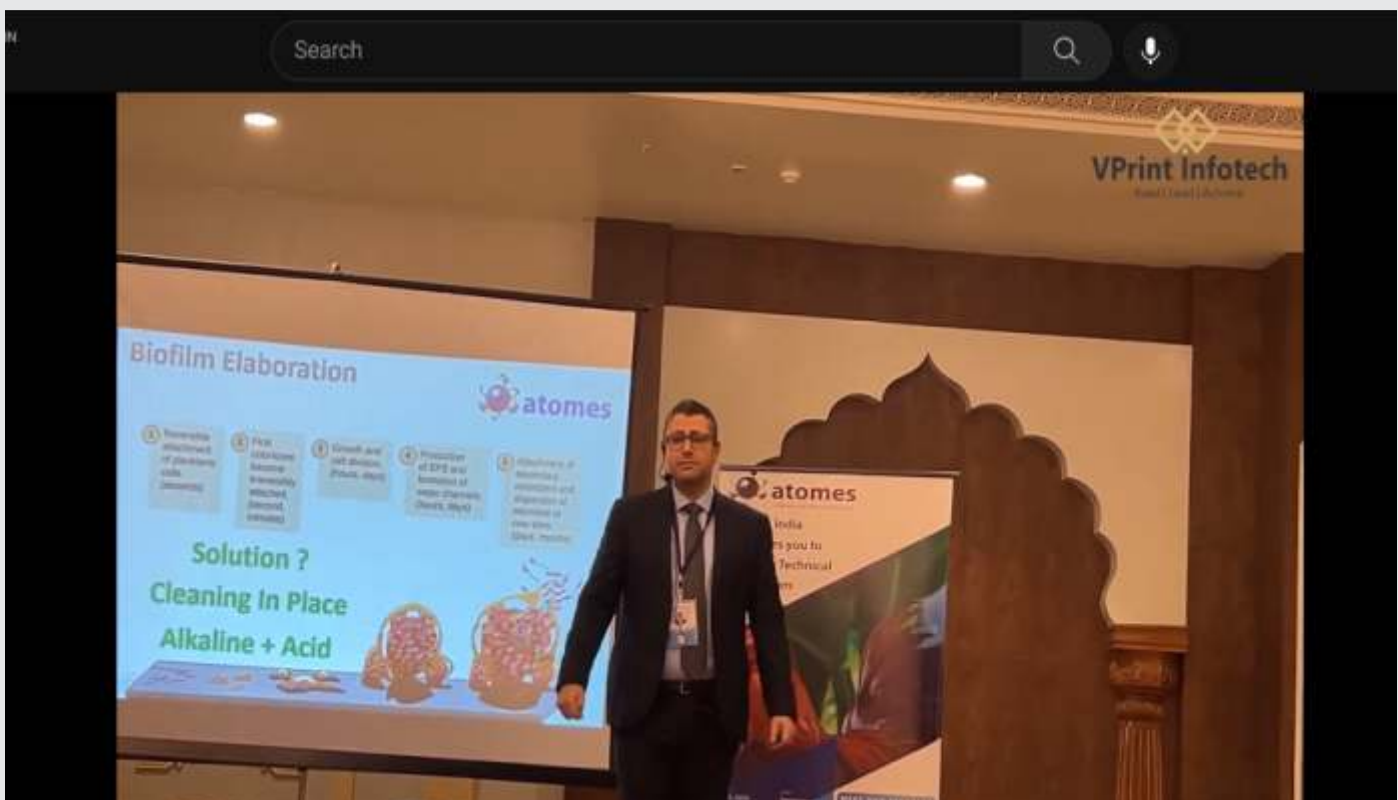
As a Regional director of Atomes, covering more than fifty three countries for the nine divisions, one of my core responsibilities among many; is ensuring to convey the field needs to the R&D and push my team to play it right. My other responsibility is to continuously improve the quality of the environment where our fellow citizens live, work, play, study and receive medical care. My vision is to push the frontiers of longevity while respecting the environment.

What is your take on the Indian livestock economy?

Forget about my opinion. Let see the global opinion and fact. India is considered one of the major three livestock economies in the world. A lot of barriers do exist at export levels due to antibiotics residues. There comes our role!

What are the future plans of Atomes India?

Our course of action by priority is to start the crop protection & plant nutrition division, the pulp and paper division and then to cover the rest of the divisions. The Indian market is of paramount importance to us. With our great team and our supporters we are ready to deliver



ADM acquires Missouri research farm



ADM has finished purchasing a 95-acre research farm in Montgomery City, Missouri. Montgomery City Science and Technology Farm will be the name of the pilot-scale site, which was previously owned by Novus International. In its nutritional health studies, it has a standard animal nutrition laboratory, 30 acres of pasture for grazing, and housing for poultry, swine, and ruminants.

"The Montgomery City Science and Technology Center bolsters our capabilities," said Ryan Lane, ADM president of North American animal nutrition, during an interview at the International Production & Processing Expo (IPPE). "Directionally, this farm is perfect for where ADM is going in terms of needed capabilities to understand the effects of nutrition on the gut microbiome, but it also has solutions that address our sustainability needs."

On-site sustainability features, include a LEED-certified building, compost and wastewater facilities and a feed mill, a solar array and built-in rainwater retention system.

These features "support where we're moving for manufacturing and our footprint to meet Scope 1, 2 and 3 life cycle assessment goals," he said.

Lane said research will focus on young animal models "because they provide a faster response to understand what's working and what isn't."

ADM is currently upgrading the site, and will begin research there in spring 2023.

Cargill completes acquisition of Owensboro Grain



Cargill has completed the acquisition of Owensboro Grain Co., a fifth-generation, family-owned soybean processing facility and refinery located in Owensboro, Kentucky.

"Today marks a significant milestone as we welcome Owensboro Grain Company into our Cargill family," said Leonardo Aguiar, president of Cargill's North American agricultural supply chain.

"The addition of Owensboro Grain is an essential step on our journey to creating a connected, resilient and modernized grain experience for our customers and the markets we serve."

Cargill says the addition of Owensboro Grain Company will enhance Cargill's efforts to increase capacity across its North American oilseeds network to support growing demand for oilseeds driven by food, feed and renewable fuel markets.

"We are excited for this new chapter in the life of Owensboro Grain Co. and believe an acquisition by Cargill will ensure the long-term success of the company," said Helen Cornell, president and CEO of the family-owned soy processor. Cornell said Cargill has the ability to capitalize on growing opportunities in the industry, such as renewable energy.

"The acquisition will ensure that Owensboro Grain Co., its employees,

farmers, customers and the community are best positioned for the future," said Cornell. "We are excited to transfer ownership to another multi-generational family held enterprise with

global access to markets and capabilities to ensure the future growth of our business. Cargill has the global resources necessary to support Owensboro Grain Company's growth goals and operations." (Feed Strategy)

Chick distribution company Clark's Poultry purchased by International Layer Distribution and Trouw Nutrition



International Layer Distribution GmbH (ILD), a subsidiary of the German-based EW Group, and Trouw Nutrition Canada Inc., a Nutreco Company, formed a partnership to acquire Clark's Poultry.

