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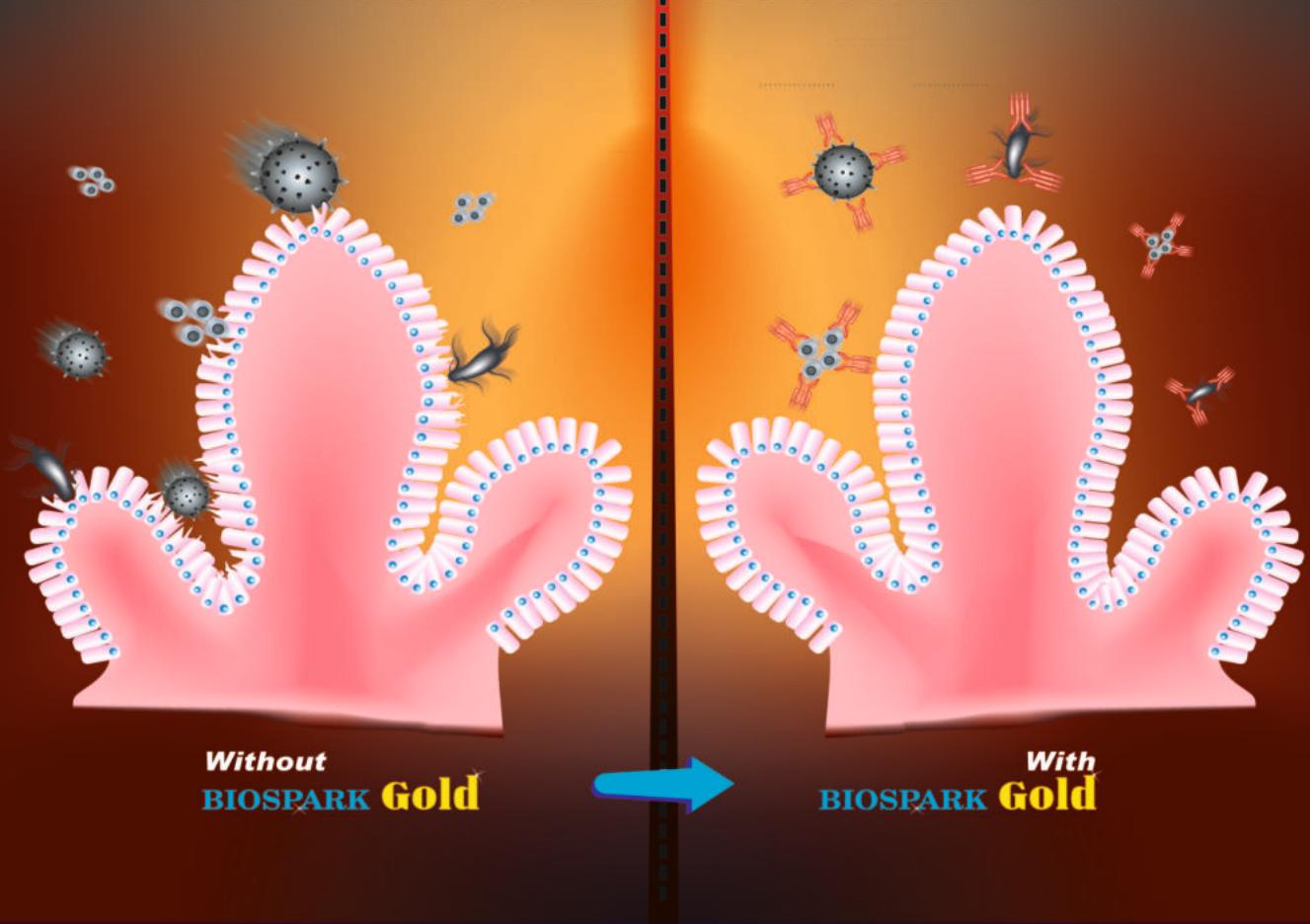
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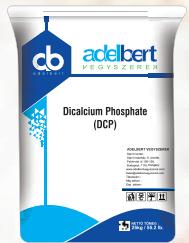
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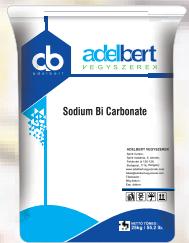
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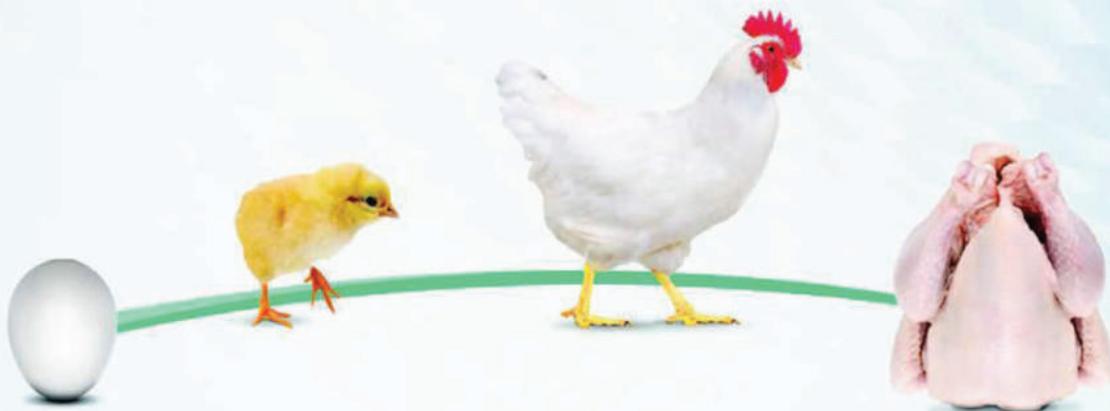
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CONTENTS

1. Indo	11 & 12
2. Egg Rate	38
3. Broiler Rates	14
4. EDITORIAL	13
5. PR CLFMA	22
6. Feeding, Nutrition and Disease Management of Ducks	58-61
7. Managemental Factors Affecting Hatching of Chicken Eggs	35-37
8. Recent advances in Nanoparticle vaccines in Poultry	51-52
9. Glocrest	19-21
10 NOVUS	49-50
11 SRINIVASA	53
12 ALLTECH	31-34
13 ABTL	47-48

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INDEX OF ADVERTISEMENTS

Particulars	Page No.	Particulars	Page No.
ABTL	46	Optima Life Sciences Pvt. Ltd.	55
Adelbert Vegyszerek,	6	Poultry consultancy services	61
Alltech	30	Promois International LT	4
Amantro Agro	7	Provet Pharma Pvt Ltd.	39
Anand Animal Health	16	RR Veterinary Healthcare Pvt Ltd	40
APC Nutrients	29	Regen Bio-Corp	42-43
AVITECH	56	Rossari Biotech Limited	41
ATA Packaging	37	Sai Krishna Plastic Industries	62
Bentoli AgriNutrition India Pvt. Ltd.	25	Shri Laxmi Ganapathi Agencies	52
Boehringer Ingelheim India Pvt. Ltd.,	10	Sri Lakshmi Packaging Company	50
Co-Mix	11	Srinivasa Farms Private Limited	54
Exotic Bio Solutions Pvt. Ltd.	28	ss Associates	50
Glocrest Pharmaceutical Pvt. Ltd.	18	Sylon Group	26
Hipra India Pvt. Ltd.	23	Swiss Chemie International	8
Himalaya Wellness Company	64 & Title Cover I	Uttara Impex Pvt. Ltd.	9
India Poultry Expo 2023 : Namakkal	63	Value Consultancy	5
Indian Herbs Specialities	45	VHPL Inside	15 Title II & IV
Karamsar	32	Zeus Biotech Limited	57
Labing India Pvt. Ltd.	44	Zoetis India Limited	27
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BOMB HAPPY ZELENSKY



A person who ordered bombing of 06 Muslim countries in his rule as a president - Iraq, Syria, Afghanistan, Sudan, Somalia, Libya Yemen were dropped with 26,000 bombs and indiscriminately killed children and civilians. So, Barak Husain Obama has no right to preach and make a false instigated remark about Muslims in India. The hypocrisy is clear with his own pathetic record of killing enormous number of people who were Muslim majority. The news is out that he was paid four million US Dollars for this propaganda.

The vested international community is bent upon damaging the peace in India-first of all Muslims are the second largest Majority in India and the world population wise so the statement is incorrect to call them a minority. The ex-president is being shamed in his own country for this paid propaganda.

The Indian Muslims need to raise voice against such fake narrative in their own interest.

The VIP program of "Veterinarian In Poultry" at Hyderabad - attracted very thoughtful insights about various Poultry issues. It was attended overwhelmingly and a good example of conducting similar conferences regionally too to benefit more in the industry.

FSSAI was advised to be more realistic in its formulation of standards which are viable and farmer friendly rather than antagonistic. The FSSAI officials were advising how the Poultry Industry could have them heard with more rational and scientific data which can help take right decisions by them.

The poultry should aim higher to be export worthy to be more sustainable- using opportunities of export to reduce excess supplies and thereby balance the market in a stable way. Modern practice and no use of antibiotics could pave way for exports.

Today it's a huge business globally that any issue gets financed through a NGO and similar organization that focus and target on a clear Agenda. All media is flooded with information that are deliberately generated for a preconceived idea. The elections for example being influenced and controlled via such an influential organizations. Beware readers, don't have to read the lines but in between and beyond the actual lines.

There is an organization that have marked hundreds of millions only to ensure that the current government is not ré-elected.

In India as a true democracy if people do not actively participate and raise the voice against falsehood and people who want the peace and harmony destroyed will be enslaved and ruled by outsiders. Internally if we are weak and do not unite against evil forces we may also join, Sudan, Syria, Afghanistan, Iraq or the current Ukraine - where the innocent civilian and military population gets bombed and destroyed every minute and have no say over their own lives and future. Bomb happy Zelensky is busy shopping and begging destructive arms that kill his own population. It's the west, NATO & the USA that will decide to add Ukraine too to the list of decimated nations.

Indians beware of Indians and insiders who are the Zelensky's of India.

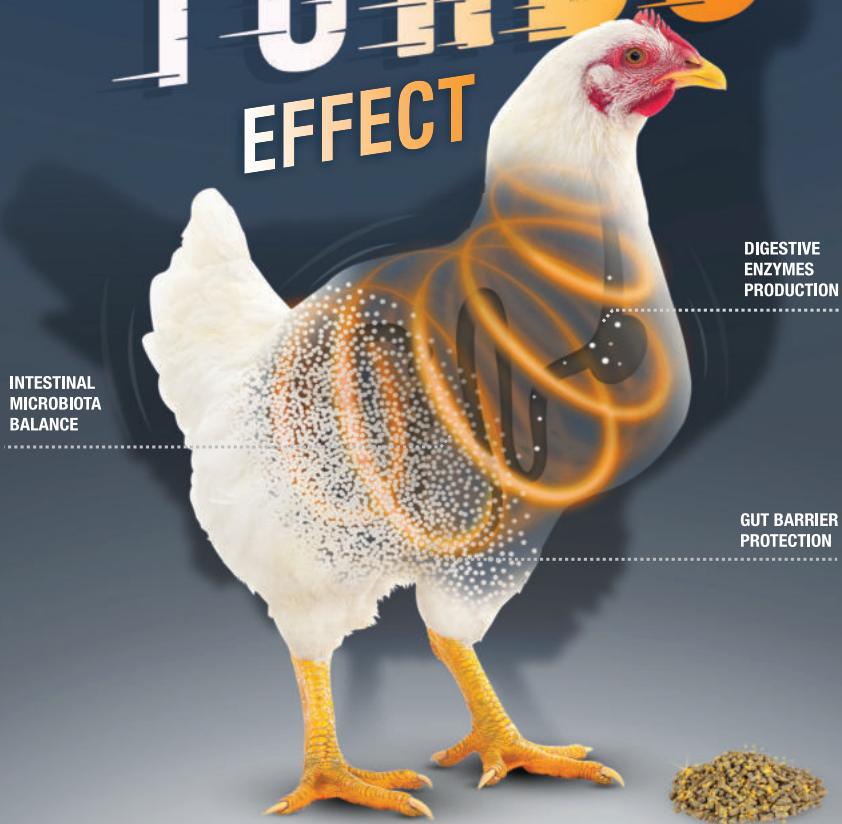
Broiler Lifting Rates for the month of May-2023

place	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	
Hyderabad	111	111	111	113	115	118	123	126	126	126	126	126	126	126	126	126	125	125	125	125	125	127	127	127	127	127	129	131	136	141	141	141
Karimnagar	111	111	111	113	115	118	123	123	126	126	126	126	126	126	126	126	125	125	125	125	125	125	127	127	127	127	129	131	136	141	141	141
Warangal	111	111	111	113	115	118	123	123	126	126	126	126	126	126	126	126	125	125	125	125	125	125	127	127	127	127	129	131	136	141	141	141
Mahaboobnagar	111	111	111	113	115	118	123	123	126	126	126	126	126	126	126	126	125	125	125	125	125	125	127	127	127	127	129	131	136	141	141	141
Kurnool	111	111	111	113	115	118	123	123	126	126	126	126	126	126	126	126	122	125	125	125	125	125	127	127	127	127	129	131	136	141	141	141
Vizag	107	107	109	112	115	120	120	122	122	122	122	118	121	121	121	121	121	121	121	121	121	121	123	123	123	125	127	132	132	137	137	137
Godavari	108	108	110	113	116	121	121	124	124	124	120	123	123	123	123	123	123	123	123	123	123	125	125	125	127	129	134	139	139	139	139	
Vijayawada	108	108	110	113	116	121	121	124	124	124	120	123	123	123	123	123	123	123	123	123	123	125	125	125	127	129	134	139	139	139	139	
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Nammakal	107	103	103	105	105	106	106	108	109	109	111	116	116	116	116	116	116	116	116	116	116	122	122	122	122	122	122	122	122	127	127	

