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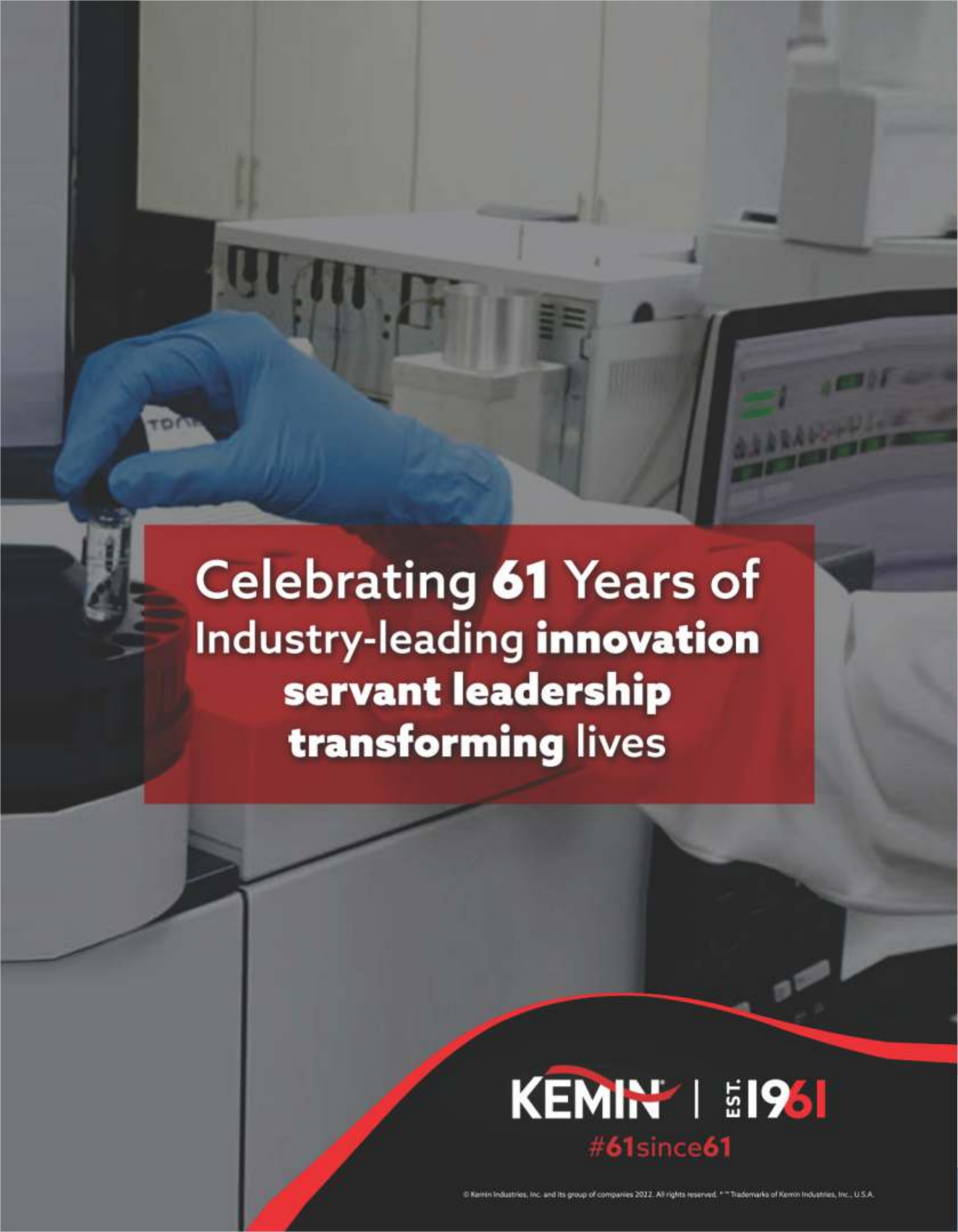

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Editorial

From the Editor's Desk

Simple and Effective Tips to Keep Your Chicks Warm and Healthy

Winter has a significant impact on poultry production by lowering the ambient temperature. With a drop in the mercury level and a change in the weather, poultry farmers may face some challenges such as low environmental temperature, poor ventilation, and decreased photoperiod; these seasonal fluctuations may directly or indirectly influence egg and meat production.

Chickens are unable to maintain body temperature at a young age, and while their tolerance to cold increases with age, they cannot perform well when the ambient temperature falls below 20 degrees Celsius, causing stress and a drop in productivity.

The wet litter and humid conditions are ideal for gut pathogens such as Coccidiosis and Clostridium. Because stressed and immunosuppressed birds are an easy target for these gut pathogens, very high performance losses are observed due to poor gut health.

Poultry agriculturists can implement the following measures to increase poultry production during the winter:

- Orientation of poultry house
- Ventilation management
- Poultry litter management
- Poultry feeding management
- Poultry water management

To overcome economic losses, farmers must be prepared to face these challenges by implementing some winter stress-relieving practises. Chicks require adequate, balanced, and healthy food. It is self-evident that you must provide adequate food for chicks because they require extra energy to maintain their body temperature during the winter. Because low temperatures increase food consumption and oxygen requirements, provide birds with an unlimited supply of feed to help them gain weight and lay eggs quickly.

The main aim of the poultry farmer is to control the environment to the bird's specification as much as possible. Decrease in egg production leads to economic losses so sixteen or more hours of daylight is essential to maintain their potential.

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Welfare Concerns of Poultry Farming

Utsav Surati[1],[2]*, Dipankar Paul[1], Vikas Diwakar[1], Surajit Das[1], Ymberzal Koul[1],[2], Gaurav Patel[1],[2], Anmol[1],[2]

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Abstract

Animal welfare refers to an animal's capacity to adapt to its environment. As the population of the world increases, there is a demand for food, especially meat. The production of poultry has significantly improved over the past few decades thanks to meticulous monitoring of a number of factors, including management and nutrition (health rearing systems, and environment). The current trend in animal farming is toward better welfare conditions. Definitions, measures, interpretations, and perceptions related to farm animal welfare or well-being, however, continue to be contentious problems. This is an overview of the problems with poultry welfare, from its definition to different industries and environments.

Introduction

India is the world's 3rd largest egg producer and the 5th largest producer of poultry meat. The Indian poultry market, worth INR 1,750 billion in 2018 and further projected to reach INR 4,340 billion by 2024, growing at a CAGR of 16.2% during 2019-24. India exported 5, 44,985.06 MT of poultry products to the world, worth Rs. 687.31 Crores during the year 2018-19. Recently, the business of raising poultry for meat or eggs is becoming more and more concerned about animal welfare. Consumers who want increased welfare standards, supermarkets and retailers that often adapt to consumer trends, and animal activists with personal agendas are all contributing factors to this. Regardless of the reasons, animal welfare should be prioritized on an equal level with all other aspects of poultry production. Despite the fact that chickens are significantly different from people, it is believed that they can experience emotions like pain or anger. In order to ensure the well-being of such a huge number of animals, ethical consideration must be put into the raising of poultry.

Animal Welfare

In the Oxford English Dictionary, welfare is linked to "well-being; happiness; and thriving or successful progress in life". The World Organisation for Animal Health (OIE) definition of animal welfare refers to how well an animal is able to cope with the conditions in which it lives. Animals must also be able to display behavior that is important in a captivity environment and must not experience unpleasant mental states like pain, fear, or distress.