Clark's Poultry is a day-old chick distribution company in Manitoba, Saskatchewan, and Alberta that sells Lohmann Breeders brand layer chicks.

The agreement went into effect in December. Doug Clark founded the company in 1947, and it has been in the Lawson family since 1970, when Glen Lawson purchased Clark's.

"I am proud of our involvement in this dynamic industry over the last 52 years - it is a proud family legacy," states Brad Lawson, president of Clark's Poultry. "After 44 years in the industry, the time has come for me to move on and let the current management and sales team, along with the new ownership group, take Clark's Poultry to the next level of excellence in the hatchery industry."

"We feel the new ownership of the hatchery will allow us not only to invest in the Canadian community and the team we have built" said Greg Moorehead, who will assume the role of General Manager, "but also to continue improving on our existing chick quality and customer support."

Maarten Bijl, managing director at Trouw Nutrition North America and Albert Cordts, managing director of International Layer Distribution GmbH issued the following statement: "We are excited about this acquisition and partnership. Continuing the high quality, and the excellent service, customers know from Clark's is very important to us. This acquisition also shows long-term and continued commitment to the Prairie provinces and their producers."

Egg shortage breeds chicken-feed conspiracies



Social media users claim to have found a new culprit for sky-high egg prices: chicken feed. The theory gained steam on Facebook, TikTok and Twitter in recent weeks, with some users reporting that their hens stopped laying eggs and speculating that common chicken feed products were the cause. Some went a

step further to suggest that feed producers had intentionally made their products deficient to stop backyard egg production, forcing people to buy eggs at inflated prices.

"One of the largest egg producers in the country cut a deal with one of the largest feed producers in the country to change their feed formula so it no longer contains enough protein and minerals for your chickens to produce eggs," one Facebook user wrote in a post shared more than 2,000 times. "They are now price gouging eggs to make bank." But poultry experts say there's no evidence for such claims. Here's a closer look at the facts.

The claim is that chicken feed companies have altered their products to stop backyard hens from laying eggs and drive up demand for commercial eggs.

The fact is U.S. egg prices in grocery stores more than doubled over the past year due to an outbreak of bird flu, combined with increasing labor and supply costs.

Some backyard chicken owners may have separately found their chickens underperforming, but experts say the issues are unrelated. While feed quality can affect hens' egg-laying abilities, state agricultural officials told The Associated Press they have not heard of any widespread issues with feed affecting egg production, and several major feed suppliers say they haven't changed their formulas.

Experts say there are far more mundane explanations for the poultry's meager production.

"Is there a broad conspiracy? No, there's not a broad conspiracy," said Todd Applegate, a professor in poultry science at the University of Georgia. "Beyond feed, there are a lot, probably even more so, things from the management and from the bird's environment that creates different things that would cause her to either go out of production or lower her production."

"Because of high path avian influenza, we've had to depopulate millions of laying hens. And when you take that many chickens out of production, there's fewer eggs," said Ken Anderson, a poultry industry specialist at North Carolina State University. "And when

there's fewer eggs, the price goes up."

Democratic U.S. Sen. Jack Reed of Rhode Island and a farmer-led advocacy group have called for an investigation into potential egg price-gouging by producers. But there is no evidence that altered chicken feed is driving steep egg prices.

Agricultural officials in multiple states, including North Carolina and Georgia, told the AP they have received no reports of widespread problems.

"Our members have not really heard any exact reports of any correlation between the feed and egg production," said Austin Therrell, executive director of the Association of American Feed Control Officials, a group of local, state and federal agencies responsible for regulating animal feeds.

Evonik and Dr. Eckel to cooperate on phytogenics



Evonik and Dr. Eckel Animal Nutrition have entered into a partnership effective January 1, 2023. This agreement will enable Evonik's Animal Nutrition business line to expand its product portfolio in the gut health solutions area to include the phytogenics product class. Evonik plans to launch a first product from the partnership with Dr. Eckel in Europe in the first quarter of 2023.

Phytogenics are plant-based feed ingredients which play an important role in alternative solutions to antibiotic use in livestock farming. The use of antibiotic growth promoters in animal feed has been banned in the European Union since 2006. "It often needs complex solutions to maintain health and productivity in the barn without antibiotics," said Gaetano Blanda, head of the animal nutrition business line at Evonik. "In combination with our existing

gut health solutions, phytogenics will help farmers achieve this goal.”

Evonik gut health solutions, such as Ecobiol, Fecinor, and GutCare, are primarily focused on stabilising animal gut health. Dr. Eckel, one of the most experienced and innovative suppliers in the field of phytogenics, will collaborate with Evonik to address additional animal health issues with selected products that will expand Evonik's portfolio.

Customized system solutions made up of multiple components that provide long-term benefits are at the heart of Evonik's life science division nutrition and care, which includes the animal nutrition business line. Evonik aims to help supply a growing global population with healthy animal protein in an efficient and sustainable manner through its products, services, and know-how.

“As a dynamic company with a high pace in product development, we are able to create innovations in a comparatively short period of time,” says Dr. Antje Eckel, founder of Dr. Eckel Animal Nutrition. “With a strong partner like Evonik, we can allow selected products to access a much wider market in a short time. We are therefore very happy that together with Evonik we can open up new target groups and customers.”

Dr. Eckel Animal Nutrition is a family-run company with international operations. A broad knowledge of plant substances and their interactions as well as experience from almost three decades of work with innovative feeding solutions allows the company to develop phytogenics with specific benefits.

ForFarmers' remedies on proposed merger rejected by CMA

ForFarmers and 2Agriculture are considering next steps after the U.K. Competition and Markets Authority (CMA) rejected remedies offered by the companies to address CMA's concerns about the effect of a proposed joint venture on competition.

ForFarmers and 2Agriculture offered the remedies, or corrective measures, to the



CMA after it found higher prices for poultry feed could result from the anticipated joint venture, and said the proposed merger would be subject to further review.

As a non-ministerial department of the U.K. government, the CMA's main role is to promote competitive markets in the country, and to tackle unfair business behavior.

In October 2022, the CMA announced an initial investigation into the proposed merger. Parties mentioned at the time were ForFarmers N.V. (via ForFarmers U.K. Holdings Ltd.), and Boparan Private Office Ltd. (via Amber REI Holdings Ltd.). The joint venture proposed was between ForFarmers UK Ltd. and 2Agriculture Ltd.

After the first phase of its review, the CMA identified areas of the country where a joint venture could raise concerns over market competition. In these areas, the two parties compete for business, but the joint venture would eliminate the competition there. For parts of East Anglia, northwest England and North Wales, this could mean higher prices for poultry feed, inferior feed quality, and/or reduced service.

Furthermore, the CMA raised the prospect of reduced choices for smaller chicken farmers and processors as Boparan's poultry production and processing business could be favored after the merger.