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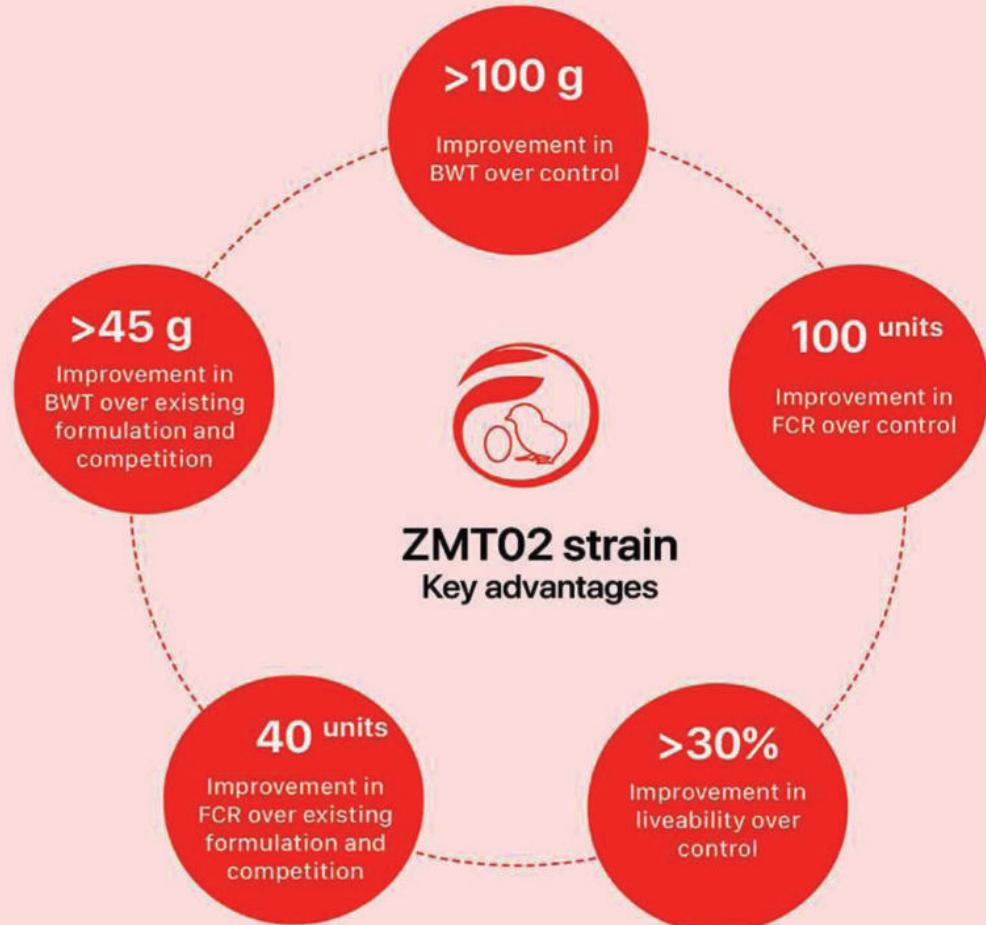
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Enzymes and probiotics are both commonly used in poultry farming to optimize the health and productivity of the birds.

Enzymes are proteins that catalyse (speed up) chemical reactions. In poultry diets, they are used to break down complex nutrients into simpler forms that can be more easily absorbed by the birds. For example, enzymes like protease, amylase, and lipase can break down proteins, carbohydrates, and fats, respectively. This can improve the nutritional value of feed, reduce feed costs, and reduce the environmental impact of poultry farming by decreasing the amount of undigested feed that ends up in manure.

Probiotics are live microorganisms (such as certain types of bacteria and yeasts) that provide health benefits when consumed. In poultry, probiotics are used to promote a healthy gut microbiota, which can improve digestion and nutrient absorption, boost the immune system, and help protect against harmful pathogens.

When used in combination, enzymes and probiotics can potentially work together to further enhance these benefits. For instance, enzymes can break down feed into simpler nutrients, making it easier for probiotic bacteria to thrive. Meanwhile, probiotics can create a healthier gut environment that enhances the activity of enzymes.

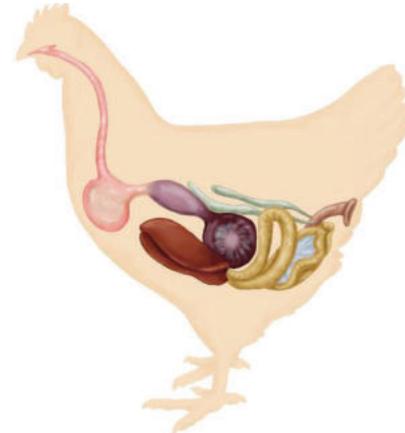
For **broilers** (chickens raised for meat), these benefits can lead to improved growth rates and feed conversion ratios (the amount of feed needed to gain a certain amount of weight), which can increase profitability.

For **layers** (chickens raised for egg production), these benefits can lead to improved egg production and egg quality.

For **breeders**, these benefits can enhance reproductive performance and the health and productivity of their offspring.

However, it's important to note that the specific benefits can vary depending on many factors, including the types of enzymes and probiotics used, the composition of the feed, the health status of the birds, and their living conditions. Also, while many studies have shown positive effects, more research is needed to fully understand the best ways to use enzymes and probiotics in combination in poultry diets.

In the rapidly evolving world of poultry farming, we understand the ever-present need for superior quality feed supplements that not only enhance the health and productivity of your birds, but also drive down costs and maximize profits. This is where GLOCREST steps in, delivering top-notch, scientifically backed solutions to keep your poultry flock thriving. We proudly introduce our flagship product: **Enziprob**.



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<i>Sachharomyces boulardii</i>	1×10^{11} CFU
<i>Bacillus subtilis</i>	1×10^{11} CFU
<i>Bacillus licheniformis</i>	1×10^{11} CFU
<i>Bacillus megaterium</i>	1×10^{11} CFU
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Xylanase: This enzyme breaks down xylans, complex carbohydrates found in plant cell walls, into simpler sugars that are easily absorbed by the birds. This aids in unlocking the nutritional potential of feed, leading to better weight gain and growth rates.

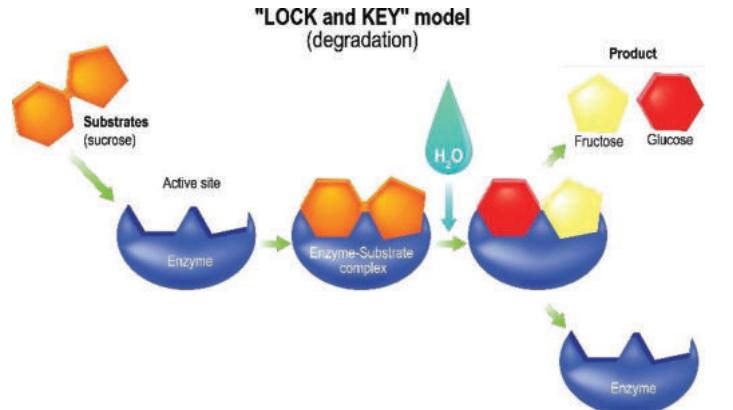
Alpha Amylase: It targets the breakdown of starch, a common component in poultry feed, into smaller, absorbable sugars, thus helping in energy extraction and reducing feed costs.

Cellulase: This enzyme degrades cellulose, a fibrous carbohydrate found in plant cell walls that are generally indigestible by poultry. With cellulase, the nutritional value of feed is increased, and the amount of undigested feed in manure is decreased.

Protease: Protease catalyzes the breakdown of proteins into simpler amino acids, essential for muscle development, feather growth, and egg production.

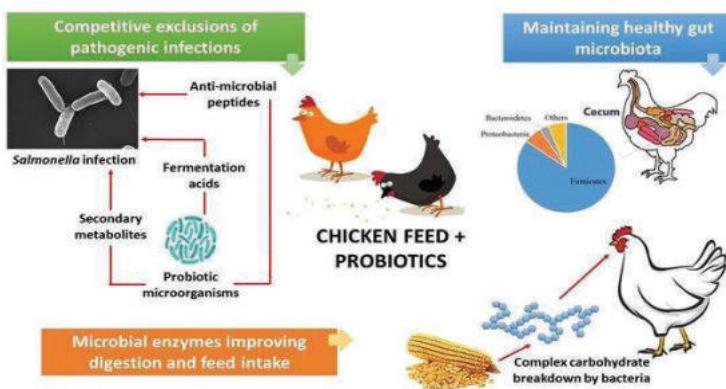
Mananase: This enzyme helps in breaking down mannans, complex carbohydrates that can interfere with nutrient absorption. By doing so, mananase aids in improving gut health and the overall performance of the birds.

Lipase: Lipase is vital in breaking down fats into fatty acids and glycerol, providing the birds with essential sources of energy and aiding in the absorption of fat-soluble vitamins.



Phytase: This enzyme breaks down phytic acid, a form of phosphorus found in grains and oilseeds that is not readily available to poultry. Phytase aids in better phosphorus utilization, reducing the need for inorganic phosphorus supplements and decreasing the environmental impact of poultry farming.

But the magic of **Enzipro** doesn't stop at enzymes. The product also contains five strains of probiotics: *Lactobacillus acidophilus*, *Sachharomyces boulardii*, *Bacillus subtilis*, *Bacillus licheniformis*, *Bacillus megaterium*, and *Bacillus polymyxa*. These beneficial bacteria bolster the gut microbiome, improving gut health and immunity, while outcompeting harmful pathogens. They also enhance nutrient absorption, giving your birds that much-needed edge for peak performance.



balanced gut flora.

***Bacillus subtilis*, *Bacillus licheniformis*, *Bacillus megaterium*, and *Bacillus polymyxa*:** These *Bacillus* species are hardy probiotics known for their ability to form protective spores, ensuring their survival until they reach the gut. Once in the gut, they can promote a healthy gut environment, support the immune system, and outcompete harmful pathogens.

At GLOCREST, we don't just offer a product, we offer a promise - a promise of quality, reliability, and sustainable growth. Our commitment to research and development ensures that every batch of Enzipro delivers consistent results, helping you meet and exceed your production goals. Invest in Enzipro today and witness a remarkable transformation in your poultry's health and productivity. Experience the unparalleled benefits of this unique enzyme-probiotic blend and watch as your business reaches new heights.

To order Enzipro or to learn more about how this product can revolutionize your poultry business, contact us today. Our dedicated team of poultry health experts is ready and eager to assist you in making the best decisions for your flock's health and your bottom line.

Enzipro-because at GLOCREST, we believe in nurturing nature's potential.

GLOCREST at glance:

Caring About Life, That Is Our Core Business.

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

PRESS RELEASE

CLFMA OF INDIA in association with Smt. Sarabatibai Deora Memorial Foundation Celebrated World Milk Day at B. Y. L. Nair Hospital, Mumbai on 1st June, 2023



World Milk Day is an international day established by the Food and Agriculture Organization of the United Nations to recognize the importance of milk as a global food. It is observed on June 1 each year since 2001.