Since 1965, when the Brambell Committee proposed that farm animals should have five fundamental "freedoms" of movement, including the freedom to stretch and the freedom to turn around, the welfare of farm animals has been regarded as a formal discipline in the United Kingdom. The United Kingdom's Farm Animal Welfare Council (FAWC, 1979)revised these Five Freedoms in 1979 and proposed Five Freedoms that all farm animals should have:

I Freedom from hunger and thirst

ii Freedom from discomfort

iii Freedom from pain, injury and disease

iv Freedom to express normal behavior

v Freedom from fear and distress

Measures based on resources and animals

To evaluate animal wellbeing, farms and other livestock businesses can utilize the measures. Early evaluations of animals on farms relied on determining whether essential resources were present; these assessments are known as resource-based measures. However, the mere existence of a resource does not imply that it is being utilized efficiently. Consequently, there has recently been a movement toward direct animal observation and measurement utilizing animal-based outcome measures.

The majority of the suggested measures of the Welfare Quality Project are outcome measures based on animals that might be used to evaluate each of the 12 welfare criteria for poultry. Therefore, the lack of hunger can be evaluated by

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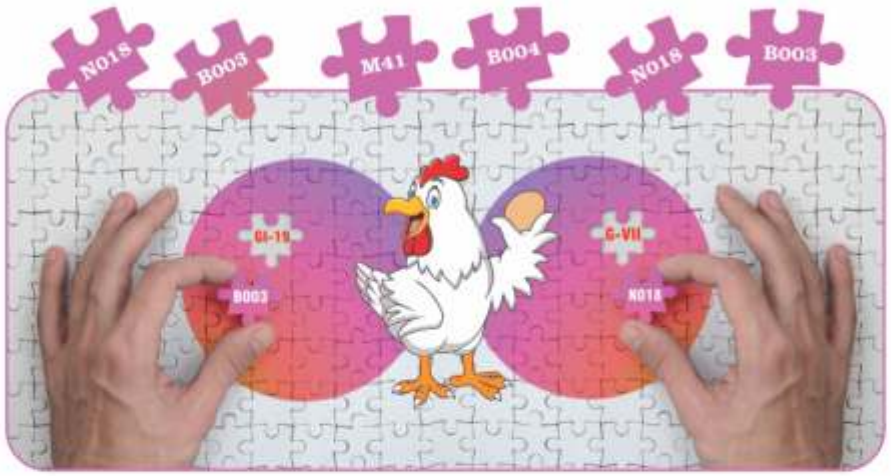

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Table 1: As outlined by Welfare Quality, welfare principles and criteria	
Welfare principles	**Welfare criteria**
Good feeding	1. Absence of prolonged hunger 2. Absence of prolonged thirst
Good housing	3. Comfort around resting 4. Thermal comfort 5. Ease of movement
Good health	6. Absence of injuries 7. Absence of disease 8. Absence of pain induced by management procedures
Appropriate behaviour	9. Expression of social behaviours 10. Expression of other behaviours 11. Good human-animal relationship 12. Positive emotional state

grading emaciation on a scale and the degree of thermal comfort by observing whether birds are panting or huddling. Thus, measures for each criterion can be given different weights, with higher weights given to criteria that are thought to be especially important.

Scientific assessment of welfare

It is important that the measures used on farms to assess animal welfare are more scientific in nature, to ensure that they really do measure factors associated with quality of life.The scientific assessment of poultry welfare usually depends onmeasuring a range of Physiological, Physiological, and Clinical indicators

Early studies examined the environmental choices of chickens for food types, laying, foraging, exploratory materials, heat and lighting, and social conditions. Important new scientific research is examining how welfare indicators and the environmental choices of chickens interrelate

Interactions between Welfare and Productivity

It is a common misconception that good output would automatically result in good well-being, but the connection between the two is more complex than this. The welfare and production are positively correlated in the next two situations:

I In some backyard, village environments, chickens may be able to express normal behavior, but their overall welfare may be poor if they are affected by disease, parasitism or malnutrition. Addressing these welfare issues will also result in increased productivity.

ii In many cases, acute or chronically stressful events will reduce productivity. For example, moving hens from pens to cages produces a marked short-term decrease in egg production. Similarly, chronic stress can impair immune function and lead to increased disease and mortality, and reduced production.

However, in the next two examples, welfare and production are in conflict:

I Intense genetic selection for production traits can have adverse consequences on other aspects of bird health. For example, laying hens selected for high egg production have increased skeletal and broiler chickens selected for very high growth rates have problems with leg health and lameness

ii Restricting the quantity of feed fed to broiler-breeding flocks/birds is a normal management method because egg production and hatchability are poor if female breeding birds are fed ad libitum.

Major Welfare issues

- **Welfare issues in a village environment**

Birds in rural areas are typically native breeds, which can typically adapt to their surroundings better than breeds that have undergone considerable genetic selection for product features.

Issues:

- Disease transmission is high in backyard poultry systems, often resulting in low productivity and high mortality
- Unavailability of appropriate nutrition.
- Lack of access to a source of clean and cool water.
- Unavailability of proper shelter
- No temperature maintenance

Most of these welfare issues can be addressed by improved veterinary care and nutrition and the provision of simple facilities such as clean drinking water and shade.

- **Welfare issues of broilers in commercial production**

The major welfare issues linked with broilers are Leg health problems, lameness, metabolic disorders and hunger

- **Welfare issues of laying hens in commercial production**

The major welfare issues linked with layers are bone fracture, cage layer fatigue, injurious pecking, osteoporosis, behavioral deprivation resulting from housing in cage systems and unequal access to facilities for birds housed in non-cage systems

- **Welfare issues during transport and slaughter**

High levels of stress resulting from improper handling, as well as discomfort and stress if birds are not adequately stunned before slaughter, are the main welfare issues that arise during transport and slaughter.

Advantages of implementing poultry welfare

i **Acceptance by customers**

People all across the world are becoming more and more conscious of the significance of farm animals' welfare. Customers are curious about where their poultry products are produced.

ii Improved market opportunities

Currently, the World Trade Organization (WTO) adheres to a free-trade policy and forbids nations from imposing trade restrictions due to different standards for animal welfare. The WTO multilateral trade negotiations are being pushed by the European Union (EU) to include welfare. In such a case, imports would have to comply with fundamental EU requirements in order to be sold here.

iii Employment generation

Enhancements in animal welfare can provide employment in countries where it is difficult to find job. Women and children raise chickens in many developing nations, including India. Women can increase their productivity and potentially help to reduce poverty by learning how to raise chicken in accordance with the highest welfare standards.

Conclusion

Welfare in the animal production system is becoming important day by day as the consumers as well as the producers are becoming aware. Future demands are in favour of improved welfare measures for poultry meat production as a result of the greater adoption of these practices in the production system. Ultimately, this will create new markets for the producers in both imports and exports, as well as new employment prospects.

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Using Enzymes in Poultry Feed to Increase Profits

Dr V. Rajendra Prasad
Poultry Consultant

1. Poultry industry is becoming increasingly receptive to the use of exogenous enzymes supplementation.

a) Consistent increase in the price of feed ingredients has been a major constraint in most of the developing countries like India.

b) In an environment of high-cost corn and Soya diets, many feed producers are choosing to substitute corn and Soya with other crops that have less nutritive value.

c) Enzyme supplementation to the poultry rations has a positive effect on feeds digestibility and leads to better productivity and performance.

d) Enzymatic supplementation can improve the nutritive value of cereals containing high levels of soluble non-starch polysaccharides.

e) Several studies have shown that enzymes in poultry can enhance the animal's performance to a level compared with that obtained in corn-Soya based diets.