The two companies announced the proposed merger in July 2022, saying it would serve a wider customer base.

A subsidiary of the Dutch-based ForFarmers N.V., ForFarmers U.K. sells approximately 2 million metric tons (mmt) of compound feed volumes annually (excluding straights and co-products) across species. Most of the feed output from its 14 mills is for ruminants and pigs, with smaller volumes produced for poultry. The

company has approximately 900 employees.

Based in the U.K., 2Agriculture supplies approximately 1.2 mmt of feed annually to poultry farmers — mostly into the integrated market, but also to independent customers. With a workforce of 250, the firm operates five mills across Scotland, East Anglia and North Wales. It also has an extrusion plant in Cambridgeshire. (Feed Strategy)

Kerala intends to pass legislation to ensure the quality of poultry and cattle feed



Animal Husbandry Minister J. Chinchurani said in the Assembly on Monday that the State government will soon introduce legislation to ensure the quality of cattle and poultry feed sold in the state, with punitive provisions to hold those found responsible for bringing adulterated feed into the market accountable.

In response to a question about the recent deaths of cattle in the state as a result of contaminated feed, she stated that 657 cattle across the state had become seriously ill as a result of consuming adulterated cattle feed sold by KS Feeds. There were 245 cattle affected in Kottayam alone. In total, eight cows had died in the state as a result of feed contamination.

Ms. Chinchurani indicated that farmers who had insured their cows would receive a new cow to replace the one lost, whilst others will receive only \$15,000 from the department's contingency fund as compensation.

She stated that a police report had been filed in connection with the feed contamination, and that additional investigations were underway. Postmortem examinations of the cows,

analysis of samples collected by the veterinary surgeon, and samples of feed were sent to the Chemical Analysis Lab.

Large poultry farms are to blame for the price increase in Bangladesh: Bangladesh Poultry Association



The Bangladesh Poultry Association stated that large poultry farms in the country were to blame for the recent increase in prices of broiler chickens and eggs, which harmed marginal poultry farmers. The claim was made at a press conference held at the Dhaka Reporters Unity in the capital Dhaka. It claimed that because large farms are the sole producers of poultry feed and broiler chicks, the prices of the two items are set in their favour.

Elias Khandkar, general secretary of the BPA said, "The large farms raised the prices in the season when the marginal farmers collected broiler chicks for their farms."

Elias said that the large farms also produced broiler meat and eggs through contract farmers.

So, the farms also sell poultry feed at different prices to contract and marginal farmers, which increases the marginal farmers' production costs, he said.

'The farms, including Kazi Farms Limited, Paragon and CP, sell a 50-kilogram sack of feed at Tk 2,700 to the contract farmers and at Tk 3,500 to the marginal farmers,' he alleged.

Sumon Hawladar, president of the BPA, said that since the large farms' production costs of broiler chickens and

eggs were lower, the farms could sell the products at lower prices.

Thus, the marginal farmers are forced to sell their products at a losing price, he claimed.

He said that many marginal farmers closed their farms due to the high production costs.

Out of 1,50,000 farms, around 60,000 farms are now operating business in the country.

The BPA urged the government to monitor the market to save the marginal farmers as they produce 90 per cent of broiler chickens and eggs in the country.

A senior official of C.P. Bangladesh said that the prices of chicks had increased as the demand for chicks had risen sharply recently with the prices of broiler chickens soaring.

"We had to count losses a couple of months ago as the demand was very low then. The situation had forced us to sell parent stock at that time. So, the production of chicks is low now, but the demand is high."

Regarding selling poultry feed at different prices, he said that the farm sold feed at a lower rate to contract farmers as they were directly involved with the farm.

He also said that presently a kilogram of poultry feed was sold to contract farmers at Tk 64 while that was sold at Tk 71 to dealers.

Mintec and Urner Barry combine through acquisition



Mintec, a global provider of agrifood price data, analytics, and forecasts, has acquired AgriBriefing, which includes the brands Urner Barry, FeedInfo, and Tropical Research Services.

Building on previous Mintec acquisitions

such as Kairos Commodities and CommoPrices, the combined company will be the largest agrifood-focused price reporting agency (PRA) and global information provider with a unique portfolio of feed-to-food commodity prices, forecasts, cost modelling tools, and fundamental market data, serving over 5,000 customers in 50 countries.

"We are delighted that Urner Barry has joined Mintec on this exciting journey. All of our combined customers can now further optimize their business strategy with access to even more robust and reliable price data and analytics for the key commodities they buy, sell, and consume," said Spencer Wicks, CEO of Mintec. "By combining the extensive range of unique data and market intelligence available, we will be offering access to the most comprehensive solution and resource for businesses to navigate the global pressures impacting their costs and overall profitability."

AgriBriefing, headquartered in London and with offices in the United States and France, is made up of multiple global brands with a combined heritage of more than 200 years, specialising in agrifood supply chains through its products and proprietary data. Market leaders, such as Urner Barry, the original agrifood PRA founded in 1857 and the leading provider of North American protein price benchmarks across 4,100 proprietary prices, help the protein industry do business more effectively.

"This partnership is a fantastic combination of commodity intelligence companies that ensures our customers can stay on top of commodity price challenges and opportunities related to cost. It's a natural home for us," said Rory Brown, CEO of AgriBriefing.

"By joining forces with Mintec, our customers can now benefit from the world's largest commodity price database, IOSCO-compliant proprietary prices and features that include cost modelling, commodity and weather analysis, and extensive price forecasts," said Joe Muldowney, CEO of Urner Barry. "The group's strengths are in our deep understanding of the feed-to-food commodity markets and as the No. 1 IOSCO compliant price reporting agency. This is evident through the prominence

of Urner Barry within the meat, plant protein, seafood and eggs sectors, and the extent to which our proprietary prices have become industry benchmarks."

Mintec is a portfolio company of Five Arrows and Synova, who hold a significant minority investment. The combination with AgriBriefing will be the first strategic transformational acquisition following Five Arrows' investment in the company.

Novus acquires biotech company Agrivida



Global animal health and nutrition company Novus International Inc. has acquired biotech company Agrivida Inc. Through the purchase, Novus takes ownership of the proprietary INTERIUS technology Agrivida developed to embed feed additives inside grain.

This move by Novus comes two years after it began a commercial partnership with Agrivida to support the sale of the start-up's flagship product, GRAINZYME.

"Since December 2020, we've taken the time to understand and explore what INTERIUS technology is capable of," says Novus President and CEO Dan Meagher. "With this technology, we believe we can revolutionize the feed additive industry through the expression of high-value, functional proteins inside grain, providing new products that are sustainable, both environmentally and operationally."

While the category of functional proteins includes enzymes, which Agrivida has already accomplished through GRAINZYME, the Novus Innovation team is expanding the product offerings to include antibodies embedded in grain.