Milk proteins are important sources of essential amino acids like tryptophan and lysine. Proteins in the diet supply the amino acids required for the growth of infants and children and for the maintenance of tissues in adults. It is an important component of a balanced diet and contains numerous valuable constituents. Considerable acclaimed health benefits of milk are related to its proteins, not only for their nutritive value but also for their biological properties. Scientific evidence suggests that anticarcinogenic activities, antihypertensive properties, immune system

modulation, and other metabolic features of milk, are affiliated with its proteins.

On 1st June, 2023, CLFMA OF INDIA in association with Smt. Sarabatibai Deora Memorial Foundation Celebrated World Milk Day at B. Y. L. Nair Hospital, Mumbai. CLFMA OF INDIA's Chairman Mr. Suresh Deora, B. Y. L. Nair Additional Academic Dean, Dr. Satish Dharap, CLFMA Executive Director Ms. Chandrika Venkatesh and CLFMA team were present in the event.

CLFMA distributed milk tetra packets to the patients and staff of Nair hospital for creating awareness about the importance of protein in the diet.

The initiative was well appreciated by the participants

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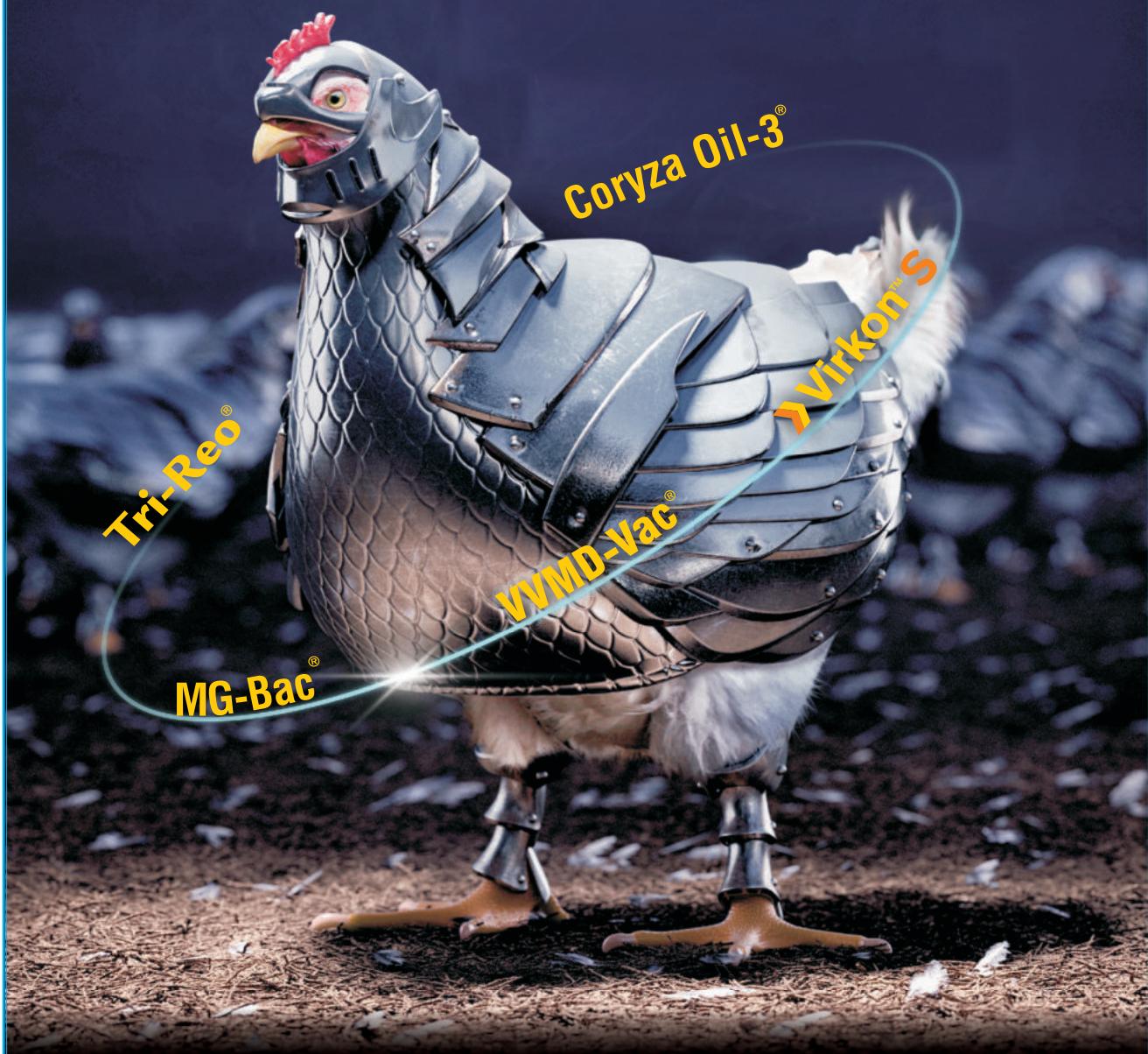
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Alltech®

Alltech and Agolin partner to provide eco-friendly nutrition solutions for supporting cattle production and sustainability goals

[LEXINGTON, Ky.] – As a global leader in animal nutrition, Alltech is proud to partner with companies that share its commitment to Working Together for a Planet of Plenty™. On May 3rd, Alltech announced it has acquired a majority interest in Agolin. Founded in 2006 in Switzerland, Agolin has developed and produced plant-based nutrition solutions that improve herd performance, profitability and sustainability, according to a 2020 meta-analysis* in the journal *Animals*.

Agolin's high-quality essential oil blends are scientifically proven to optimize feed intake and performance, including improved milk and meat production*. Furthermore, Agolin® Ruminant was the first feed additive certified by The Carbon Trust for methane reduction in ruminants (2018). Today, organizations such as Verra and Gold Standard are including it in their major international climate protection projects.

"Agolin's essential oil blends are a complement to Alltech's proven nutritional technologies, such as Yeast-Sacc® and Optigen®," said Dr. Mark Lyons, Alltech's president and CEO. "Governments, consumer brands and retailers are making important commitments to reduce their environmental impact. These commitments rely upon farmers and ranchers, and we are dedicated to supporting them with the best available nutritional technologies to achieve more milk and meat while reducing their environmental footprint."

The alliance between Alltech and Agolin will empower farmers and ranchers to reach their sustainability goals while also supporting the performance and profitability of the cattle in their herds and supply chains. The synergistic use of Alltech and Agolin nutritional technologies leads to benefits such as improved animal welfare, greater feed efficiency and conversion, enhanced milk and meat production, increased profitability, and a reduced environmental footprint, including a boost in nitrogen efficiency. The partners will also be exploring opportunities to develop new technologies that bring together the best of Alltech's proven nutrition and Agolin's essential oil blends. Agolin has a presence in Europe, Asia and North America. Alltech's majority interest in the company will expand the availability of Agolin to additional markets.

"We at Agolin are delighted with this strategic alliance to grow synergistically through the added technical expertise and global reach of Alltech," said Kurt Schaller, managing director of Agolin SA. "This represents a new era for our business, and we look forward to breaking new ground in our industry."

Agolin focuses on research and development to produce and market innovative feed additives based on plant active ingredients, which are effective and easy to use. Its essential oil blends are backed by a strong quality management system (FAMI-QS), which ensures safety and guarantees traceability.

For more information, visit alltech.com/agolin and agolin.com.



Photo caption: Alltech announced it has acquired a majority interest in Agolin, a company based in Switzerland that has developed and produced plant-based nutrition solutions that improve livestock performance, profitability and sustainability.

Left to Right: Michael Roe, Commercial Director of Agolin; Kurt Schaller, Managing Director of Agolin; Beatrice Zweifel, Technical Director of Agolin; and Mark Lyons, President & CEO of Alltech.

Contact: Dr. Manish Chaurasia, Marketing Manager, South Asia mchaurasia@alltech.com; +91 8130890989

About Alltech:

Founded in 1980 by Irish entrepreneur and scientist Dr. Pearse Lyons, Alltech delivers smarter, more sustainable solutions for agriculture. Our diverse

portfolio of products and services improves the health and performance of plants and animals, resulting in better nutrition for all and a decreased environmental impact.

We are a global leader in the agriculture industry. Our team produces specialty ingredients, premix supplements, feed and biologicals, backed by science and an unparalleled platform of services.

Strengthened by more than 40 years of scientific research, we carry forward a legacy of innovation and a unique culture that views challenges through an entrepreneurial lens. As a private, family-owned company, we adapt quickly to our customers' needs and focus on advanced innovation.

We believe agriculture has the greatest potential to shape the future of our planet. Our more than 5,000 talented team members worldwide share our purpose of Working Together for a Planet of Plenty™. Together, we can provide nutrition for all, revitalize local economies

and replenish the planet's natural resources.

Headquartered just outside of Lexington, Kentucky, USA, Alltech serves customers in more than 120 countries, has five bioscience centers, and operates more than 80 manufacturing facilities across the globe.

For more information, visit alltech.com, or join the conversation on Facebook, Twitter and LinkedIn.

About Agolin:

Agolin was founded in 2006 in Switzerland. We research, develop, produce and market innovative feed additives, based on plant active ingredients, that are easy to use, safe and proven through independent research to be effective. We are active across many markets, including Europe, Asia and North America. Agolin's quality management system (FAMI-QS) ensures safety and guarantees traceability. The company is a member of FEFANA, the EU Association of Specialty Feed Ingredients and their Mixtures.





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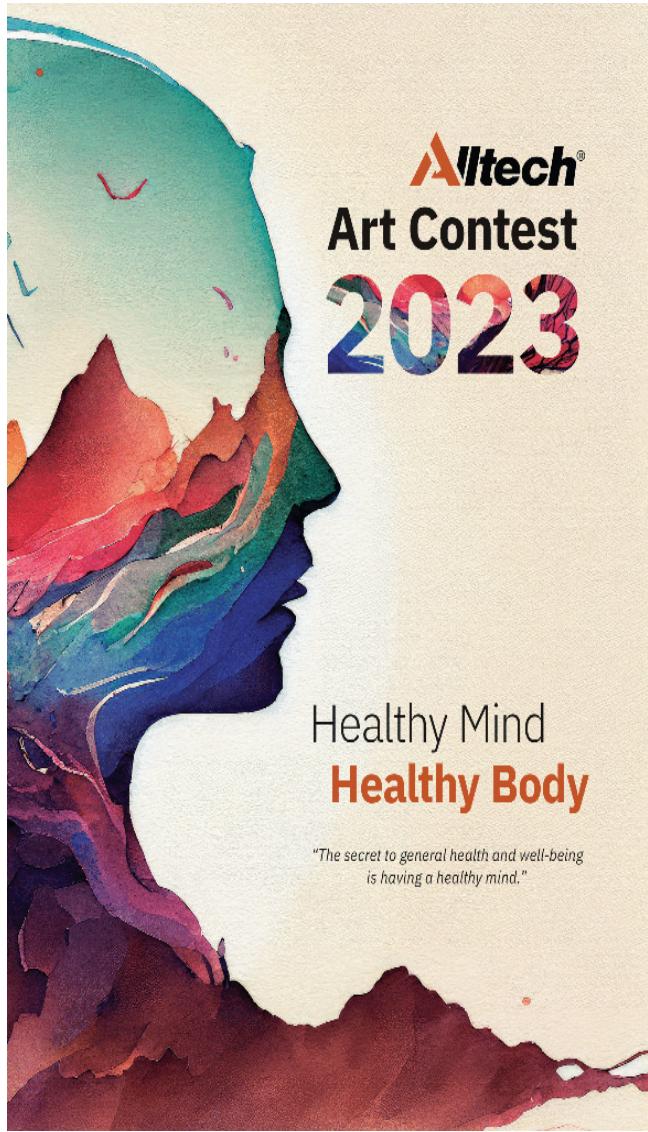
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Alltech launches ninth annual Art Contest, Invites Nationwide Participation from school children.



Alltech launches ninth annual Art Contest, invites nationwide participation from school children.

Alltech, a global leader in animal health and nutrition, announces the ninth annual Art Contest for schoolchildren. The competition will accept entries from June 9 to July 31, 2023.

The winning entries will be featured in the 2024 Alltech calendar and awarded cash prizes and certificates.