2. Phytase, Xylanase, Carbohydrases and Protease are the major enzymes being used in animal feed :

a) to improve digestion of phytate phosphorus,

b) non-starch polysaccharide

c) and protein respectively.

3. In the past few years, the market for poultry enzymes has changed significantly with phytase, followed by xylanases and others.

a) Other enzymes like amylases, proteases and mannanases are being used by few poultry producers.

4. A combination of different enzymes are being used by Poultry producers.

a) Commercially, these supplements are characterized by being a cocktail with different enzymes with different specificities.

b) Since energy is the most expensive nutrient in the diet, the combination of amylase, xylanase, protease and Mannanase enzymes to poultry diets provides producers the opportunity to reduce feed costs.

c) Typically, such enzyme supplementation costs around Rs 150 to 250 per ton of feed.

5. Enzymes are derived from microorganisms :

a) like bacteria (eg. Bacillus subtilis, E. coli and B. stearothermophils),

b) fungi (Triochoderma, Asperigillus)

c) and yeast (S. cerevisiae);

d) these are carefully selected to substrate specificity and cultured under controlled conditions.

6. Application of enzymes in poultry feed:

a) Enzymes can be used in following ways in poultry feed:

b) Use of matrix values to reduce the costly raw material,

c) the matrix values quantify the extent to which nutrients are released by using the enzyme.

d) Using matrix values one can reformulate the feed and reduce the quantity of costly ingredients for energy, protein and minerals and reduce feed cost from Rs 1000 to 1200 for ton of feed..

7. Addition of enzyme to the standard feed formulation achieves :

a) improved bird performance feed conversion ratio,

b) egg production in layers .

8. Enzyme usage gets better return on investment(ROI) through improved performance ie.

a) reduction in FCR,

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c) reduction in days to market in Broilers.

9. Least cost feed formulation without hampering the performance is a major goal for poultry feed millers ,integrators and Poultry farmers.

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Management of Winter Stress in Poultry Farming

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In India, every region has different climatic challenges and variable climate extremes and thus management practices differ between different parts of country. Winter is one of the seasons which present very harsh temperature extremes and maintaining livability and production becomes very difficult without taking extra measures. Management in winter is very difficult and often described as double edges sword, as a very perfect balance is required between climate management and ventilation management. Similarly, a very careful decision making is required to reduce cost of production and to provide healthy environment at the same time. It requires ample of experience to understand the economic feasibility of cost involving management practices.

Poultry rearing is an art as well as a science and management plays most crucial role in deciding profitability of this business. It has been observed in past several years that high market rates of broiler meat & eggs are observed only in those times when rearing is very difficult due to winter harsh climate and thus, demand is more than supply. Therefore, it is very important to understand and implement the best management practices during winter.

During winter when the temperature goes down beyond 55°F, poultry has to confront several issues like decrease in egg production, reduction in water consumption, diminution in fruitfulness and hatchability, poor FCR in the broiler, decreased weight gain, reduction in fertility, increase in bird mortality and so forth. In winter, there is a drop in mercury level and alteration in weather from warm to cold, poultry ranchers may have to combat some challenges of low environmental temperature, poor ventilation, and decreased photoperiod. These climatic variations may directly or indirectly affect egg and meat production. Hence, poultry agriculturists must be prepared to accept these challenges by espousing some cold stress-relieving measures to overcome economic losses.

Although ways of practicing the management in harsh climate may differ slightly across region, the basic principles remain same.

- Proper temperature and humidity suitable for the age is always required,
- Proper ventilation to provide fresh air and removing gases inside house is always required,
- The rearing surface and bedding material should be always warm and dry,
- The drinking water should be maintained at suitable temperature to promote water intake,
- The feed & feeding practice should help bird to maintain their body temperature, metabolism and oasmoregulation.

To achieve these goals, following practices are implemented across country

- External heat source is provided to keep the poultry shed warm and dry
- False ceiling is often used to reduce the volume of shed
- Various types and layers of curtains and jute bags are used to insulate the farm
- Round brooding is often practiced when spot heating is done

Poultry house: poultry houses should be designed in such a manner that there will be a maximum prevalence of sunlight in poultry sheds during day time. Poultry should be protected from cool winds by hanging gunny bags at the places from where the chilled air enters. For this purpose, polythene sheets can also be used. These gunny bags should be hanged down as soon as sunlight goes in the evening till the arrival of sunlight the next morning.

Ventilation: usually birds release a lot of moisture in their breath and droppings that skeptically influence their health, if there is restricted ventilation it becomes

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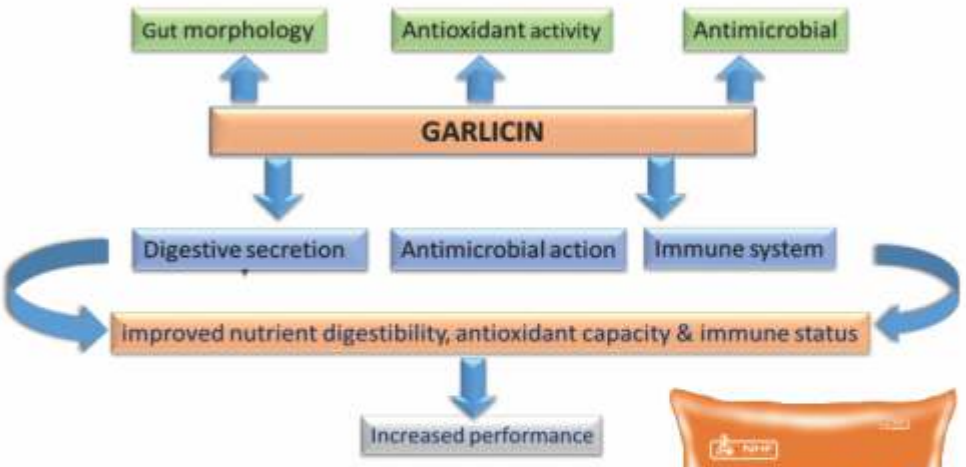

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the reason for building up of ammonia in the air which imposes respiratory threats. So, poultry requires enough fresh air circulating the shed. Sliding windows are used to fulfill this purpose that can be opened during the day and closed during night time. The provision of exhaust fans in poultry sheds can also be helpful in the removal of impure air. To make the poultry shed warm installation of traditional BUKHARIS or heaters is benignant. In small scale poultry farming, the use of 200W bulbs in numbers can also produce heat.

Fig.1:- Deep liter system of poultry farming (Picture- Dr. Sudesh Kumar)

Quality of bedding material: Before chicks being settled in the shed, the floor surface needs to be stabled with a bedding material known as litter. It provides ease and comfort to the birds. A generous quality of bedding material provides insulation in maintaining uniform temperature, besides addition also absorbs unwanted moisture, damping, and encourages drying. It enfeebles fecal material and diminishes the chances of contact between feathered animals and fertilizer. It also encases the birds from the chilled ground and works as a cushion between poultry and floor. Around 6 inches of bedding material or litter is ideally useful in the winter season. This litter provides enough warmth to the bird in the cold season. Normally the moisture content in the litter should be within the range of 25-35%. But this litter to be managed properly otherwise it becomes wet easily with water coming from various sources. Due to this, there is a formation of cakes in the litter that serves as an excellent medium for bacterial growth and ammonia production. If litter becomes too much wet and cake formation is already there then it's quite better to replace it. Do not empty the shed in the winter season as built-up litter saves heat in the shed. If removal of litter is mandatory then a part of litter is to be removed.