"Single-domain antibodies present an opportunity to naturally address the

health challenges producers face in antibiotic-reduced and antibiotic-free production. These antibodies are a challenge to produce cost-effectively and deliver to the animal in a sustainable way," says Novus Vice President and Chief Innovation Officer Al Zimmerman. "INTERIUS technology addresses these challenges by removing costly fermentation and coating processes as well as offers the potential to stack different antibodies and/or enzymes in a single corn product solution for the animal. Traditionally these efforts would require blended products, which would mean more processing and cost. The INTERIUS technology delivers this benefit in a single ingredient – corn."

Instead of producing feed additives through fermentation, INTERIUS technology instructs the grain on how to produce the additive directly in the grain. The grain is grown, harvested, ground, and fed to the animal in the same manner as any other corn in the diet. According to Zimmerman, having the additive inside the grain allows the molecules to be absorbed more efficiently by the animal, allowing producers to improve performance and return on investment.

Agrivida Inc. and its operations in Massachusetts and Nebraska are included in the acquisition. The Agrivida team, led by R. Michael Raab and Jeremy SchleyJohnson, will join Novus, bringing their innovative approach to developing functional proteins with them.

Raab, who also serves as Agrivida's chief technology officer, is optimistic about the opportunities ahead.

"Joining Novus will accelerate the deployment of new animal health and nutrition solutions through the INTERIUS platform. As Agrivida alone, our bandwidth to develop and commercialize products was limited by our resources and global expertise. As part of Novus, we can now bring multiple products to market and attain a global reach to deliver new, technology-based solutions faster than before."

Novus did not disclose the financial specifics of the acquisition. Meagher says the Novus Research and Development team and Agrivida scientists are working on exciting pathways to address

producer pains through this sustainable, disruptive technology.

Nutreco and BiomEdit to partner on microbiome technology



Nutreco and BiomEdit have formed a long-term strategic research and commercial partnership to bring innovative and novel feed additives developed through microbiome technology to livestock producers. Nutreco Exploration (NutEx), Nutreco's team tasked with developing proprietary ultra-specialty ingredients to promote its purpose of Feeding the Future, joins forces with BiomEdit, its advanced microbiome biotech company.

The collaboration will focus on the discovery, development, and commercialization of biome-actives created with BiomEdit's advanced microbiome science and bioinformatics platform. These novel feed additives address today's animal producers' health and sustainability concerns for aquaculture, poultry, swine, and cattle.

Recent research into the gut microbiome has resulted in a basic understanding of their role in human and animal health, as well as how foods are digested in the gastrointestinal tract. Influencing the gut microbiome – the microbes, what they produce, and their environment – for example, through food supplements or medicines – can have a significant impact on human health – and, similarly, can impact animal health, well-being, and performance.

"Saying that microbiome science has created a buzz in the last decade is an

understatement. However, practical applications of this scientific progress remain scarce. Instead of focusing on microbiome composition and how to affect it, at Nutreco, we believe that mining the microbiome to find microbial functions that will benefit the animal's physiology will unlock real sustainable progress for the welfare, health and productivity of farm animals," said Nutreco's Chief Science Officer David Bravo. "Our first NutEx strategic program will focus on these biome-actives. We share so much with BiomEdit's teams – scientific views, discovery and development processes, culture and approach – that it was only logical to engage in this major strategic partnership."

Aaron Schacht, CEO of BiomEdit, said: "Microbiome science has the potential to address the complex health challenges and unmet needs our customers and their livestock face today. By leveraging BiomEdit's advanced microbiome discovery platform and bench of deep experts together with Nutreco's expertise and commercial deployment capabilities, we will launch novel feed additive products that address some of the most important problems in animal health, sustainability and food security. This broad strategic alliance with Nutreco is unique in our industry and plays to the strengths of both companies. Together, we will drive innovation and raise customer expectations for the impact of novel feed additives in livestock production systems."

This industry-influencing move combines the depth, breadth and experience of a leading animal nutrition company with a leading biotechnology R&D program.

QFFD aids expanding poultry sector in Sierra Leona and The Gambia with \$13 million

Qatar Fund for Development (QFFD) has



signed a 5-year, \$13 million agreement with World Poultry Foundation (WPF) to expand its flagship program the 'African Poultry Multiplication Initiative (APMI)' to The Gambia and Sierra Leone.

The new partnership will increase poultry production by up to 200 percent compared to local indigenous breeds for over 100 thousand small-scale producers, significantly increasing household income and nutrition.

On this occasion, the Director General of QFFD Khalifa Al Kuwari said "this partnership with WPF and supporting unique programs such as APMI is a quantum leap in the food security sector, as poultry production systems will not only resource-poor areas, but will play a massive role in providing livelihood essentials to vulnerable groups and provide households with income and nutritionally food sources."

"This agreement is a continuation of QFFD's efforts in supporting food security and climate efforts, last year Qatar Fund for Development launched Nanmo initiative with Bill & Melinda Gates, investing in climate-adaptive agriculture tools and technologies to build resilient food systems and markets that provide nutrition, income, and economic opportunities to small-scale producers in the African communities," Al Kuwari added.

The statistics indicate that across Africa, over 70 percent of smallholder farmers rear poultry, 80 percent of whom are women. These farmers often need access to high-quality poultry, balanced feed, technical training, access to financial

services, and efficient market linkages to realize a profitable poultry operation.

It is noteworthy that, since 2017, WPF has been involved in developing and implementing the African Poultry Multiplication Initiative (APMI). The program has supported the distribution of 97.5 million day-old chicks, registered over 13,000 new Brooder Units, and reached nearly 2.4 million small-scale producers in Nigeria, Tanzania, and Zimbabwe. The APMI program works with private sector partners to incentivize developing markets in hard-to-reach rural areas where high-quality inputs are otherwise inaccessible.

Researchers develop tool to understand new IBD variants



The Pirbright Institute researchers have created new tools and techniques to assess the breadth of immune responses provided by vaccines against different variants of the infectious bursal disease virus (IBDV).

IBDV is a major threat to the global commercial poultry industry's productivity, causing not only severe disease but also suppressing birds' immune responses, making them susceptible to other infections.

Vaccination is the primary method of disease prevention in poultry. However, several variants of IBDV are spreading throughout the world, emphasising the importance of determining whether a vaccine against a single strain will produce an immune response against other virus variants and how many different variants a vaccine will protect against.

It can be difficult to obtain strains from different countries, but researchers at The Pirbright Institute have developed a new 'reverse genetics' technique in the lab that allows them to engineer artificial IBDV strains that mimic IBDV variants found in the UK and Europe, Australia, China, and Mexico.

The researchers also developed new tools to test a European vaccine and determine the breadth of immune responses it generated against strains from different countries and continents in the study, which was published in the *Journal of Virology*.

They discovered that the European vaccine produced strong immune responses against strains from the United Kingdom and Europe, but much weaker immune responses against variants from other countries. If these variants enter UK flocks, vaccines currently in use in the UK may no longer be effective.

The researchers are using the new tools and techniques developed in this study to identify the reason why the vaccine induced weaker immune responses against some of the variants.