“Healthy Mind — Healthy Body” is the theme of this year’s art contest.

Having a healthy mind is paramount to overall health and well-being. A healthy mind influences your thoughts, feelings and actions, as well as your emotional, psychological and social well-being. It collaborates with your body and determines how you deal with stress, interact with others and make decisions.

Alltech chose the topic “Healthy Mind — Healthy Body” for this year’s art contest to help children realize the need to develop strong social, emotional, behavioral, thinking and communication skills as a foundation for greater mental health and physical well-being later in life.

“We are excited to announce the launch of the ninth annual Alltech Art Contest, with the theme ‘Healthy Mind — Healthy Body,’” said Dr. Aman Sayed, managing director of India and regional director of South Asia at Alltech. “A healthy mind is a precedent for a healthy body. Until recently, human evolution has been ‘outside-in,’ starting with the body, followed by the mind. In the new normal, this order has begun to reverse, and humans’ ‘inside-out’ journey has begun. Every parent and child should focus on a few basic areas - healthy nutrition, exercise, rest and stress reduction to maintain a fit mind and body.”

Who can participate?

All students between 5–16 can participate in the contest. The competition is open for children in India and Nepal.

When?

The contest is open for submissions from June 9 to July 31, 2023.

Online submission rules:

The theme “Healthy Mind — Healthy Body” must be the focus of the artwork.

- The artwork must be on paper of A4 size (210 x 297 mm) and in landscape mode.
- Acceptable media include crayons, watercolors, oil paints, acrylic paints, poster colors, color pencils, or pastels.
- The artwork must be unsigned by the artist.
- Entries should be submitted online. Upload a scanned image of the finished artwork to the website, filling in all the relevant details requested on the page. (Please only send a scan; do not mail us the original unless we ask for it.)
- The contest is open for participants from India and Nepal.

Submission:

The submission is online-only. Entrants must upload a scanned image of the artwork to the contest website and fill out all the relevant details requested on the page.

Check out the link below to participate and to learn more about the Alltech Art Contest.

Website link: <https://www.alltech.com/en-in/about/events/alltech-art-contest-2023>

Terms & condition:

- Artworks copied or downloaded from the internet, or copied from any other source, will be disqualified.
- All artwork submitted for the competition will become the property of Alltech and will not be returned.
- Winners will be announced on August 28. The

list of winners will be published on Alltech’s website and social media channels and will also be communicated through the mail.

For more details, please contact your local Alltech sales manager or email alltechartcontest@alltech.com.

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

mchaurasia@alltech.com; +91 8130890989

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

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



Managemental Factors Affecting Hatching of Chicken Eggs

S. K. Joshi¹, S. Sathapathy², P. K. Rath^{3*}, B. P. Mishra⁴ and S. S. Biswal⁵

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Introduction

At the time a fertile egg is laid, there is already a small embryo floating on the yolk. The vitality of this embryo must be preserved during storage until the point in time when the incubation process starts. To achieve this, the eggs are handled carefully and temperature fluctuations avoided as much as possible under practical conditions (Barten, 2007). Beside this common practice, specific management procedures may help to minimize the loss of hatchability during extended egg storage. Optimum hatchability and chick quality can only be achieved when the egg is held under ideal conditions between laying and setting in the incubator. Once the egg is laid, its hatching potential can be only maintained, but not improved.

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

A. The genetic make up

The genetic makeup of the parent stock is very important. The parent stock should be vigorous. Here again rearing plays an important part. Sexing errors need to be eliminated as chicks from false crossings do not possess the predicted characteristics.

B. The housing of the flock

The parent stock flock needs to be housed in well ventilated houses with correct indoor temperatures, litter in good condition (dry, not dusty, not crusty, without moulds), a well adjusted lighting program, sufficient feeder and watering space per bird. Ventilation is the most efficient method to reduce the amount of micro organisms in the air, which

may contaminate the hatching egg. A correct control of the fans-eliminates draught, maintains an ambient temperature and supplies sufficient fresh air in the house. At the onset of lay the depth of litter should not be too deep as this may result in many floor eggs. Instead of wood shavings coarse sand may be used. If drinkers stand or hang above the litter wet spots may be found, in which rotting bacteria may develop. Concrete floors are essential for a good disinfection and the prevention of repeating worm infestations.

C. Flock health and applied vaccination program

Never vaccinate against Infectious Bronchitis (IB) during the laying period. The importance using only hatching eggs from healthy disease free parent stock will be clear in one realizes that a number of poultry diseases are egg transmitted to the offspring. Use only PPLO and *Salmonella pullorum* free parent stock. It is well to remember that the temperature and the humidity of the incubator create perfect conditions for the development of micro-organisms which are the causative agents of many poultry diseases. Also the incubator is an ideal place for multiplication and distribution of diseases which are on or inside the hatching eggs (Brooder's pneumonia & Omphalitis). Some anti-coccidiostats and antibiotics may be harmful to the hatching result if applied during the laying period.

D. Feed and water

At the onset of egg production, special attention should be paid to the vitamin and trace element contents of the ration as well as to a proper balance in calcium allowances. Thin shelled eggs lower the hatching result. During stress periods give extra vitamins. Unbalanced feed and diseases may cause enteritis, whereby the absorption of the nutritional

compounds decreases, which results in poor hatching eggs, lower hatchability and weak day old chicks. Drinkers and feeders need to be cleaned regularly to prevent the growth of moulds and the development of other micro-organisms. Pure – non ferrous – drinking water should be provided to obtain a good production and good hatching results.

E. Male to female ratio

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

F. Age of the flock

It is wrong to expect good hatching results of first quality chicks from birds of 24 weeks or less. One should not collect hatching eggs from light breeds before 25 weeks of age. The poor hatching results at the onset of egg production is probably due to the relatively small yolks. Best hatching results are obtained from eggs collected from birds between the 8 and 13 months of age.

G. Flock performance

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

H. Egg-size

In general large eggs do not hatch well. The acceptable weight of hatching eggs ranges from 50 to 70 grams. Neither to large nor too small eggs is used for hatching.

I. Shell quality

In selecting hatching egg, the requirements regarding shell quality and egg shape will be higher for layers than for broilers. Thin shelled eggs tend to crack more easily with the consequent risk of contaminating other eggs and they should,

therefore, not be used as eggs for hatching. At peak production, during periods of extreme temperatures and at the end of the production period, special attention should be given to a proper balance in calcium allowances (supplementary oyster shell).

J. Nesting arrangements

With individual nest boxes, 1 nest per 5 hens should be provided and a satisfactory layer of clean nesting material should be available. The nests, if not automatic or semi automatic, should have clean litter. Broken eggs and dirty litter must be removed promptly since their contents must be considered as a potential hotbed of parasitic micro-organisms. To prevent roll-away nests getting dirty take care that bottom of the nest has a good slope and is cleaned regularly.

K. Gathering eggs

Frequent egg collections are determined by the season of the year, climatic conditions and the type of nests. At the moment an egg is laid it has a temperature of 410C (1050F) which is the body temperature of the hen. After an egg has been laid this temperature should decrease gradually till 270C (800F) within approximately 6 hours. At this temperature the embryonic development slows almost to a standstill. If hatching eggs are kept at temperature above 270C the blastodisc development continues and when cooled down this overdevelopment blastoderm may later on die. Cooling down too quickly is not good. In this case the blastodisc development is delayed which may result in a weak blastoderm, which may die too. Those hatching eggs having a chance of gradual cooling-down get strong blastodisc which may well stand storage and transport. From the foregoing it is obvious that frequent collections of hatching eggs is a must to obtain high quality hatching eggs.

L. The storage of hatching eggs

For the storage of hatching eggs one needs a good egg storage room. This room should have two compartments, one for cleaning, grading of eggs

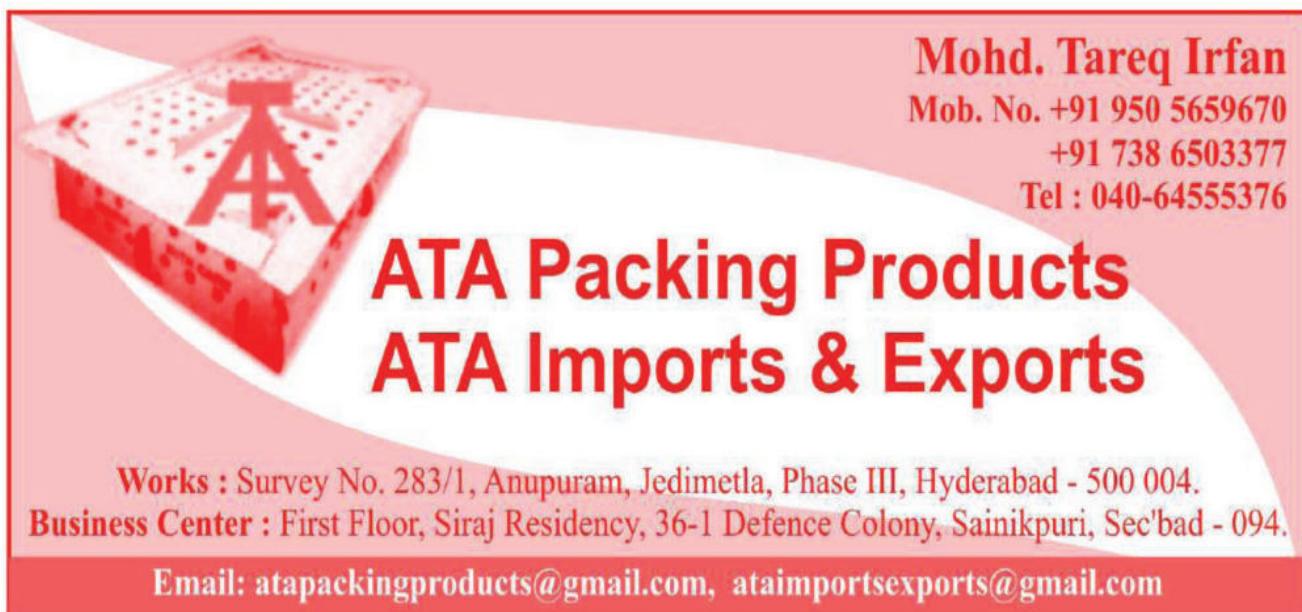
and storage of packing material and the other for the storage of hatching eggs. The latter needs to be fitted with a cooling and heating system and should be well insulated to maintain a constant temperature and humidity. For each square meter one may store 22 boxes (each of 360 eggs = 7920 eggs). In general it is recommended to store hatching eggs at a temperature of 180C. However one needs to distinguish according to the length of the period that the eggs are stored. The optimum temperature for eggs which are stored during 3 to 4 days is probably 180C. For a period from 4 up to 7 days the optimum temperature should be 160C.

If the storage is for more than 7 days the temperature needs to be 15-160C. When the temperature is lower, dew on the eggs can occur. During storage loss of moisture from the egg takes place due to water evaporation. The correct relative humidity is 72%. Storing conditions however must never reach the dew-point when condensation on the shell surface would provide favourable conditions for microbial growth. It is absolutely necessary to maintain a constant temperature, otherwise the relative humidity will fluctuate too. The ventilation

needs to be restricted to a minimum. If a cooling system is not present, during the night fresh cool air may be let in, while during the hot periods of the day the egg storage room should be kept locked. During the transportation of hatching eggs avoid shocks in order to prevent cracks. At least twice a week (better daily) the eggs need to be taken from the egg supply farms and transported to the hatchery if an egg storage room is not available on the farm.