Feeding management: poultry utilizes nutrients of food for two main objectives i.e., as an energy emanation to support normal body temperature and to sustain normal physiological activities of the body and as a building material for the development of bones, feathers, flesh, egg, etc. hence, to fulfill such needs an adequate, well-balanced and healthy ration should be offered to the poultry. Low environmental temperature causes more feed consumption and higher oxygen demand. Therefore, it is quite obvious to give birds an ample amount of food as they need extra energy for maintaining body temperature in the winter season. Intake of calories of ME/bird/day changes as the environmental temperature varies. When poultry eats more feed, along with energy, other nutrients are also consumed in excess that is not required and they become a waste. To avoid such wastage during winter energy-rich feed sources like oil/fat should be given along with the diet. In the winter season number of feeders should be increased as compared to summer. The provision of feed should be the whole of the day to the bird. In summer diet containing 23% protein and 3100kcal/kg ME is required while in winter 3400 kcal/kg ME and 23% protein is needed. Poultry feed should contain high caloric value as compared to feed given in the summer season, this type of feed keeps the bird warm. The feed should be stored in dry places to avoid contact with moisture.

Fig.2:- Brooding system in winter (Picture- Dr. Sudesh Kumar)

Watering system:- In the winter season poultry need less water so for maintenance of water in the body, it is needed to provide a continuous supply of fresh water that can be used by the bird. Water must be fresh and clean. If water is very cold then it should be given to the bird after adding hot water to it, so that the cold water attains the normal temperature. Areas facing snow falling confront a problem of blockage of the pipe due to freezing of water during the winter season because the temperature goes below 0°C. Hence, to overcome such issues routine inspection of pipelines should be done to avoid blockage of water. Many of the vaccines, medicines, anti-stress vitamins are to be given to the bird with water. As water intake of poultry was decreased during the winter season. Therefore, care should be taken that waterers are removed few hours before water medication, and medicine/vaccine is given in less amount of water so that birds can consume total water and each bird gets the benefit of medicine/vaccine or other supplements.

Supplementary management: Poultry environment is favorable for pest and rodent as they seek warmer places for dwelling. Hence, their control is to be ensured. Poultry farmers must take care of winter illnesses. If it is left unattended then it may become a serious threat to the flock.

Gut health compromise always leads to poor performance and thus loss in business. Different fed additives play crucial role in maintaining and improving gut health such as Protease, NSPase Enzyme, Probiotics, Essential oils, Organic Acids, etc. Organic Acids such as Coated Benzoic acids helps not only to reduce pathogenic bacteria such Clostridium, Salmonella as well they help to improve Lactobacillus count in gut through increase in Clostridium clusters IV and XIVA which are responsible for Increase in Lactobacillus count.

Essential oils are considered primarily Digestive enhancers apart from their immune function. They help to digest the nutrients in early stages effectively where endogenous enzyme is not active fully. Also, they impede quorum sensing, thus acts as Antibacterial in nature too.

Standard protocols for treatment of illness of birds to be followed by including quarantine the birds and using various broad-spectrum antibiotics along with feed or water, depending upon availability. Birds should be vaccinated properly and the status of vaccination to be properly checked by poultry farmers. When birds are found sick, poultry ranchers should immediately reach to the local veterinarian.

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Nutritional Immunology

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The good health and performance of food animals depends upon many factors like genetics, housing, the frequency of exposure of pathogens and vaccination programs. Nutrition plays an important role in modulating the susceptibility of an animal to infectious diseases. It is well established that nutritional deficiencies will be associated with an impaired immune response to disease challenges. Nutritional deficiency affects cell mediated immunity, antibody production and cytokine production and leads to a general immunodeficiency. The application of nutrients to modulate the immune system is known as nutritional immunology or immuno-nutrition. The modern feed formulations and nutritional strategies usually supply adequate amount of basic nutrients and avoids overt problems of nutritional deficiencies.

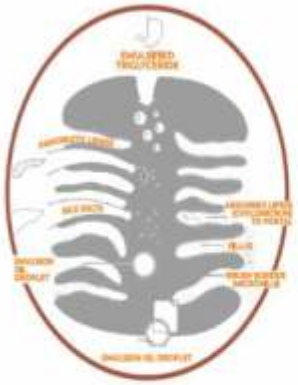
Feed is a source of nutrients for the initial development of the immune cells and various effector molecules and during an actual immune response. However, feed is the largest source of antigens and other chemical-sencountered by the body, and it may contain components such as mycotoxins, capable of modifying the immune system. The presence of antigenic materials and of pathogens in feed results in the activation of the immune

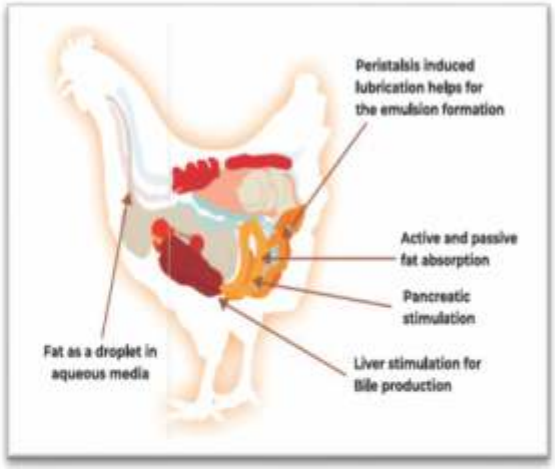
Feed components important in immunomodulation

Immunomodulator	**Function**
Arginine	Substrate for nitric acid synthesis, improves helper T-cell numbers
Carotenoids	Antioxidant function, stimulates vaccine response
Cysteine	Enhances antioxidant status via glutathione synthesis
Flavonoids	Enhances virus elimination from blood
Glutamine	Nutrient for immune cell, improves gut wall functions, precursor for glutathione.
Nucleotide	RNA and DNA precursors, improves T- cell function
n-3 polyunsaturated fatty acids	Anti-inflammatory agents, reverses immunosuppression
Zinc	Maintains T- cell response and antibody production

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.

Liprovet 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.

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system and in a rapid release of a wide range of potent molecules which include cytokines, nitric oxide, hydrogen peroxide and superoxide and hydroxyl and hypochlorite free radicals. Nitric oxide, hydrogen peroxide and free radicals provide a potent defence by means of a chemical attack upon the membranes, cellular proteins and nuclear materials of the invading pathogenic organisms.

Nutrition will enhance the ability of the immune system to respond to a disease challenges. It will influence the passive transfer of immune protection through eggs to the progeny.

Several Amino acids such as arginine, cysteine and glutamine plays important roles in supporting the immune system. These amino acids may need to be considered as conditionally essential nutrients. The original concept of defining nutrient requirements on the basis of deficiency levels is not relevant in total nutrition as many feed ingredients considered here will not have classic deficiency levels. Conditionally essential nutrient however is a more useful concept because it encompasses nutrients that may be synthesized by the body and are therefore in the classic sense non-essential. However endogenous synthesis of these nutrients may be inadequate to meet the requirements of the animal under various conditions such as immune stress.