Dr Vishu Reddy, senior postdoctoral scientist in the Viral Oncogenesis group, said: "We are aiming to identify the key virus mutations that are responsible for the difference in the immune response elicited by the vaccine. By identifying these key mutations, we hope to develop a vaccine in the future that protects against all the variants."

The Northern Ireland Poultry Industry continues to suffer from Influenza Outbreaks



The disease has been ravaging the British Isles nonstop since 2021, with no signs of abating. Last autumn, the now-feared migratory season brought a new wave of outbreaks, with 160 cases reported since October 1, 2022. To date, NI has narrowly avoided an incursion on a farm this winter, but there has been one scare with a single recorded case of kept birds.

With confirmed outbreaks in the Republic of Ireland just across the border and, most recently, a confirmed case on a laying farm in Western Scotland, biosecurity has never been more important. The Ulster Farmers' Union (UFU) continues to encourage all compliance with the housing order, particularly among owners of backyard flocks, and there is no doubt that all poultry owners' efforts in adhering to guidance have been a key factor in keeping the disease at bay.

A confirmed AI case causes significant disruption for the farmer involved. Aside from the stress of an outbreak, financial devastation in the absence of adequate insurance coverage can pose a significant risk to the farmer's livelihood. Because of the disease's widespread nature, many producers are now unable to obtain specialist disease insurance. Significant downtime on infected premises can be expected. The farm will most likely be out of production for at least six months due to stringent disinfection procedures. Because of the disease burden in some parts of England,

farms will not be restocked for indefinite periods of time.

Aside from the disease risk, some egg-producing farms had already stopped production due to dwindling margins following the outbreak of the Ukraine war. End users are now witnessing the consequences of declining bird populations on farms. Shoppers are seeing limits on the number of eggs that can be purchased. The ongoing loss of laying flocks due to AI infection exacerbates the industry's supply issues, which began 12 months ago.

Despite unprecedented demand, the costs of establishing new infrastructure to expand remain extremely high for farmers. The aforementioned factors represent an intriguing phenomenon in which supply is short, demand is steady, and prices are rising as a result, but farmers are hesitant to step in and meet market demands due to disease risk and large financial commitments. Such conditions point to supply chain turbulence and UFU is already aware of some processors from the mainland coming to NI to secure product supply from the existing established producer base.

While healthy competition is beneficial to farmers, it is important to exercise caution. It is critical to ensure that the terms of any contract are acceptable to both the farmer and the processor. Before considering a seismic change in their contracted supplier, the UFU recommends that any contract be carefully reviewed and legal advice sought.

AI outbreaks in France impact Russian turkey meat market

Russian turkey farmers warn of a slump in



output in the first half of 2023 due to a shortage of hatching eggs, Anatoly Velmatov, executive director of the Russian national turkey producers' association, told local news outlet, Rusng.

Currently, the Russian turkey industry lacks between 500 and 700 million hatching eggs. The problem is primarily associated with a series of avian influenza outbreaks in France, which disrupted export supplies, including those to Russian customers.

"A production slump can be [anticipated]. Our current shortage will reflect [on the production figures] of the first half of 2023. I believe [this will happen] closer to the second quarter," Velmanov said, adding that a search for alternative suppliers remains problematic since the "epizootic situation doesn't improve worldwide".

He estimated that the existing and planned hatching egg production in Russia would be sufficient to cover only 80% of the domestic demand.

Currently, Russian poultry farmers are building several new hatcheries, including one near Tyumen, with 12 million hatching eggs per year, and Voronezh, with a capacity of 6 million hatching eggs per year. New operations are expected to begin in the country in 2023 and 2024.

In 2022, Russian turkey meat production could add 5-7% to the previous year's level, reaching 420,000 tonnes. Last year Russia was likely ranked second on the list of the world's largest turkey meat manufacturers, according to the Russian national turkey producers' association.

At the end of last year, retail turkey meat prices in Russia stabilised at 320-330 roubles (US\$4.1-US\$4.2) per kg. Russia saw a steady rise in sales of turkey meat on the domestic market over the past several years. Turkey primarily competes with pork in terms of price and beef in terms of quality, Velmatov said.

Velmatov also recalled that a group of Russian scientists recently proposed revising the consumer basket, replacing beef with turkey. He explained that such a step would be justified since turkey has similar nutritional value and is half the price.

Russia currently exports turkey to Africa, China and the Middle East. Velmatov said

that in 2022, Russian turkey exports jumped by 100% to 150% compared to the previous year, not providing concrete figures.

By 2030, Russia's turkey export is forecasted to quadruple compared to 2020 to 35,000 tonnes.

Aviagen expands its range of scholarships



Aviagen has broadened its range of scholarships to include a hatchery module for the first time this year.

The Next-Gen Scholarship was launched by the breeding company last year, with breeder and broiler modules.

All three modules enable up-and-coming industry talent to start a longstanding connection with the Aviagen team. Scholarship recipients also have the chance to attend other UK industry events.

UK poultry professionals 35 years or younger, who have a passion for poultry and a desire to further develop their knowledge are encouraged to apply before the deadline of 3 March.

Aviagen UK head of sales and technical, Stuart Thomson, said: "We are passionate about encouraging and inspiring our next generation of poultry people. The future of our industry depends on them, and we want them to have this opportunity to start an exciting learning journey with their industry colleagues and tutors."

Chicken the favourite in Kenya as the sector continues to develop

Chicken topped the orders list as the most ordered item, according to the Bolt Food platform, with customers



requesting the dish over 30,000 times throughout the year.

The food delivery business "exploded" in the wake of the Covid-19 pandemic because of the restrictions on the opening of hotels and restaurants.

Meanwhile, about 50 million birds are slaughtered in Kenya annually, with 92.6% of the population frequently eating chicken, reports the FAO. The organisation also reported that at least 45 million Kenyans frequently consume chicken, with 27.6% of the total population eating a meal with chicken weekly.

And, consumption is anticipated to continue to rise. FAO-Kenya's animal production and value chain analysts, Stephen Gikonyo, estimates that consumption of poultry meat and eggs is projected to rise to 92,000 tonnes (up 289%) and 245,000 tonnes (up 211%), respectively, by 2050.

Poultry farming is a developing sector in Kenya. One such project aimed at boosting the sector is the National Agricultural and Rural Inclusive Growth Project (NARIGP), which recently allocated Sh 81.9 million to boost poultry farming in Bungoma County, an area in the west of the country.

NARIGP is funded by the government of Kenya and the World Bank/International Development Association and has seen farmers' earnings leap from Sh 33 million in 2018 to Sh 300 million currently. Farmers contributed 10%.

NARIGP County Coordinator in Bungoma, Rebecca Lusweti, says the entry of the NARIGP project in 2018 changed everything and allowed numerous communities to align themselves to the chicken value chain. Farmers were trained on incubation, vaccination, feeding, brooding, housing and marketing.

Farmers were issued with incubator

machines, which saw hatching capacity increase to 10,000 chicks per cycle. Feed formulation equipment, mixers, millers, and raw materials were also offered, and farmers were taught how to formulate their own feeds. In addition, more than 100 chicken houses were erected.