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DAILY/MONTHLY EGG PRICES SUGGESTED BY NECC AND PREVAILING PRICES AT VARIOUS PRODUCTION CENTRES (PC) AND CONSUMPTION CENTRE (CC)

JUNE_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	Ave rag e
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Barwala	472	472	472	450	452	452	452	452	452	452	452	452	452	452	452	452	458	461	461	461	463	463	463	463	463	463	463	463	463	463	
Bengaluru (CC)	550	555	560	565	565	565	565	565	565	565	565	565	565	565	565	565	565	570	575	580	585	590	595	600	600	600	600	600	600		
Brahmapur (OD)	527	532	532	532	532	532	532	532	532	532	532	532	532	532	532	532	532	533	538	543	548	548	548	548	548	548	548	548	548		
Chennai (CC)	560	560	570	570	580	580	580	580	580	580	580	580	580	580	580	580	580	580	580	580	590	590	590	590	590	590	590	590	590		
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Delhi (CC)	489	489	491	491	469	469	469	469	469	469	469	469	469	469	469	469	465	465	465	472	481	483	483	483	483	483	483	483	483	483	
E.Godavari	510	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515		
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Hyderabad	485	490	495	500	500	500	500	500	500	500	500	500	500	500	500	500	505	510	515	520	525	530	535	540	540	540	540	540	540		
Jabalpur	503	506	506	506	506	506	506	506	506	506	506	506	506	506	506	506	505	505	505	505	505	505	505	505	505	505	505	505	505		
Kolkata (WB)	580	580	540	530	535	535	535	535	535	530	530	530	530	530	530	530	532	532	532	532	532	532	532	532	532	532	532	532	532		
Ludhiana	468	471	471	460	460	460	450	450	450	440	440	440	440	440	440	448	448	450	457	458	458	458	458	460	460	460	460	460	460		
Mumbai (CC)	540	545	555	560	565	565	565	565	565	565	565	565	565	565	565	565	565	565	565	565	570	575	580	585	590	595	600	605	605	605	
Mysuru	555	562	567	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572	572		
Namakkal	500	505	510	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515		
Pune	540	545	555	555	560	560	560	560	560	560	560	560	560	560	560	560	565	570	575	580	585	590	595	601	601	601	601	601	601		
Raipur	505	505	490	490	492	494	495	495	496	497	503	510	520	522	522	522	522	522	522	522	522	522	522	522	522	522	522	522	522		
Surat	530	535	540	540	540	540	540	540	540	540	540	540	540	540	540	540	545	550	555	560	560	560	560	560	560	560	560	560	560		
Vijayawada	510	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515		
Vizag	510	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515		
W.Godavari	510	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	465	465	470	475	480	490	500	510	515	520	525	530	530		
Warangal	487	492	497	502	502	502	502	502	502	502	502	502	502	502	502	502	507	512	517	522	527	532	537	542	542	542	542	542	542		
Prevailing Prices																															
Allahabad (CC)	519	524	524	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	
Bhopal	490	490	480	480	480	480	480	480	480	480	480	480	480	480	480	485	485	485	485	485	485	485	485	485	485	485	485	485	485	485	485
Indore (CC)	500	500	500	490	485	485	485	485	485	485	485	485	485	485	485	485	490	490	490	490	495	495	495	495	495	495	495	495	495	495	
Kanpur (CC)	500	500	500	500	500	490	490	490	490	490	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500		
Luknow (CC)	523	523	523	523	523	523	523	523	523	523	533	533	533	533	533	533	533	533	533	533	533	533	533	533	533	533	533	533	533		
Muzaffarpur (CC)	532	540	535	520	520	520	520	520	520	520	505	505	505	505	505	505	512	512	512	512	518	525	525	525	525	525	525	525	525	525	
Nagpur	515	515	515	510	505	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	
Patna	532	540	535	520	520	520	520	520	520	520	505	505	505	505	505	505	512	512	512	512	518	525	525	525	525	525	525	525	525	525	
Ranchi (CC)	543	543	543	543	543	533	524	524	524	524	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514	514		
Varanasi (CC)	523	530	530	530	523	523	523	523	523	523	517	517	517	517	517	517	517	517	517	517	517	517	517	517	517	517	517	517	517		

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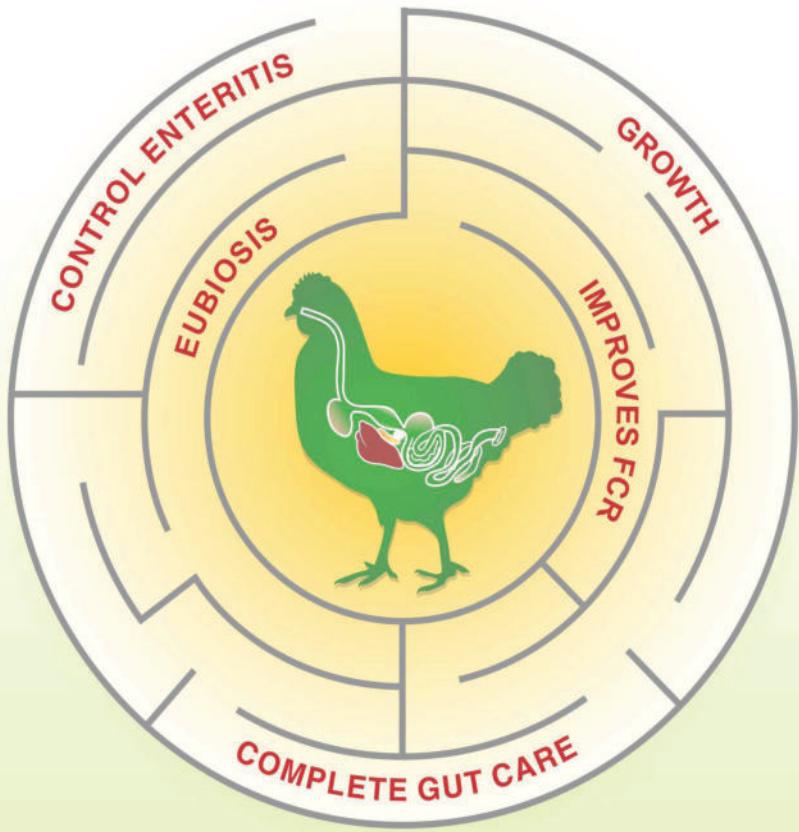
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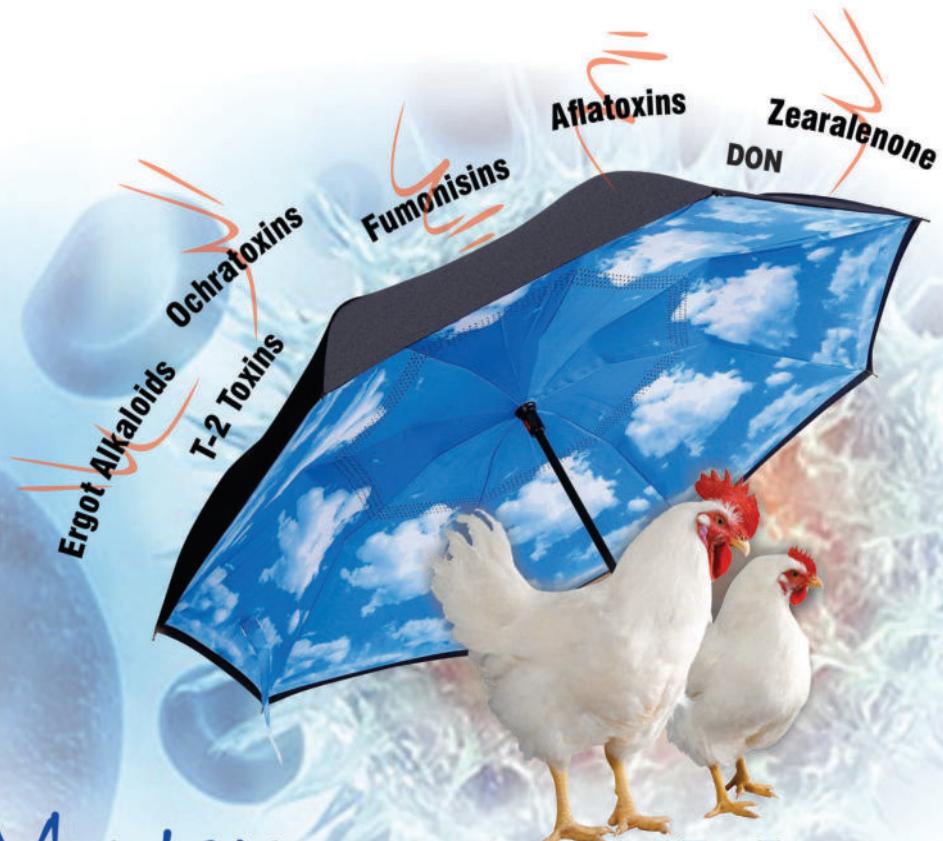
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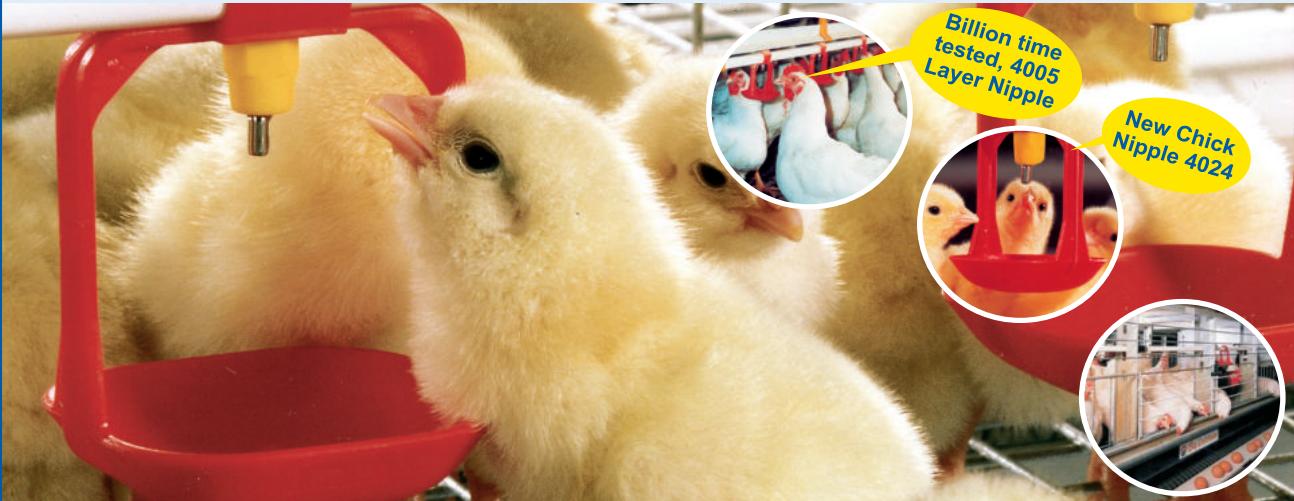
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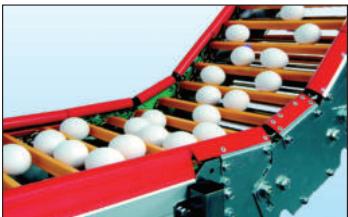
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A prerequisite for optimal performance



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DropStop

Key Benefits

- Regulates gut transit time, reduces gut hypermotility and thereby increases fluid & nutrient absorption
- Potentiates gut innate and mucosal Immunity
- Reduces loose droppings incidence of wet litter and its complications
- Prevents faecal staining of eggs and pasty vents
- Prevents economic losses due to diarrhoea induced decrease in meat and egg production

Feed inclusion rate

1kg per ton of feed .or as advised by the poultry consultant

Presentation

10 kg and 25kg



GustoCheck

PREVENTS DIARRHOEA/ENTERITIS

Prevents loose droppings, pasty vent, diarrhoea and enteritis

Lowers mortality, improve slaughter traits and egg quality, reduces breast and claw lesions

ECONOMIC BENEFIT

BUILDS GUT MICROBIAL ECOSYSTEM

Inhibits pathogens colonization and promotes microbiogenesis

Better consistency of faeces, reduced NH3 conc. in animal houses, better animal welfare and litter quality

ENVIRONMENT PROTECTANT

Feed inclusion rate

500 g per ton of feed or as advised by the poultry consultant

Presentation

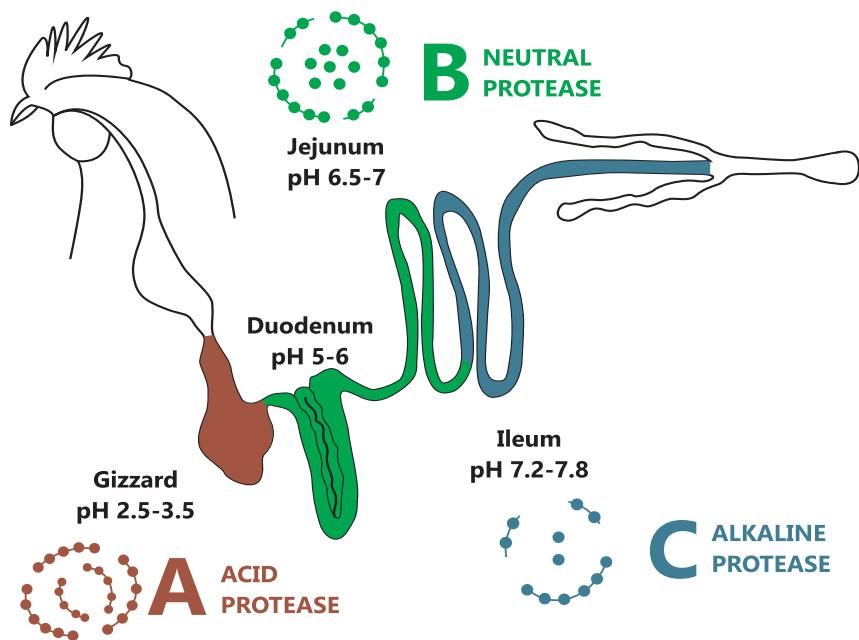
25 kg



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GROWTH & PERFORMANCE

- Higher amino acid availability
- Increases BWG
- Reduces FCR
- Feed cost saving
- Reduction in mortality



GUT HEALTH

- Improves intestinal integrity
- Less proteolytic fermentation in hind gut
- Reduces pathogenic microbial in hind gut and so avoids dybacteriosis (enteritis)



ENVIRONMENT

- Less protein in feed
- Improves shed environment by reduction in nitrogen excretion thereby minimize pollution



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Protease Enzyme in Poultry Feed

Welcome to Nutrinomics...