Arginine is important essential amino acid in poultry diet unlike most mammals they cannot synthesize arginine. In addition to its function in protein synthesis, arginine seems to have beneficial effects upon several aspects of the immune system (thymus and spleen) and influences disease resistance. Cysteine is a limiting substrate for the biosynthesis of glutathione which in turn is a limiting factor for the immune system and is an important cellular antioxidant. Glutathione is used by the cells of the immune system as an energy source. Any limitation in glutathione supply would decrease the rate of proliferation of cells of the immune system and decreases their ability to respond rapidly to immune challenges. Glutathione is a critical nutrient for the maintenance of the immune system in gastrointestinal tract. Various carotenoids such as lutein are valuable in supporting the immune system. Fish oil in supporting to immune system is widely accepted and is related to polyunsaturated fatty acids. Zinc is widely recognized as a micronutrient that is essential for optimum immune response. Zinc deficiency leads to reduced production of macrophages and neutrophils, reduced T-cell responses and reduced antibody production after a microbial challenge.

Nutritional immunology is a complex subject but one which must be more widely exploited for the successful raising of animals for food where ever less reliance upon drugs and medicines is required. Activation of the immune system and production of inflammatory cytokines is associated with a reduction in growth rate and loss of body tissue. Nutrients are released from tissues to support the synthesis of glutathione, acute phase proteins and the production of T- and B- cells. This will strengthen the antioxidant defences to destroy pathogens. It is also clearly important that the environment and the feed deliver the minimum amount of infectious pathogens and antigenic feed components to the animal.

Healthy Gut

A prerequisite
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BUILDS GUT MICROBIAL ECOSYSTEM

Inhibits pathogens colonization and promotes microbiocenosis

ENVIRONMENT PROTECTANT

Better consistency of faeces, reduced NH_3 conc. in animal houses, better animal welfare and litter quality

Feed inclusion rate

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

Presentation

25 kg

Watery and sticky droppings in layers have been a problem in the egg industry for years. High proportion of non starch polysaccharides (NSP) increase gut viscosity leading to pasty vent / loose droppings. High fibre in diet, change in feed, irritant effect of organic acids, chemical toxin binders, feed contaminants, dietary factors, stress due to summer or high production are also responsible for non-specific diarrhoea & dysbacteriosis and further complicating into enterotoxigenic / enteroinvasive enteritis.

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Importance to Improve First Week Body Weight and Reduce Early Chick Mortality

GLOCREST™ Pharmaceutical Pvt. Ltd

Dr. Ramdas Kambale
CEO & Board Member

Dr. Mahesh Rajurkar
Product & Techno Commercial Manger

"Well beginning is half done "– Same is true for early life of chicks. First 10 days body weight has spring board effect to perform at the best till the end. Similarly, first 10 days body weight is equally important in layers and broiler chicks. Because first 10 days is very stressful time for baby chicks due to various factors.

At the same, time controlling early chick mortality (ECM) is extremely challenging in spite of the best management practices. Winter season on its way. Here, the control in early chick mortality is herculean task. Therefore, GLOCREST has introduced a complete solution to take care of all the challenges through a nutritional management.

The commonest causes of mortality found in the first 10 days were the stress factors like transportation, vaccination, omphalitis, yolk sac infections and septicaemia, E. coli and Enterococcus spp. Also, mortality occurs in weak chicks also due to managemental issues such as brooding temperature, access to feeder, drinker, space etc.Due to various such factors, ECM management and first 10 days body weight can be optimised with complete solution containing Vitamins/ minerals/ Probiotics/Prebiotics/Anti-Stress MSM, Protein hydrolysate, Beta Glucan etc to boost the

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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.

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performance of chicks and improve the immunity of baby chicks.

Introduction of GRO-X by GLOCREST Pharma :-

To overcome problem of early chick mortality, reduce stress in chicks and improve chicks body weight GLOCREST launched GRO-X which contains Vit. A D3 EC along with other vitamins, Electrolytes, Probiotics, Protein Hydrolysate, Methyl sulfonyl Methane, Beta glucan and Mos.

- **Methyl Sulfonyl Methane –** MSM is typical anti-stress supplement which has many biological advantages. Dietary MSM in livestock production, including for chickens, has been increasingly investigated as stress controlling factor by ravaging the free radicals (primarily responsible for oxidative stress). It also works as an antimicrobial, and immune modulator.
- **Vitamins: -** Vitamins solution given through drinking water is directly available to chicks for normal body functions, growth, and reproduction
- **Electrolyte and Vit C: -** While requirements for potassium, sodium, and chloride have been clearly defined, it is also important to maintain a balance of electrolytes in the body. Often termed electrolyte balance or acid-base balance, the effects of deficiency of any one element are often a consequence of alteration to this important balance as it affects osmoregulation. Vitamin C in poultry plays a important role in growth, strength and immunity of poultry.
- **MOS–** Mannan Oligo Saccharide is well known prebiotics and its functions especially during early stages, becomes extremely important to create the environment for beneficial microflora & predisposing factor for probiotics.
- **Probiotics –** Proper combination of probiotics like lactobacillus/ Saccharomyces and Bacillus group, becomes extremely beneficial to give the best gut health. They work faster in presence of MOS.
- **β-glucan** may be used as a replacement for dietary antibiotics in animal feeds to improve defense mechanism and boost the immunity consequently reducing mortality and enhancing growth.
- **Protein Hydrolysate: -** Protein Hydrolysate is a functional protein especially formulated to improve the performance of the birds.

Overall GRO-X is like chick ORS- the complete solution to optimize performance of baby chicks in terms reducing early chick mortality and increase the body weight first 10 days.

However, GRO-X can be used any stress conditions whenever encountered.

Usage

1g /Liter of drinking water for 7-10 days after arrival of chicks.

Monitoring observations of chicks after use of GRO-X :-

Based on various field trials, following results were anticipated.

1. Increased Body weight of chicks after 10 days around 10-20 g
2. Reduced Mortality in chicksby around 0.25-0.5%
3. General observations: -

By using GRO-X chickslooked healthy/ active & responsive and inclined towards the optimum performance at the end.

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Winter Management in Poultry Birds

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Poultry farming is one of the fastest-growing and most profitable agri-business in the current Indian market scenario. The poultry sector is facing greater difficulties now than ever before. They must concentrate on managing food safety, animal welfare, and environmental problems while delivering essential protein to a rising global population. Northern India has cold temperatures from mid-November to February. The coldest months in the northern section of India are December and January. The temperature generally drops from south to north throughout the winter months. There are pleasant days and chilly nights. In the north, frost is typical, and snowfall occurs on the Himalayas higher slopes. Poultry farmers should use the precise management practises to ensure the health, safety, and production of their birds over the winter when temperatures are expected to drop. Consider the light, heat, ventilation, feed, and water needs of your flock now, and make any necessary improvements to maximise productivity during the winter. Due to a decrease in ambient temperature, the winter season has a significant impact on poultry production. When the temperature drops below 55°F during the winter, a number of issues arise, including decreased egg production, decreased water intake, decreased fertility, decreased hatchability, etc. As a result, poultry farmers have a lot of reasons to be concerned about managing their flocks during the winter. To increase poultry output throughout the winter, the following factors leads to overcome the problems due to cold:

Orientation of House

Poultry house should be built to give birds all the comfort they need throughout the winter. Temperature and light on various exterior surfaces are subsequently affected by a building's orientation in relation to the wind and sun. Since the apparent path of the sun is shorter in winter, a rectangular home aligned east to west will get the most solar energy. The house should be built so that the shed receives as much daytime sunlight as possible. Gunny bags should be hung at the locations where the cold air penetrates in order to shield birds from the cold winds. As soon as the sun sets in the evening, these gunny sacks should be hung out till sunrise.