According to Lusweti, through the project, the average number of live chickens has increased from 10 birds to an average of 100 birds per farmer.

She said farmers now enjoy chicken rearing as they have increased knowledge and have access to fertile eggs, chicken feeds, raw materials for feed formulation, vaccines, drugs and chicken marketing

Environmental contaminant found in organic egg yolks in Denmark



Organic egg yolks containing the environmental contaminant per- and polyfluoroalkyl substances (PFAS) have been discovered in Denmark.

Likely to have been transferred via fishmeal, which is included in feed for organic hens, the discovery has prompted concerns that children who eat many organic eggs could be at risk.

The contamination was found by the Danish National Food Institute in a study carried out in collaboration with the Danish Veterinary and Food Administration. Researchers also found lower levels in eggs from free-range, barn and battery hens.

PFAS's are known as 'forever chemicals' because they do not degrade in the environment and when eaten they can take 3-7 years before the substance concentration is halved.

Professor Kit Granby, of the DTU National

Food Institute, said the feed sector in Denmark had voluntarily agreed to replace fishmeal in organic feed for egg laying hens and that the issue was being reported to the EU.

"The authorities shall perform national monitoring programmes to control PFAS in the major food raw materials for PFAS and report to the EU. Both obligations shall protect the consumers from dietary exposure to chemical contaminants including PFAS," Granby told specialist media outlets.

Granby said the likely cause for the fishmeal contamination had been down to the raw materials in the feed as the ocean and seafood are polluted by atmospheric deposition of PFAS, which will contaminate fish.

The European Food Safety Authority has set, at the beginning of this year, the tolerable weekly intake of the sum of 4 specific PFAS (PFOA, PFNA, PFHxS and PFOS) at 4.4 nanograms per kg body weight per week. Among the children who eat a substantial number of eggs – 5-6 per week – the intake is 10 nanograms per kg body weight per week. In addition, all citizens in Denmark are further exposed to PFAS from many other foods and sources, which contribute to the total intake.

"When children are at risk of being exposed to more than twice as much PFAS solely from eggs as the amount that is the limit for a safe intake, the risk is noticeable," added Granby.

However, she stressed that PFAS are not substances that make you actually ill, but if you consume large amounts for many years, it can affect the immune system.

Free-range egg producers in the UK face labeling changes



Eggs will be reclassified as 'barn eggs' as the 16-week grace period comes to an end following the introduction of the first housing order that was imposed on flocks in parts of East Anglia in mid-October.

This was followed by an 'all-England' housing order on 7 November, with Wales and Northern Ireland following suit over the following month. Scotland was the only home nation not to impose an order.

Due to operational difficulties posed by different 16-week clocks ticking, the labeling solution – agreed with the British Retail Consortium in 2022 – is being aligned with the end of the first 16-week period in parts of East Anglia.

The British Egg Industry Council (BEIC) said there was no prospect of an imminent end to the compulsory housing order as highly pathogenic avian influenza outbreaks continue across the UK. The BEIC has announced the following:

- New procedures to transition the stamping and labelling of eggs previously designated 'free-range'. These apply to farmers whose flocks are registered under the British Lion free-range scheme with contracts with BEIC-registered packers.
- A temporary derogation to the Lion Code of Practice, removing the requirement for each eggshell to be marked on the farm with a Producer Establishment Number. The code will now be applied at the packing centre.
- From 1 February, printers at the packing centres were re-programmed to print the 'Barn-PEN' on the eggs' shells.

It is understood that these temporary arrangements will remain in place until 7 days after the housing order is lifted.

Meanwhile, in the UK, there have been 166 confirmed cases of highly pathogenic avian influenza H5N1 since 1 October 2022. Of these, 144 cases have been found in England, 18 in Scotland, 3 in Wales and 1 in Northern Ireland. There have been 279 cases of avian influenza H5N1 in England since the current outbreak started in October 2021.

India's egg exports surge to fill Malaysia's acute shortage



It is anticipated that India is exporting a record number of eggs to Malaysia where there have been 'acute shortages' as soaring feed prices has resulted in many farmers to cut output.

Malaysia's Ministry of Agriculture and Food Security agreed to temporarily allow the import of chicken eggs from foreign countries, adding that the decision will be reviewed when the domestic supply stabilizes.

While Middle Eastern countries such as Oman and Qatar are the main destinations for India's eggs, the export landscape over recent months has changed with significant orders from countries where output has plummeted, including Malaysia, which previously exported eggs.

Following the imports of eggs from foreign countries, the eggs shortage in Malaysia was reduced to 1 million in December, according to the country's Agriculture and Food Security Minister, Mohamad Sabu, CNA reported. This compares to a shortage of 157 million eggs in November and 118 million eggs in November.

"For the first time, Malaysia is buying large quantities of eggs from India, and it seems that India's egg exports to Malaysia will remain strong during the first half of 2023," Sasti Kumar, joint managing director at Namakkal-based Ponni Farms, one of India's leading egg exporters, told Reuters. He added that India shipped 5 million eggs to Malaysia in December, 10 million in January and up to 15 million in February.

Egg imports from India have helped Malaysia bring prices down from the record highs seen in December. The president of the Federation of Livestock Farmers' Association of Malaysia, Tan Chee Hee, is positive that egg production in the country will recover in the coming months as the government increases subsidies.

Iran sees a record slump in poultry consumption

The Iranian poultry farming industry has not been in the best shape for the past several years, but the last few months were the worst, estimated Ataullah Hassanzadeh, CEO of Mazandaran poultry farmers union.



Broiler Starter Mash Feed

Broiler Finisher Mash Feed

PATEL FEEDERS
POULTRY FEEDS
Broiler FINISHER

PATEL FEEDERS

Broiler FINISHER

Shanti Nagar, Shahjuri, Bargi Nagar, JABALPUR (M.P.)
Mobile : 9009992690, 6264191839

M/s Patel Feeders

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

For Any Query:

9009992690 | 6264191839

In December-January, the market evidenced a surplus of 15 million heads of chicken, with a value of up to 400 billion tomans (US\$0.95 million), he estimated. Rough calculations showed that the demand slumped by 20-30%, though this figure can vary across Iran's provinces. Mazandaran poultry farmers are estimated to provide 80% of broiler meat consumed in the country's capital of Tehran.

Plummeting consumption has forced poultry farmers to act. Hassanzadeh said that producers had to remove hatching eggs from the production cycle.

This step comes with great pain for Iranian farmers since thousands of expensive eggs are wasted. The price of hatching eggs on the Iranian market now stands at 12,000 tomans (US\$0.028) per unit, compared to 2,500 tomans (US\$0.006) at the beginning of 2022. The price of day-old chicks currently amounts to 15,000 tomans (US\$0.036) per head, compared to only 3,000 to 5,000 tomans (US\$0.007 to US\$0.012) last year.