"Nutrinomics, is the merging of the nutrition and health economics disciplines to assess the impact of nutrition on animal health and disease and to illustrate the health and economic aspects of specific changes in the daily nutrition and nutrition recommendations through the lens of cost effectiveness".

In recent year's protein feed ingredients are consistently increasing in cost and protein in poultry diets has become one of the most expensive nutrients. Urbanization is putting pressure to produce more and high quality protein sources in less space. Neutralizing substandard quality feed ingredients with effective tools has also become a new concern. In parallel people are more concerned on impact of animal agriculture on environmental pollution. Hence research has focused in the direction to enhance nutrients digestibility (Protein, CHO and Phosphorus) and reduce excretion of nutrients through waste generated by livestock production. Use of exogenous enzymes in poultry feed has been ongoing and many commercial enzyme products are presently available to the poultry feed industry. Phytase enzyme is well known to maximum poultry feed producers around the world. Enzymes are added in poultry feed to improve nutrients digestibility, reducing anti-nutritional factors, reducing secondary bacterial proliferation in hind gut as well as for environmental issues.

A Protease also called a peptidase or proteinase is an enzyme that catalyzes proteolysis, the breakdown of proteins into smaller polypeptides or single amino acids. They do this by cleaving the peptide bond's within proteins by hydrolysis, a reaction where water breaks bonds. Proteases are involved in many biological functions, including digestion of ingested proteins, protein catabolism and cell signaling.

Proteases may be classified by the optimal pH in which they are active

- **Acid Proteases**

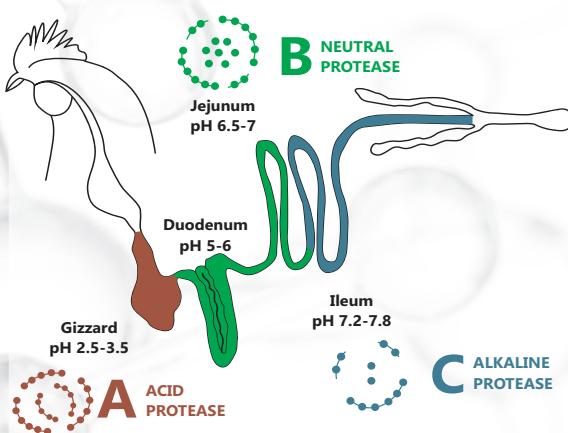
Works in Proventriculus and Gizzard (pH 2.5 - 3.5)

- **Neutral Proteases**

- Works in Duodenum and Jejunum (pH 6.5 - 7)

- **Basic Proteases /Alkaline Proteases**

- Works in Ileum (7.2-7.8)



Use of protease enzyme is capable of improving soybean meal and other protein sources like protein solubility, amino acids digestibility and reducing anti-nutritional factors such as trypsin inhibitors, glycinin, & β conglycinin. Exogenous protease enzyme supplementation in poultry feed may improve efficiency of poultry production by improving low quality feed ingredient's digestion thereby reducing nutrient losses through excreta and lowering feed cost by reducing nutrition level of poultry diet without compromising performance.

Using a Protease enzyme can increase the protein utilization rate and therefore may decrease the dietary protein requirement in broiler chickens.

About BG-PRO

BG-PRO is a zootechnical additives and digestibility enhancer helps in optimizing protein digestion and amino acid utilization. It is an intrinsically heat stable, multipotent protease enzyme feed additive that optimizes digestibility of proteins in poultry feed ingredients.

BG-PRO is a broad-spectrum protease having acid, neutral and alkaline protease activities which works effectively on all the alternative protein raw materials. It is produced by submerged fermentation technology from *Bacillus subtilis* having protease activity NLT 6,00,000 U/G.

Advantages at a glance

BG-PRO because of its broad-spectrum activity has the capacity to maximize protein digestion and amino acid utilization from all the alternative protein sources. This action of BG-PRO has multifold advantages which are associated with the growth, gut health and farm environment.

Growth & Performance

- Higher amino acid availability
- Body weight gain
- FCR
- Feed cost saving
- Reduction in mortality



Gut Health

- Improves intestinal integrity
- Less proteolytic fermentation
- Reduces pathogenic microbial load in hind gut and so avoids dysbacteriosis (enteritis)

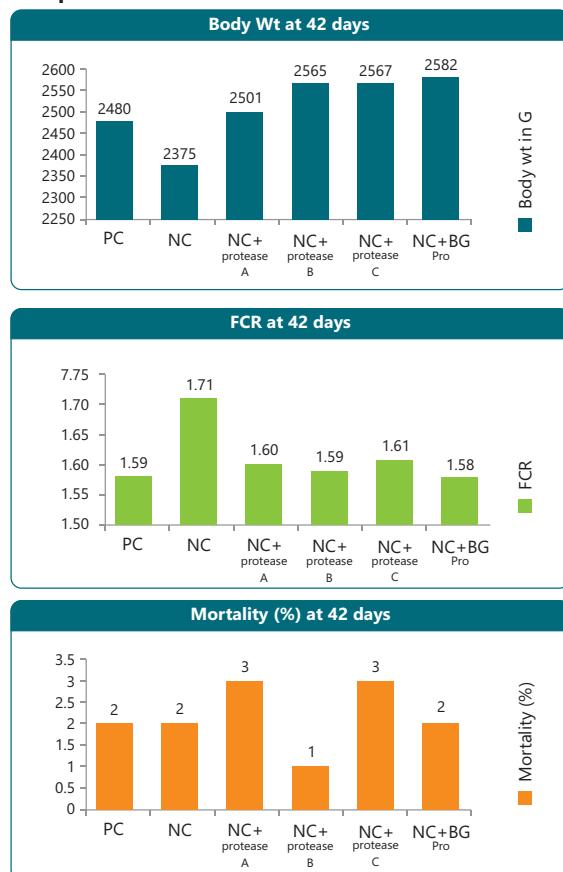


Environment

- Less protein in feed
- Improves shed environment by reduction in nitrogen excretion thereby minimizes pollution



Comparative effect of BG-PRO in broiler diet



Conclusion

Exogenous protease supplementation in protein deficient diets improved the performance parameters such as body weight, FCR and also reduced the mortality percentage.

BG-PRO supplementation can better utilize protein from feed ingredients as compare to commercial protease enzyme products available in industry.

By using BG-PRO one can very reliably formulate poultry diet while reducing 5% of total CP and without compromising bird performance thus safely maximize the feed cost savings.



ABTL

ENZYMES • NUTRITION • TECHNOLOGY

Intelligent Nutrition Comes to the Animal Protein Industry

Novus International, Inc., launches a modern brand focused on more

DES MOINES, IOWA (June 7, 2023) – Novus International, Inc., today announces the beginning of a new area of smarter solutions for farmers around the globe – intelligent nutrition.

The global feed additive company hosted a press conference during the World Pork Expo in Iowa to reveal its comprehensive rebranding initiative. The changes reflect the 32-year-old company's promise to deliver more to its customers and its commitment to providing solutions created through advanced technology, based on global scientific research that goes further to offer unexpected benefits to customers.

"Intelligent nutrition is how we support animal health and performance," says NOVUS SVP and Chief Commercial Officer Ed Galo from the Iowa State Fairgrounds. "Our novel combination of experienced people, insightful perspective, and smarter solutions allows us to put more into everything we create. Because we want to deliver more benefits that deliver more for producers. That's intelligent nutrition."

Under the leadership of President & CEO Dan Meagher, which began in 2020, the company has refocused its attention on where it can best support its customers by addressing challenges and opportunities in production. The NOVUS product portfolio includes solutions to those challenges in the form of amino acids, organic bis-chelated trace minerals, organic acids, enzymes, and essential oils. NOVUS also leads the way in embedding functional ingredients in grain through INTERIUS™ technology.

Galo says today's NOVUS provides solutions and customer-focused services that are recognized for supporting reproductive performance, structural and gut health, and nutrient utilization; optimizing performance and sustainable protein production. But there's always something more.

"We've experienced significant growth since 1991," he

says. "In the last few years, we've honed in on what we can uniquely provide to poultry and livestock producers, nutritionists, feed mills, and distributors around the world – solutions offering something extra. Services and solutions that are made of more."

Made of More™, the company's new slogan, represents the focus of all its future endeavors.

"Just as producers are asked to do more with their poultry and livestock – more growth, more efficiency, more yield - our experience and our solutions offer more to help them reach their production goals," says Abishek Shingote, NOVUS associate VP of Global Strategic Marketing – Technology & Innovation.

NOVUS liquid and dry methionine solutions utilize the HMTBa molecule, which is a precursor to L-methionine. Because of this unique molecule, ALIMET® feed supplement, MHA® feed supplement and MFP® feed supplement are nitrogen-free and have properties of an organic acid benefiting overall gut health. Liquid ALIMET® feed supplement requires virtually no handling thanks to the company's automated inventory system for customers (AIMS). HMTBa is also the backbone for MINTREX® bis-chelated trace minerals, highly bioavailable and absorbable organic zinc, copper, and manganese that allow producers to use lower inclusion of minerals in the ration while seeing the same or improved performance and growth. MINTREX® is also a source of methionine through HMTBa. ACTIVATE® nutritional feed acid is made from a blend of organic acids and HMTBa shown to reduce the survivability of certain pathogens in feed.

"These products provide more than what customers have come to expect from traditional organic trace minerals or organic acid solutions," says Shingote.

Just as NOVUS works to do more for its customers, it's also working to offer more to the industry. Galo says new products – created in-house, through partnerships,

or via mergers and acquisitions – are on the horizon.

"Innovation remains our core priority. As experts in the global food system, we can see where the animal protein industry is heading and this vision directs how we can help meet regional goals from performance and environmental sustainability to return on investment," he says. "We are driven to create new ideas and technologies that improve the health of animals and animal protein production."

Along with the launch at World Pork Expo, the new NOVUS will be on display at the 1st International Livestock, Dairy, Meat Processing and Aquaculture Exposition, June 7-9 in Manila; the 23rd European Symposium on Poultry Nutrition (ESPN), June 21-24 in Italy; and during NOVUS-hosted events throughout the year.

For more information on intelligent nutrition and how NOVUS is made of more, visit <http://novusint.com/MADE-OF-MORE>.

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Recent advances in Nanoparticle vaccines in Poultry

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Nagpur Veterinary College Maharashtra Animal and Fishery Sciences University (MAFSU), Nagpur
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Introduction:

Nanotechnology is a branch of science that deals with understanding and control of matter less than 100 nanometers. It is a very rapidly growing and upcoming field that has developed many nano particles size ranging from 1-100 nm. Currently nanotechnology is used in various fields such as in agriculture, disease control, biomedicine etc. Nanoscience and nanotechnology have been implicated in Veterinary Medicine as a tool for improving animal nutrition, breeding and reproduction (Sagadevan and Periasamy, 2014), for diseases diagnosis, prevention and therapy (Muktar et al., 2015). Nanoparticles has a capacity in penetrating into the cells, tissues, and organs, which brings the property as drug delivering tool. Different medicines or drugs can be attached to the surface of nanoparticle and can be administered into the body for effective action of drug. Not only as drug delivering tool, Nanotechnology has shown its potential in delivering of vaccines.