Ventilation

Keep the house draft-free with ample of ventilation throughout the cold months. Birds lose a lot of moisture through their breath and droppings, which is bad for their health. If ventilation is restricted, ammonia builds up in the air, causing respiratory issues. Therefore, the house has to have a lot of fresh air flowing through it. Sliding windows are practical for the purpose since they may be opened during the day and closed at night. In order to eliminate dirty air, exhaust fans need also be set up.

Litter

Litter should be spread out on the floor before the chick is put inside the home. The birds find solace in it. A high-quality litter absorbs moisture, aids in drying, and acts as an insulator to keep a constant temperature. By diluted faecal material, it lessens bird interaction with manure. Additionally, it protects the chicks from the ground's cooling effects and acts as a cushion between the bird and the floor. Litter depth should be increase to protect them from cold.

Feed

Feed is used by poultry primarily for as an energy source to maintain body temperature and carry out regular physiological functions, and as a building block for the growth of bones, meat, feathers, and other things like eggs. When the weather is cold compared to when it is hot, the fluctuation in feed consumption is lower for each degree Fahrenheit change in temperature. More feed is consumed and more oxygen is needed when the temperature is low.As a

result, it is crucial to provide the chicken lots of feed as the temperature-regulating process requires more energy in colder climates. The amount of calories ME/bird/day consumes fluctuates with variations in the surrounding temperature. Along with consuming more energy when birds eat more feed, these also take more nutrients that are unnecessary and wasteful. The level of other nutrients may be decreased while maintaining the same level of energy in order to minimise this waste during the winter months. More feeders should be used throughout the winter than during the summer. Birds should have access to food throughout the whole day. It has been demonstrated via experimentation that a feed comprising 23% protein and 3100 Kcal ME/kg is necessary for the healthy development of broilers throughout the summer. 3400 KcalME/kg and 23% protein are required throughout the winter.

Water

Birds don't drink as much water in the winter, so it's important to provide them with a constant supply of fresh water that they may drink. Water needs to be pure and fresh. If the water is sufficiently chilly, hot water should be added to bring the water's temperature back to normal before giving it to the chicken. Because water freezes in the winter, pipe obstruction is a major issue in locations where ice falls. A routine check of the pipeline should be performed when the temperature drops below 0°C to prevent water obstruction. Poultry are given a variety of immunizations, medications, and anti-stress vitamins through water. Birds use less water during the cold months. To ensure that each bird receives the benefits of the medicine, vaccine, or other supplements, care should be made to remove drinkers a few hours before administering the water medication and to provide the medication or vaccination in a smaller volume of water than usual.

Light

The effects of a temperature drop on moist conditions have an impact on birds. The chicks huddle together beneath the electric light to stay warm. Death rates from severe huddling are quite high. Electric brooding serve as a artificial heat during the day and at night. In the winter, commercial farmers can boost egg production by replacing natural light with artificial illumination. Utilize both natural and artificial lighting before sunrise and after dusk to provide the flock with 14–16 hours of light exposure. Additionally, this may lower the price of power. For a modest laying flock, a regular 60-watt incandescent light bulb is adequate.

Disease

Due to the cold weather, birds are more vulnerable to stress throughout the winter. Wintertime illnesses such as coccidiosis, respiratory conditions, and mycotoxicosis are quite prevalent. If the moisture level in the litter is 20% or more, coccidian oocytes will sporulate and become infectious. It is recommended to use preventive coccidial medicine in feed and water. Avoiding the ammonia problem. As a defence against respiratory illness, antibiotic or antibacterial treatment is required. Winter management strategies that are planned safeguard the birds and maintain a constant level of output.

Conclusion

Poultry farmers should be ready to take challenges by adopting the management practices to overcome the economic losses during winters. The main aim of the poultry farmer is to control the environment to the bird's specification as much as possible. Decrease in egg production leads to economic losses so sixteen or more hours of daylight is essential to maintain their potential.

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Use of hydrolyzed bioactive protein peptides in poultry feed to improve production parameters.

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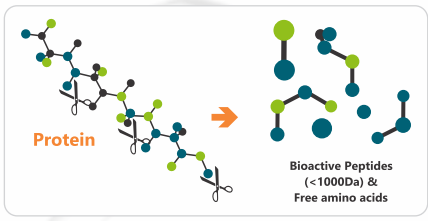
"Nutrinomics, is the merging of the nutrition and health economics disciplines to assess the impact of nutrition on animal health and disease and to illustrate the health and economic aspects of specific changes in the daily nutrition and nutrition recommendations through the lens of cost effectiveness".

Introduction

Protein is a major component of animal tissues and products. Thus, adequate intake of dietary protein is essential to optimise growth, production performance, and feed efficiency in poultry. Soybean meal is most commonly used protein source and used around 20-30 % in poultry feed. Now days protein feed ingredients like soybean meal are consistently increasing in cost; so protein has become one of the most expensive nutrients in poultry diet. After feed consumed by birds, the proteins in feed ingredients are hydrolyzed into small peptides and free amino acids in the gastrointestinal tract of birds, which consume energy. To save this energy, importance of hydrolyzed protein or bioactive peptides in poultry nutrition has been increased. Bioactive protein peptides are produced through the process of enzymatic hydrolysis that generates smaller amino acids chains. Interest in bioactive peptides supplementation in poultry diets has increased over the past decade. Bioactive peptides can be produced from a variety of food ingredients (of animal or plant origin) by microbial fermentation, enzymatic, alkali or acid hydrolysis. Bioactive peptides which are produced during protein hydrolysis can deliver better functional properties such as anti-oxidative, anti-inflammatory, antimicrobial and immunomodulatory. Supplementation of such hydrolyzed bioactive peptides in poultry diet results in the improvement of intestinal health, growth and production performance.

What are hydrolyzed proteins or bioactive peptides?

Hydrolyzed proteins are derived from the chemical or enzymatic hydrolysis of proteins into its biologically active components like, amino acids and peptides. Bioactive peptides usually contain between 3 to 20 amino acids residues and remain inactive while the sequences are kept within the parent protein.



Advantages:

- Bioactive peptides derived from enzymatic fermentation have less hyper allergic and anti-nutritional factors as compared to other protein ingredients.

BPPS FORTE™

Bioactive Protein Peptide System

Efficient Protein Utilization

A poly-nutritional feed supplement comprising highly digestible protein-peptide system for early chick nutrition.

Commercial Benefits:

- Higher digestibility, rapid absorption and higher nitrogen retention.
- Better egg production, reduced number of pullet eggs and less egg breakage.
- Chicks get excellent start in life, improving growth performance and maximizing ROI.
- Minimizes muscle protein breakdown and digestive stress during stress conditions.
- Helps regain body mass in under weight flocks and in maintaining flock uniformity.