The sudden slump in demand is primarily attributed to a failed food industry reform embarked on by the Iranian authorities in November 2022. The government revised state-subsidised exchange rate tariffs under which poultry farmers purchase feedstuff. Hassanzadeh estimated that this step entailed a fivefold rise in the price of corn and soybeans and caused an unprecedented price hike in the broiler market.

To compensate for the rise in prices, the government planned to introduce food stamps to partly cover the price of broiler meat for the population at the end of 2022. However, it turned out that the infrastructure under the system was not ready in time.

With the current level of the real incomes of the Iranian population, the demand on the poultry market is estimated at 120 million heads of broilers per month, close to the average figure of the past few years. Without food stamps, it drops to 90 million heads, Hassanzadeh said. There is no clarity on when the food stamps system will finally be put in place.

On the other hand, even the recent price hike has not fully compensated the

Iranian farmers for the rise in production costs, Hassanzadeh said. Currently, manufacturers sell broilers at a loss of 10,000 tomans per head (US\$0.024). The new crisis severely hits the industry that has been struggling with problems for a long time. Hassanzadeh expressed the opinion that poultry farmers "are tired of losses" and some are considering ending their businesses.

Kerala plans law to ensure quality of cattle, poultry feed



The State government will soon bring in legislation to ensure the quality of cattle and poultry feed sold in the State, with punitive provisions to bring to book those found responsible for bringing adulterated feed into the market, Animal Husbandry Minister J. Chinchurani said in the Assembly.

Replying to a submission on the recent death of cattle in the State following the consumption of contaminated feed, she said that till date, 657 heads of cattle across the State had taken seriously ill following the consumption of adulterated cattle feed sold by KS Feeds. In Kottayam alone, 245 cattle had been affected. In all, eight cows had been reported dead in the State due to feed contamination.

Ms. Chinchurani said that farmers who had insured cows will get a new cow to replace the one lost, while for others, the department could only give ₹15,000 from the contingency fund as compensation.

She said a police case had been registered regarding the feed contamination and that follow-up investigations — postmortem examination of the cows, analysis of samples collected by the veterinary surgeon and samples of feed sent to Chemical Analysis Lab — were on.

The government was yet to receive the laboratory test results and as soon as the results were available, follow-up measures, including stringent action against those responsible for feed contamination, would be taken up, the Minister said.

New Zealanders set to secure their own supply of eggs



On 1 January, it became unlawful to house hens in cages. This is reportedly adding to the pressures that producers are facing and the Egg Producers Federation of New Zealand says there is currently a shortage of 300,000 hens.

But, New Zealand is among the countries that consume more eggs per person than most, and the recent shortage and price hike of eggs has caused locals to look to secure their own supplies in their own backyards.

Local auction site, Trade Me, said that searches for chickens and for equipment related to keeping chickens had spiked: "Since the start of January, we have seen over 65,000 searches for chickens and other chicken-related items, like feeders, coops and food," Millie Silvester, a spokesperson for the company, told CNN.

This "frenzy" has prompted animal welfare advocates to warn against impulse buying, highlighting that hens live for many years but do not produce an endless supply of eggs. The Trade Me platform has also urged customers to think through any purchases, highlighting the responsibilities of owning chickens. New Zealand supermarket chain, Foodstuffs, recently placed temporary limits on how many eggs each customer can buy, while another retailer, Countdown, said it

would encourage customers to “only buy what they need”.

Bakeries have also struggled with the supply shortage, with some reporting using alternative ingredients and others using more dried eggs as an alternative to fresh eggs. CNN says that some local cafes are even reducing the number of dishes containing fresh eggs on their menus.

In the US, the surge in the price of eggs has stood out compared to other grocery items, soaring almost 60% in 2022 compared to 2021, reports CNN. Meanwhile, around 10 million birds in Japan have been culled because of an avian influenza outbreak (58 outbreaks recorded this season), resulting in a record-high wholesale price with no end in sight yet.

CNA reports that the shortage of eggs in Malaysia was reduced to 1 million in December 2022 following imports of eggs from foreign countries. This compares to a shortage of 157 million eggs in November and 118 million eggs in October.

Seed funding awarded to grow seaweed to feed laying hens



A project assessing the best cultivation methods for growing seaweed to feed to egg-laying hens is among 4 innovative aquaculture seed funding projects supported in the UK.

The Centre for Innovation Excellence in Livestock (CIEL) has, for the first time,

provided aquaculture seed funding, which aims to help accelerate innovation, research and development in the sector. The focus is on 2 themes, namely, Life Cycle Assessment of aquatic species and using seaweeds to create a link between aquatic and terrestrial food production.

Seaweed start-up company, Seaweed Generation, has been awarded funding for a seaweed protein biomass cultivation system project. This will explore different cultivation methods for different seaweed species while also assessing the palatability for feeding the seaweed to egg-laying hens.

The project will test the prototype of a unique cultivation system using 2 different high-protein seaweed species. Nutrient analysis of the seaweeds' content will be undertaken by researchers at the University of Stirling and prepared dried seaweeds will be fed to several egg-laying hens to test their response to the addition of seaweeds in their diets.

Seaweeds have been used in poultry to improve animal immune status, to decrease the microbial load in the digestive tract, and for their beneficial effects on the quality of both eggs and poultry meat. They are generally fed in low amounts, with inclusion rates between 1% and 5%.

Seaweed Generation wants to combat

climate change with robotics and seaweed. Its first robot, AlgaRay, sinks invasive seaweed into the ocean, locking carbon away for hundreds of years and preventing environmental disasters caused by the seaweed species, such as Sargassum, which can seriously impact

human health when it hits coasts.

Its second robot, the AlgaVator, increases automation in seaweed cultivation, cutting costs of growing seaweed so that it can be used for high-volume products such as animal feed, fertiliser and packaging.

Paddy Estridge, Seaweed Generation CEO, said: “Seaweeds are fascinating organisms, and the more we study them, the more potential we see in them: they are globally distributed, occupying many ecological niches and supporting valuable ocean ecosystems. We are only now scratching the surface of seaweed potential.”

Martin Sutcliffe, CIEL's aquaculture specialist, added: “Bringing agrifood and aquaculture together is one of the main goals of this work. These are seed projects designed to be developed further in the future, helping drive the industry forward.”

The projects are due for completion later this year.

Think tank calls for Britain to be centre of cultivated meat revolution



With cultivated meat start-ups having received substantial funding and the cost of production declining by 99% in the past decade, the Institute of Economic Affairs (IEA) argues that Brexit provides the opportunity for the UK to diverge from the EU's approach and introduce a more welcome regulatory regime.

The report, 'Bangers and Cash', said it did not make sense for the UK to be importing £4.5 billion (about €5 million) of meat every year, hampering both the country's economic potential and its food security.

It added that environmental benefits were hugely compelling, arguing that cultivated meat is estimated to cause between 78-96% fewer carbon emissions, reduce water use by 82-96% and use 99% less land than intensively farmed produce, as well as reducing energy use by between 7-45%.