They are characterized based on features such as morphology, particle size, surface hydrophobicity and surface charge. Features such as particle size, its distribution and morphology are measured using transmission electron microscopy (TEM), atomic force microscopy (AFM) and scanning electron microscopy (SEM). Nanoparticles are prepared by synthetic polymers, polysaccharides, and proteins. Factors to be considered in selection of polymers are nanoparticle size, its toxicity, antigenicity of the final product, surface charge, hydrophobicity, biocompatibility and biodegradability. Nanoparticles are prepared using methods such as emulsion, ionic gelation, and polymerization

In most of the countries, major part of economy depends on animal husbandry. Emerging diseases and its outbreak hamper the economy by causing significant mortality in animal and poultry farms. The overall production also decreases. Therefore, prime importance to be given in the control and prevention of diseases. Vaccines are a critical tool for preventing and controlling poultry diseases. Delivery of vaccine antigens in their native form have several limitations such as poorly immunogenic, easily degradable in the body, immune tolerance and toxic (Fowler et al., 2012; Sridhar et al., 2015). Therefore nanoparticle vaccines are emerging as a promising solution to these challenges. It enhances the immune response and improve the efficacy of the vaccine by response by improving antigen uptake, processing, and presentation, leading to increased antibody and cellular responses.

Mechanism of Action:

The mode of action of nanoparticles depends mainly on factor such as particle size wherein size lesser than 300 nm spread in the blood, but particles smaller than 100 nm reach

tissues (Hett, 2004). Nanoparticle vaccines work by delivering antigens to the immune system in a highly efficient and targeted manner. The nanoparticles themselves are designed to mimic pathogens and are coated with antigens that are recognized by the immune system. When the nanoparticles are injected into the bird, they are taken up by immune cells called dendritic cells. These cells process the antigens and present them to other immune cells, including T cells and B cells. This triggers an immune response that results in the production of antibodies against the targeted pathogen.

Application of nanoparticles in poultry vaccines:

Nanoparticles using nanotechnology are used in vaccine preparation and control of disease in poultry-

- In Avian influenza virus (AIV) infection, H5 mosaic (H5M) vaccine antigen conjugated with polyanhydride nanoparticles (PAN) shown both humoral and cellular immunity in specific pathogen free (SPF) and commercial chicks.
- In Newcastle disease (ND) infection, polyrhodanine nanoparticles shown to have anti-NDV activity in ovo and is non-toxic. Therefore it could be used in control of NDV in poultry. Also microalgae mediated silver nanoparticles (AgNPs) has shown in vitro antiviral activity against NDV infection in Huh7 cells. AgNPs interacts with virus envelope glycoprotein thereby inhibiting it. Intranasal vaccination of chickens with Ag@ SiO₂ hollow Nanoparticles (pFDNA-Ag@SiO₂-NPs) elicits higher anti-NDV IgG levels, high serum IgA levels, lymphocyte proliferation and promotes IL-2, IL-4, and IFN- γ expression. Complete protection is also noticed when live NDV vaccine (LaSota strain) encapsulated with chitosan nanoparticles.
- In Infectious bursal disease (IBD) infection, injection of vaccine conjugated with a PLGA nanoparticle has shown significant increase in both humoral and cellular immune responses in broiler chickens. One more study recorded that grapheme oxide (GO) sheets and silver nanoparticle anchored grapheme oxide (GO-Ag) sheets, have antiviral effects against a non-enveloped IBDV. Another study shown that AgNPs at the dose 20ppm has preventive and therapeutic effect on IBDV in vivo.
- For *Salmonella* infection, chitosan-based and poly (methyl vinyl ether-co-maleic anhydride) (PVM/MA)-based polymeric nanoparticle vaccine used. This vaccine is capable of eliciting a substantial and antigen-specific cellular and humoral immune response in broilers and layers.
- In *Campylobacter jejuni* infection, use of Chitosan NPs

encapsulated with recombinant hemolysin co-regulated protein increased secretory IgA and IgY antibody, enhanced cytokine gene expression and enhanced bacterial clearance from caecum.

- Chitosan nanoparticle vaccine also used for Avian pathogenic Escherichia coli, Avian influenza virus, Avian infectious bronchitis virus and Newcastle disease virus which results in induction of robust secretory and systemic antibodies or cell mediated immune response which provides protection against infections.
- Studies are recorded wherein aluminum-magnesium silicate (AMS) nanoparticles have high in vitro antiviral activity against AIV, NDV, egg drop syndrome 76 virus, IBDV and Fowl pox virus.

Conclusion:

Nanoparticle vaccines are an emerging technology with the potential to revolutionize poultry vaccination. Nanoparticle vaccines are promising in preventing diseases of poultry. They offer several advantages over traditional vaccines, including improved efficacy, targeted delivery, and reduced side effects.

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New IEC Egg Innovation Award will recognise exceptional efforts to add value to eggs

The International Egg Commission (IEC) has launched the Vision 365 Egg Innovation Award to recognise organisations who push the boundaries to create innovative food products that add value to eggs.

Entries for the new international award are now open to any food product where the main focus is natural hen eggs, and the introduction of new ideas or alternative interpretation of an original product is demonstrated.

Launching the award during the IEC Business Conference in Barcelona, Vision 365 Chairman, Suresh Chitturi, said: "We have a fantastic product which is both nutritious and sustainable to produce, and Vision 365 was established to increase egg consumption globally. One way we can do this is through the development of innovative products which encourage consumers to eat eggs at alternative meal occasions."

"I am delighted that the IEC is launching this brand-new award to recognise innovative food products which add value to eggs and support increased egg consumption. This is a fantastic opportunity to raise the profile of your business and promote your product. I look forward to showcasing products which are leading change within our industry."

The award will be presented during this year's IEC Global Leadership Conference in Lake Louise on 24-28 September. To enter, the IEC are asking organisations to share a link to their product website for the judge's consideration, by Friday 11 August. More information can be found on the IEC website at bit.ly/3njVe54.

Editor's notes

Established in 1964, the International Egg Commission (IEC) is a not-for-profit organisation that represents the egg industry internationally; it has members in around 80 different countries. Its members include national egg associations, egg farmers, egg graders and processors around the world. Part of the role of the IEC is to provide information to assist with national and international decisions and policy making, it does this through its membership, its publications, and liaison with other international organisations, including; World Organisation for Animal Health (WOAH), World Health Organization (WHO), Consumer Goods Forum (CGF), and the United Nations' Food and Agriculture Organization (FAO).

Vision 365 is a 10-year plan launched by the IEC that intends to develop the nutritional reputation of the egg on a global scale in order to unlock its full potential. The project will facilitate a vibrant and growing movement with the new award anticipated to be a key component for its success.

Each year, the IEC celebrates the outstanding achievements of organisations and individuals from within the egg industry with various, prestigious awards, including the Denis Wellstead Award for 'International Egg Person of the Year', the Clive Frampton Egg Products Company of the Year Award and the Golden Egg Award for Marketing Excellence.

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W-80 INDIA IS NOW RECOVERING FROM DISEASES FASTER THAN THE OTHER BREEDS

Disease Recovery at a Farm in Telangana

Age of the Flock	2023	Week. Avg. H.D%		Cum. Mortality%		Cum. H.H.Eggs	
		W-80 India	Other Breed	W-80 India	Other Breed	W-80 India	Other Breed
22	10-Feb	88.21*	69.00*	0.29	0.42	16.67	18.80
23	17-Feb	74.68	62.00	0.41	0.62	21.88	23.12
24	24-Feb	68.70	69.26	0.53	0.79	26.67	27.94
25	03-Mar	76.66	75.16	0.64	0.94	32.01	33.16
26	10-Mar	83.22	78.75	0.77	1.08	37.80	38.62
27	17-Mar	86.70	80.76	0.90	1.24	43.81	44.20
28	24-Mar	88.43	82.03	1.04	1.39	49.95	49.87
29	31-Mar	89.50	83.80	1.16	1.54	56.15	55.66
30	07-Apr	90.23	85.00	1.27	1.67	62.39	61.52
31	14-Apr	90.34	86.17	1.40	1.82	68.64	67.45
32	21-Apr	90.12	86.49	1.54	1.96	74.86	73.39
33	28-Apr	89.88	86.60	1.68	2.10	81.05	79.33
34	05-May	90.46	87.38	1.78	2.22	87.28	85.32
35	12-May	90.78	87.65	1.90	2.35	93.52	91.30
36	19-May	90.79	86.70	2.04	2.48	99.75	97.25
37	26-May	90.14	85.68	2.16	2.61	105.93	103.10
38	02-Jun	90.13	87.36	2.28	2.73	112.11	109.05
39	09-Jun	90.02	87.14	2.40	2.85	118.26	114.99

*Impacted by VVND

Summer Ready Bird as seen by Lesser Mortality in Peak Summer
(April - May 2023) in South and West India compared to competitor Birds

Farm Name	Area	Flock Age	Avg Weekly Mortality % in 8 Weeks	Farm Name	Area	Flock Age	Avg Weekly Mortality % in 8 Weeks
SMN Poultry Farm	Namakkal	22	0.19	Sneha P.F	Gadwal	45	0.22
Om Sri Ganesh Agri Products	West Godavari	22	0.09	Bhadradri Rama P.F	West Godavari	45	0.17
Rajender Agro P.F	Vizag	22	0.09	Angammal P.F	Namakkal	47	0.13
Vaibhav P.F	Sangli	27	0.10	G D Poultry Farm	Namakkal	47	0.25
JSK Poultry Farm	Namakkal	28	0.18	Sarang P.F	Sangli	47	0.20
Sri Krishna P.F	East Godavari	29	0.21	Balakrishna P.F	Medchal	48	0.16
Vigenswara P.F	East Godavari	29	0.21	Sri Raghvendra P.F	Vizag	48	0.27
K L Poultry Farm	Namakkal	30	0.10	Jahnavi P.F	Vijayanagaram	50	0.14
Jahnavi P.F	Vijayanagaram	32	0.14	Divya P.F	Namakkal	51	0.18
Mahida P.F	Surat	33	0.10	Vijaynagar Egg farm	Ballari	60	0.23
Uddanam Agro Feed & Farms	Srikakulam	36	0.20	Uddanam Agro Feed & Farms	Srikakulam	65	0.18
Geetha P.F	Namakkal	38	0.19	JSR Poultry Farm	Yaddadri	67	0.23
Nanda P.F	Challakere	39	0.14	Vijay P.F	Amravati	70	0.14
Divya P.F	Namakkal	40	0.15	Vijaynagar Egg Farm	Ballari	71	0.16
Duraisamy P.F	Namakkal	40	0.25	Vijaynagar Egg Farm	Ballari	75	0.25
Tapaswini P.Foods	Vizag	44	0.23	Eggceptional P.F	Gajwel	91	0.15

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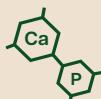
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Feeding, Nutrition and Disease Management of Ducks

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Ducks are voracious eaters and foragers. Besides compounded feeds, snails, fingerlings, earth worm, insects and vegetation form part of life when reared in pond which decrease feed cost. Under intensive system of rearing; dry mash, wet mash, pellets or crumps may be given free choice. Wet mash given 5 times a day during brooding period; then 3-4 times and adult 2 times. Feed should be given sufficient for eating upto 10 minute only. Left over feed should be removed after each feeding. Ducks have difficulty in swallowing dry mash and also waste feed if given in dry form.

Pellet feeds are utilized more efficiently than mash, also reduction in wastage and easy feed consumption.

Starter (0-2 week) are fed with pellet of 3.18mm.

Grower (2-7 week) are fed with pellet of 4.76mm.

Young ducklings fed with pellet size 3-5 mm.