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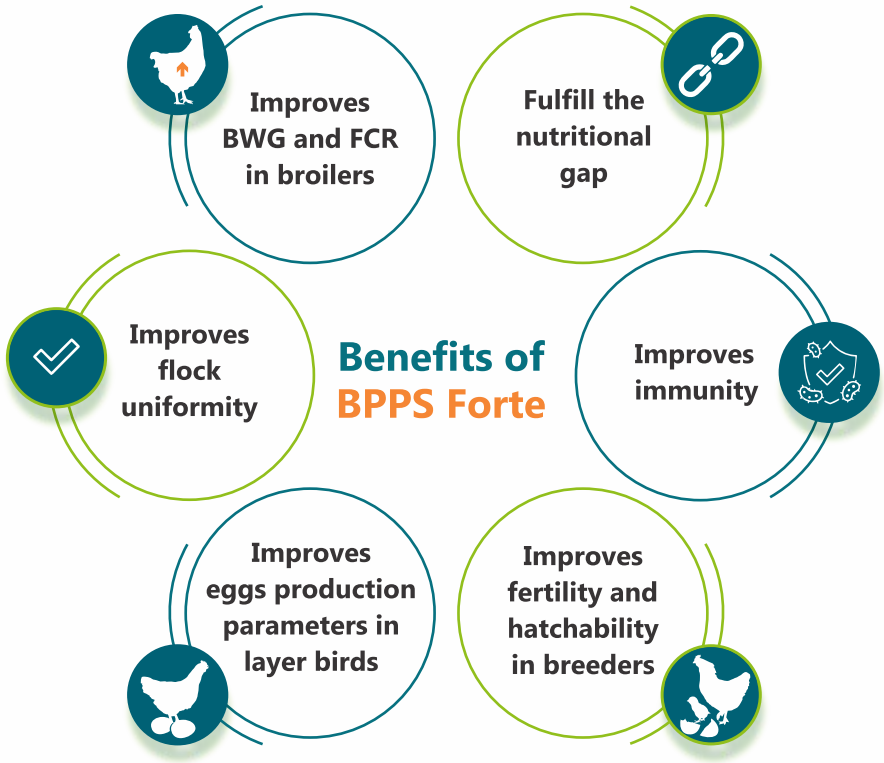
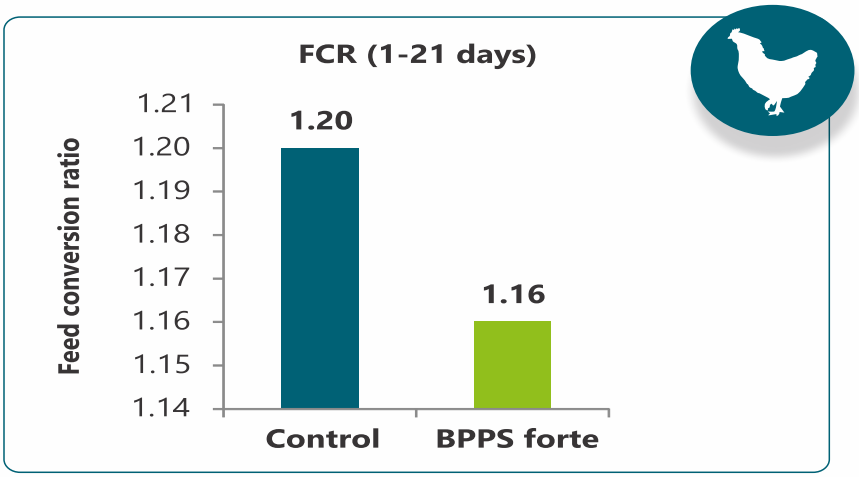
- Bioactive peptides have shown significant increased in the number and size of villi of gut, which facilitates more surface area available for nutrient absorption.
- Few hydrolyzed proteins are having anti-hypertensive effect. Anti-hypertensive peptides functioned by blocking angiotensin converting enzyme (ACE) which modulates the rennin angiotensin system thereby regulating blood pressure.
- Bioactive peptides shown antioxidant and anti- Effect of BPPS Forte supplementation in broiler feed Inflammatory effect by inhibiting nuclear factors –kappa B and blocking the secretion of pro-inflammatory cytokines in an oxidative-stress.
- Some bioactive peptides shown antibacterial effect by damaging cell membrane of bacteria, interfering with the functions of their intracellular protein inducing the aggregation of cytoplasm protein and affecting metabolism of bacteria.
- Immunomodulatory bioactive peptides increases the immunity by boosting immune cells functions i.e. natural killer cell activity or cytokine regulation.
- High quality protein helps to moulted birds back to laying eggs quickly. Hydrolyzed proteins are one of the high quality protein which supports smooth and quick laying in moulting birds.
- In summer feed formulators are reducing crude protein % in poultry diet with extra supplementation of amino acids to minimize negative impact of heat stress due to high heat increment effect of protein. To overcome productive losses easily digestible hydrolyzed proteins can be added in poultry diet.

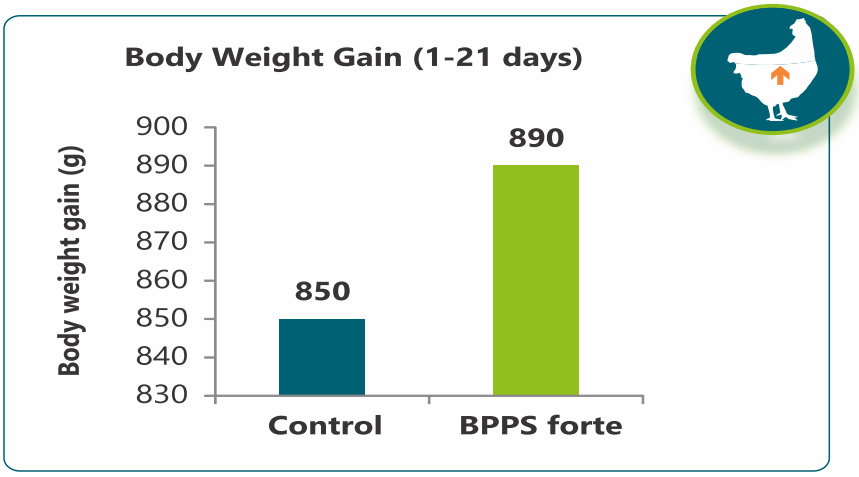
About BPPS Forte:

- BPPS Forte is a poly-nutritional feed supplement produced by hydrolysis of proteins (soybean meal) at specific locations with the help of microbial enzymes into bioactive peptide fragments which can be effectively utilized.
- BPPS Forte possesses higher bioavailability leading to rapid absorption in the bird's digestive system thereby bringing wide range of physiological functions & elicit performance significantly.