While it recognises that meat production provides a source of protein and enjoyment to billions of people, livestock farming, it said, has a devastating effect on the environment, including greenhouse gas emissions, polluted ecosystems and lost biodiversity. It also raises significant issues around animal welfare and health security, including infectious diseases.

But given meat's popularity, taxes or prohibitions are unlikely to significantly reduce consumption. The most effective response to the challenges associated with conventional meat, therefore, is innovation that provides customers with a quality and affordable alternative.

Economically, the product has the potential to add £2.1 billion (about €2.35 million) to the UK economy by 2030.

However, the EU's novel food regulations – which have been retained in UK law post-Brexit – have delayed the kind of innovation needed to tackle the challenges of industrial farming, says the report.

By embracing the precautionary principle, legislation which is now over 25 years old is holding back progress. The regulatory process takes on average 35 months to approve new products, creating uncertainty for potential investors and deterring new businesses from setting up in the UK compared to nations with less burdensome legislation.

The UK risks falling behind countries, such as the US and Singapore, which have begun approving lab-grown meat.

Matthew Lesh, IEA head of public policy and report author, said producing meat without animals was closer than many realised and there was a race to widespread commercialisation taking place.

"But in the UK this could be held back by unnecessarily cumbersome and precautionary regulation. Brexit provides

the opportunity for the UK to diverge from the EU's approach and introduce a regulatory regime that is more welcoming of food innovations such as cultivated meat, allowing us to become a world-leader in transformative technology."

The educational charity's report was welcomed by Jonathan Djanogly (Con, Huntingdon), who said cultivated meat was an innovative and cutting-edge solution to the significant challenges posed by intensive livestock farming.

"Farmers across the country deserve our thanks for the work they do in providing nutritious and quality produce, but, with demand for meat continuing to rise globally, it is only right that alternatives are considered – especially where alternatives can taste, look and smell the same as conventional meat," he said.

Eamonn Ives, former special adviser to the COP 26 president and head of research at the Entrepreneurs Network, added: "Successfully developing cultivated meat could not only eliminate animal suffering and mitigate climate change, it's also a huge economic opportunity for Britain's entrepreneurs."

Ukraine earns higher revenue from poultry exports



Last year, Ukrainian poultry exports totalled US\$852.9 million, which is 18.6% higher than in 2021, the Ukrainian Customs Service estimated.

In physical terms, Ukraine sold 413,000 tonnes to foreign customers, which is 10.3% down compared with the previous year. The key sales markets for Ukrainian poultry farmers were the Netherlands (29.6%), Saudi Arabia (25.8%) and Slovakia (7.6%).

Higher revenue was primarily secured by a rise in global broiler meat prices. In 2022,

poultry prices rose by nearly 10% on the domestic market, while export prices climbed by almost a third against 2021.

On the other hand, Ukrainian poultry farmers continued to suffer from power outages. Sergiy Karpenko, executive director of the union of poultry farmers, told local publication, Zerkalo Nedeli, that the nearly constant electricity shortage in the common energy grid has had a negative impact on operations and drove prices up.

"Power outages are forcing manufacturers to revise their production plans and downsize operations to reduce potential losses," he said. "The uninterrupted operation of electricity-powered equipment is critical."

Ukrainian poultry farmers switch to diesel generators to provide backup electricity supply to poultry houses. However, diesel generators are in short supply. According to estimates by the Ministry of Economy announced on 15 December, only 20% of critical retail outlets and about 15% of bank branches are equipped with generators.

This figure is believed to be higher in the poultry industry, but still insufficient. Karpenko said that Ukrainian poultry farmers use available generators primarily to secure electricity supply to hatcheries. He explained that a lack of power would entail a loss of hatching eggs and young chicks, incurring huge losses to the business.

MHP, Ukraine's largest poultry producer, faced complex challenges and operational disruptions after several of the country's electricity generation stations were hit by missile attacks, the company said in its last quarterly report.

Operations at some MHP facilities had to shut down for a short period of time after these missile hits. As of today, MHP is again operating close to full capacity, using a combination of state grids, electricity generated at MHP's biogas stations and diesel generators.

"However, events have shown that the situation can deteriorate seriously, quickly, and without notice," MHP said.

In December 2022, MHP produced 57,000 tonnes of poultry, compared to 69,000 tonnes in December 2021, the company estimated

Editorial Calendar 2023

Publishing Month: January Article Deadline : 30th, Dec. 2022 Advertising Deadline : 3rd, Jan. 2023 Focus : Winter Disease Management	Publishing Month: February Article Deadline : 30th, Jan. 2023 Advertising Deadline : 3rd, Feb. 2023 Focus : Health & Nutrition Management	Publishing Month: March Article Deadline : 28th, Feb. 2023 Advertising Deadline : 3rd, March 2023 Focus : Vaccination & Immunization	Publishing Month: April Article Deadline : 30th, March 2023 Advertising Deadline : 3rd, April 2023 Focus : Summer Management
Publishing Month: May Article Deadline : 30th, April 2023 Advertising Deadline : 3rd, May 2023 Focus : Cold Chain Management	Publishing Month: June Article Deadline : 30th, May 2023 Advertising Deadline : 3rd, June 2023 Focus : Feed Production	Publishing Month: July Article Deadline : 30th, June 2023 Advertising Deadline : 3rd, July 2023 Focus : Layer Farming	Publishing Month: August Article Deadline : 30th, July 2023 Advertising Deadline : 3rd, August 2023 Focus : Genetics & Breeding
Publishing Month: September Article Deadline : 30th, August 2023 Advertising Deadline : 3rd, September 2023 Focus : Biosecurity Practices	Publishing Month: October Article Deadline : 30th, September 2023 Advertising Deadline : 3rd, October 2023 Focus : Winter Breeding Management	Publishing Month: November Article Deadline : 30th, October 2023 Advertising Deadline : 3rd, November 2023 Focus : Environment Control	Publishing Month: December Article Deadline : 30th, November 2023 Advertising Deadline : 3rd, December 2023 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.pcs@gmail.com | editor.pcs@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"/>

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

High Humidity & Temperature Leads to

HEAT STRESS



Depletion
in plasma
Vit C level

High lipid
peroxidation
in cell
membrane

Reduced
egg
production

Reduced
feed
intake

High
morbidity &
mortality



Beat the
HEAT
with



AYUCEE™

NATURAL VITAMIN C WITH BIOFLAVONOIDS

PACK AND PRESENTATION

- 1 kg Metalized Polybag
- 1 Litre



Corporate Office : Unit No.101-103, 1st Floor,
KM Tower, Plot No. H-3, Sector-14,
Kaushambi, Ghaziabad-201010 (U.P.)
Tel.: +91-120-7100201 • Fax: +91-120-7100202
e-mail : consumercare@ayurved.com • website : www.ayurved.com
CIN No. U74899DL1992PLC050587

Regd. Office :
4th Floor, Sagar Plaza,
Distt. Centre, Laxmi Nagar,
Vikas Marg, Delhi-110092, India

**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