Advantage of Pellet feeding:

- i) Saving of 15-20% of feed.
- ii) Decrease labour
- iii) Decrease feed wastage
- i) Keep waterers and water channel clean
- ii) Decrease mould growth
- iii) Decrease fly problem
- iv) An adult duck eat 170-230 gm feed /day.
- v) Annual feed consumption is 50-60kg
- vi) Feed efficiency 3 in layer duck and 2.25-2.5 in breeder duck

Nutritional requirements:

Constituent	Starter	Grower		Layer
	(0-2 weeks)	(3-8 weeks)	(9-20 weeks)	(>20 weeks)
M.E. (kcal/kg)	2750	2750	2700	2650
Crude protein %	20	18	15	18
Calcium %	0.8	0.8	0.8	2.5
Phosphorus %	0.45	0.45	0.45	0.45
Manganese (mg/kg)	100	100	100	100
Niacin (mg/kg)	60	60	60	60
Vitamin A	4000	4000	4000	4000
Vitamin D	600	600	600	1000

Niacin is very important for ducks, whose deficiency caused bowed legs and leg weakness because tryptophan is not converted to niacin in ducks. Duck is susceptible to Aflatoxin (by aspergillus). Ducks can tolerate to aflatoxin up to 30 ppb or 0.03 ppm as against 0.2 ppm (200 ppb) in chicken. So particular care should be taken that not to include mouldy grain and cake especially Ground Nut Cake in ration.

Ingredient composition (%) of Duck ration:

Sr. No.	Ingredient	Starter	Grower	Layer	Layer
		(0-8 weeks)	(9-20 weeks)	(20 & above)	(20 & above)
1	Yellow Maize	40	48	42	42
2	Rice Polish	20	20	20	20
3	Wheat bran	-	6	-	-
4	GOC	5	5	7	7
5	Soyabean meal	17	8	14	14
6	Coconut cake	6	5	-	-
7	Fish	10	6	10	10
8	Mineral Mixture	1.75	1.75	1.75	1.75
9	Salt	0.25	0.25	0.25	0.25

For every 100 kg add

Indomix (A,B2,D3)- 30 gm/100kg

Nicotinic acid- 5 gm/100kg

Broiler Duck:

Sr. No.	Ingredient	Starter	Grower
		(0-8 weeks)	(9-20 weeks)
1	Yellow Maize	45	56.5
2	Rice Polish	8.5	11
3	Soyabean meal	33.5	23
4	GOC	2.75	-
5	Fish	8	7
6	Dicalcium phosphate	0.75	1
7	Mineral Mixture	1.25	1.25
8	Salt	0.25	0.25

For every 100 kg add

Indomix (A,B2,D3)- 15 gm/100kg

Indomix B.E.- 15 gm/100kg

Nicotinic acid- 5 gm/100kg

Chemical composition:

Nutrients	Duck Egg	Duck meat
Moisture %	70.5	43.7
C. P. %	13.3	19.9
Fat %	14.5	35.8
CHO %	0.7	0.2
Ash %	1	0.4
M.E. (Kcal/kg)	191	366

Processing of Duck:

More or less similar to chicken. Stawing: 6-8 hours, killing by dislock (Cut) of neck or sticking the brain via roof of pharynx or severing jugular vein. Feather removed-wet/dry plucking of wax finishing.

Wet Plucking:

Hot water at 60°C, dipped birds. After plucking, remove down by hand, picking, singeing or by dipping in hot wax. In wet plucking: feathers fetch low valuable.

Dry plucking:

Feathers fetch good price. Plucked by dry plucking machine and done immediately after killing. Tail and large wing feather are taken out by hand and kept separately.

Wax finishing:

Following dry/wet plucking down feather are removed by waxing. Hot paraffin wax is held in thermostatically controlled tanks at a temperature of 60°C. After 5 Seconds, carcass removed and either sprays with cold water or immersed in cold water tank. Hardened wax removed by hand or using rubber finger. Plucking machine which can be used again by heating at 90°C and straining to remove feather. Evisceration similar to chicken difficult to remove inner lining of gizzard which is out open and for easy removal, it is dipped in hot water vs. chicken 2-3%. Feathers are used for pillows, tilt, cushion, shuttle, cock, bed, decorative items for which they are leached and dyed (5 duck-½ kg feather). Feather are also used for production of feather meal with >5-15% protein. This protein has essential amino acids, Cystine which is rich in sulphur.

Duck Manure Composition:

Moisture	95%
Nitrogen	0.5-0.6%
Phosphorus	0.5%
Potassium	0.1%

Dressed weight:

Dressed weight of duck	82%
Dressed weight of geese	90%
Dressed weight of turkey	90%
Dressed weight of Broiler	87%

Ready to cook yield:

Duck	73%
Geese	72%
Turkey	78%
Broiler	73-75%

Diseases of Duck:

► Duck Plague/ Duck Virus enteritis:

It caused by Herpes virus. It is an acute fetal disease affecting ducks as well as geese and other aquatic birds. Duck of all age are susceptible. Wild birds help in spread of disease. Recovered birds are carrier course of disease is 3-6 weeks.

Symptoms:

First sign is presence of dead bird in litter and water. There is watery greenish yellow diarrhea, nasal discharge, ruffled feathers and wing droppings. A dirty appearance of head due to increase secretion from eye and nostril. A characteristic features of the disease is swollen and protruding penis in male and severe production drop in female. Postmortem examination shows multiple or generalized hemorrhage in body organs.

Treatment:

There is no treatment. Only vaccination is the solution. Strict sanitation and rearing practice should be followed. Duck without swimming in water prevent disease spread. Duck plague vaccine is available. Vaccination done 3 times: 4th weeks, 8th weeks and 24th weeks. Thereafter annual vaccination is done.

► Afla toxicosis:

It caused by ingestion of aflatoxin. Toxin made by Aspergillus flavus from infected feed ingredients. Hot and humid condition favors toxin production. Ducks of all age are susceptible. Symptoms are more pronounced in ducklings. Pelleting was destroying toxin in feed.

Symptoms: Decrease in feed intake, poor growth, falling of feather, lameness, purple discoloration of feet and legs. Develop ataxia followed by convulsion and death. Mortality occurs 95-98% (death within 48hrs).

Prevention: Regular monitoring of increase risk feed like Maize, Oil cake for their moisture content. Periodical cleaning of waterers and feeders should be done. Avoid long time storage of

feed and compounded feed. Remove contaminated feed from feed store. Improve environmental management and nutritional management. Binders (UTPP) can be added especially during monsoon. Uses of toxin binder are useful for inactivation like CuSO₄, Gentian violet, Propionica. Use of dietary additive like water soluble vitamin, Vitamin E, BHA, BHT etc. will interaction with toxin during metabolic process of feed will decrease toxic.

► Botulism/ Limber Neck:

It caused by toxin liberated by Clostridium botulism. It is common in duck due to eating of decayed plant and animal waste. Affected ducks loose the control of neck muscle and are completely paralyzed just prior to death. Removal of dead birds and decayed vegetable in the premises will prevent disease.

No treatment. Epson salt in water for purgation should be used.

► Salmonellosis: (Paratyphoid infection)

Bacterial disease caused by Salmonella group except Salmonella Pullorum. Organisms are Salmonella anata and Salmonella typhi murium and Salmonella enteritis. Infection spread through ovary, through incubator, direct contact, infected feed, adult survivor acts as a carriers.

Symptoms: Decreased hatchability of infected eggs due to dead embryos.

In young duckling symptoms: dropping of wings, ruffled feathers, anorexia, increased thirst and watery diarrhea. Urate deposits in vent and feathers.

Prevention and control: Egg should be disinfected with formalin solution. Pelleting destroys salmonella infection. Furazolidone is to be used for treatment.

► Aspergillosis:

Respiratory disease caused by Aspergillus fumigatus. Ducklings more than 2 weeks are more susceptible.

Symptoms:

Labored breathing, appetite loss, emaciation. Birds may die after onset of symptoms.

No treatment to prevent disease. Hatching eggs should be properly cleaned and disinfected. Litter and feed should be dry and free from mould. Moldy litter should be removed.

☛ Pasteurellosis/ Duck cholera:

It caused by *Pasteurella multocida* and affect birds which are more than 4 weeks age

Symptoms:

Per acute form: death without symptoms. Oozing of blood from nostril and mouth may be seen. Hemorrhage in gastro-intestinal tract can be seen.

Acute form: the bird show loss of appetite, increased thirst, ruffled feathers, mucus discharge from mouth, increased body temperature, diarrhea with mucoid droppings followed by light greenish

diarrhea.

Chronic form: Emaciation and swelling of neck joint

Prevention and control: Antibiotic effective. In endemic areas, birds should be vaccinated against disease

1st at 8th week and 2nd at 16 week and repeated every 6 month interval.

☛ Duck Influenza:

It is caused by a different serotype of avian influenza virus.

Symptoms: Inflammation of sinus, sinus are filled with exudates, nasal discharge, dirty feathers on both sides of head, sneezing difficulty in breathing, coarse respiratory sound, increase mortality,

No vaccination. Only antibiotics are used to prevent secondary infection. Overcrowding, poor ventilation, poor management condition needs to be corrected.

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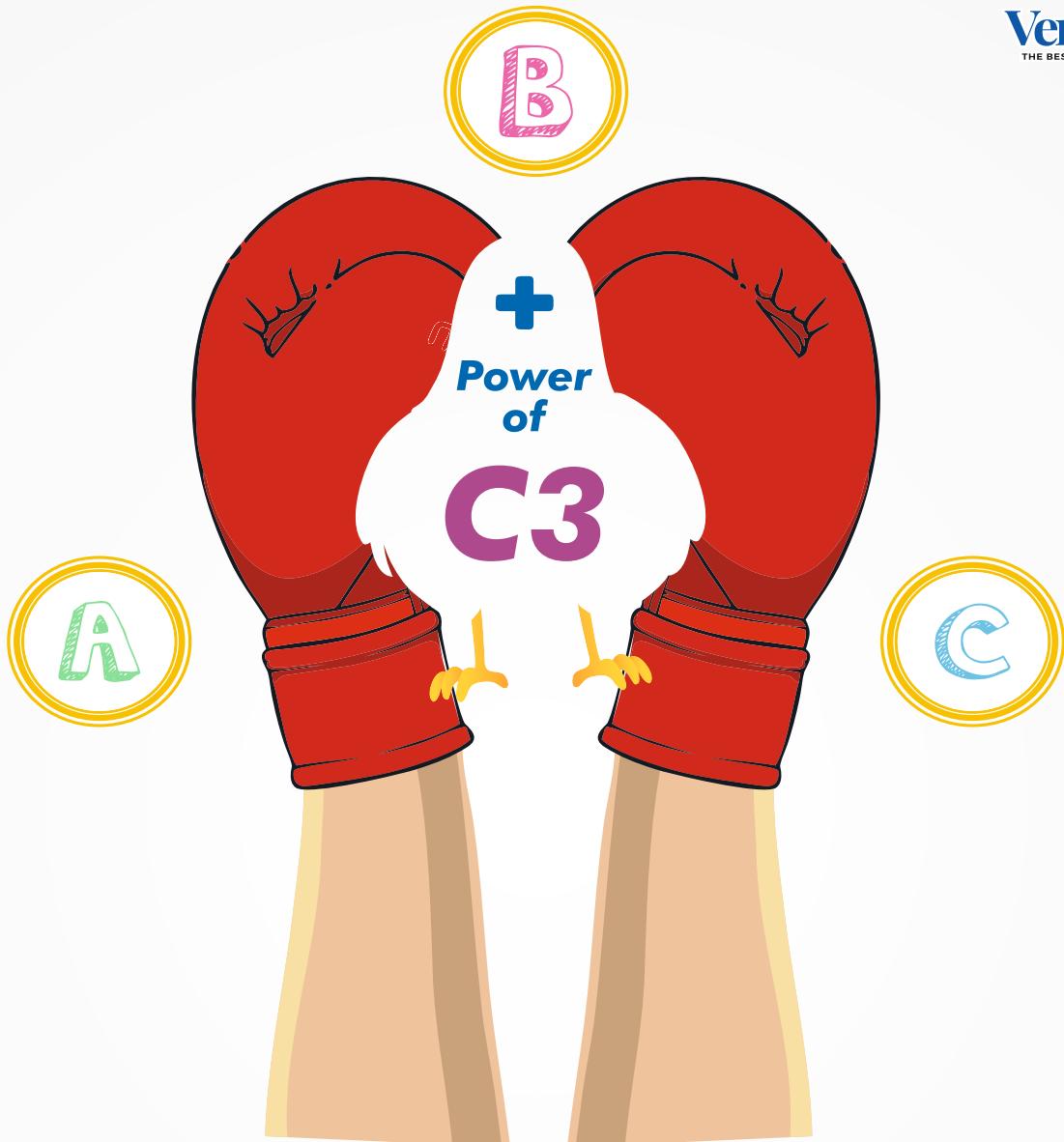
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