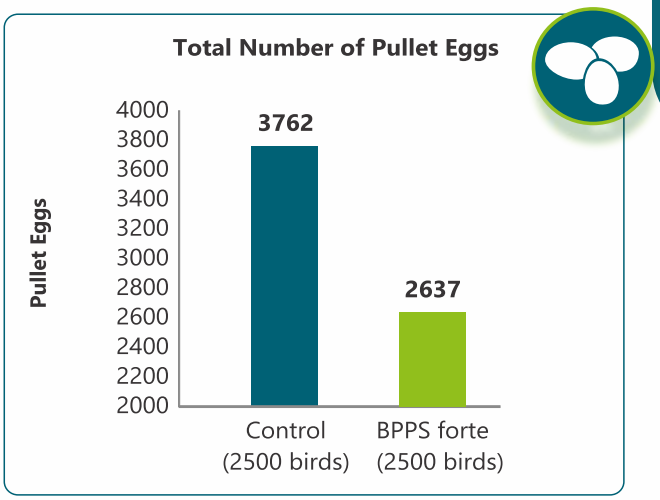
Effect of BPPS Forte supplementation in broiler feed



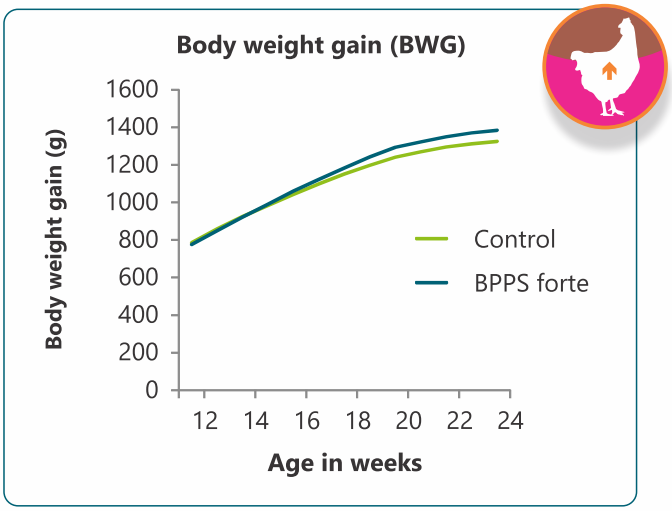


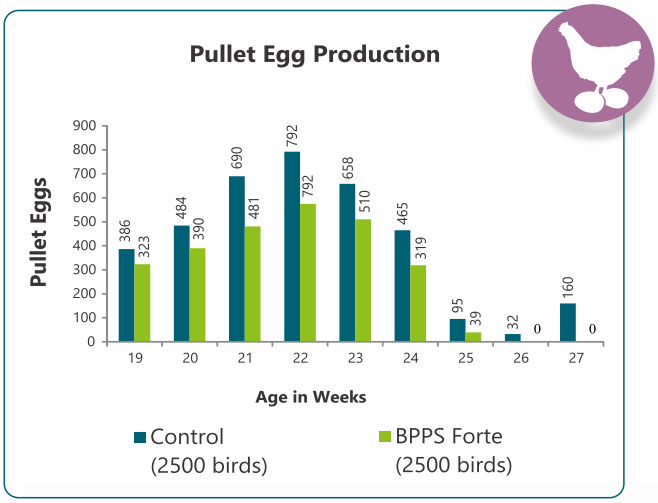
Conclusions:

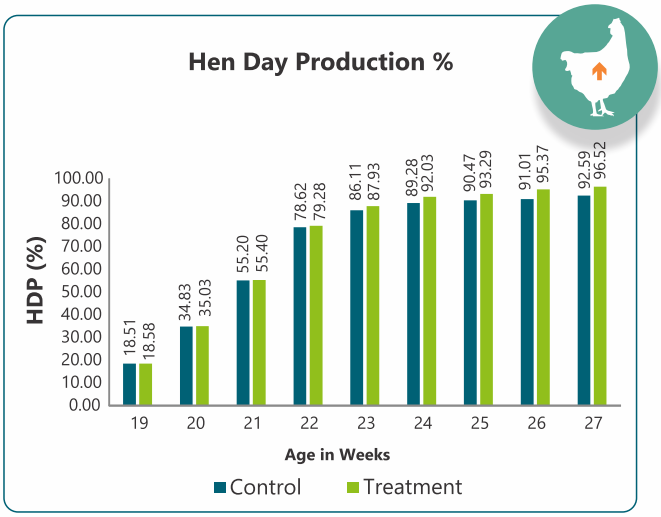
Supplementation of BPPS Forte in broiler diet improved the growth performance i.e. body weight gain and FCR. BPPS Forte supplementation in layer diet improved body weight gain in pullet birds and reduced total number of pullet eggs and thus helped in improving egg production parameters. Supplementation of BPPS Forte in broiler and layer diets helped to increase profitability by improving production performance.



Effect of BPPS Forte supplementation on Performance Parameters in Layer birds







Criteria for selecting a fast phytase

Lode Nollet
Global Product Manager Enzymes,
Huvepharma

What are the criteria to select a good phytase? Why select the fastest phytase? The importance of pH profile, pepsin resistance and speed (PPS) has shown to be critical to yield a fast phytase with reliable matrix values and superdosing properties. The main reason for using an exogenous added phytase in feed is to liberate phosphorous (P), bound as phytate, in raw materials. This does not only lead to a lower feed cost by reducing the amount of added inorganic P, but also exerts a positive effect on performance by degradation of phytic acid, which is a known anti-nutritional factor in feed. In practical animal nutrition, a fast acting phytase has two major benefits. First of all, the higher the speed, the higher the P release from the phytate will be, and the less extra inorganic P needs to be added to the feed. Secondly, as phytate also exerts anti-nutritional properties linked to the binding of minerals, protein and even fatty acids, its faster destruction will thereby improve the digestibility of these nutrients and increase animal performance.

pH profile

It is well-known that phytic acid must be in solution for the exogenous phytase to be able to hydrolyse the phosphate groups. Phytic acid is largely soluble at pH levels below 4.0 (gizzard/stomach). However, at higher pH levels (as in the small intestine), it forms complexes with positively charged ions, like calcium. A good phytase therefore needs to be active in vivo in the upper digestive tract, throughout the complete acid pH range from pH 2 to 4.

Pepsin degradation

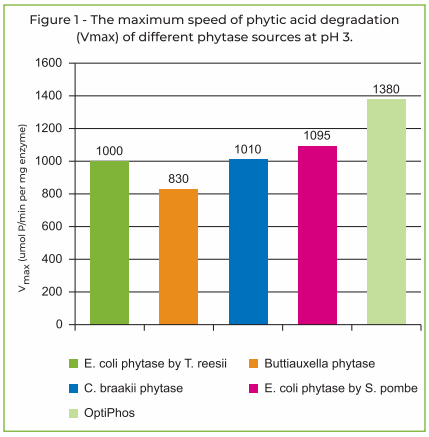
Pepsin is a protease present in the stomach/gizzard, responsi-ble for the degradation of proteins. As phytases are also proble for the degradation of proteins. As phytases are also proteins, its activity can be reduced by pepsin in the stomach area, the site at which it needs to work at its maximum. Research has shown that not all phytases are equally resistant against this degradation by pepsin, which means that the full effectivity of these phytases in the gizzard/stomach cannot be achieved, even though they might have the right pH profile.

Speed

The speed of hydrolysis of phytate by a phytase (the V max) is largely dependent on its pH profile and pepsin resistance and can be determined during in vitro enzymatic studies (the socalledMichaelisMenten kinetic studies).

In view of the short duration of feeding in the gastric region where the phytic acid is soluble and degradable, it is obvious that the Vmax of a phytase needs must be as high as possible and will influence the greater efficiency of phytase (Figure 1)

Figure 1 - The maximum speed of phytic acid degradation (Vmax) of different phytase sources at pH 3.



Scientifically proven P matrix values

In order to calculate how much the addition of inorganic P to feed can be reduced by a phytase, each phytase supplier provides their specific P matrix values. The higher these ma-trix-values are, the more interesting the phytase becomes for a nutritionist when calculating with best cost formulation. It is however of the utmost importance for the nutritionist to be able to 100% rely on the correctness of these supplier's matrix values.

Trials done by independent research

OptiPhos® Plus

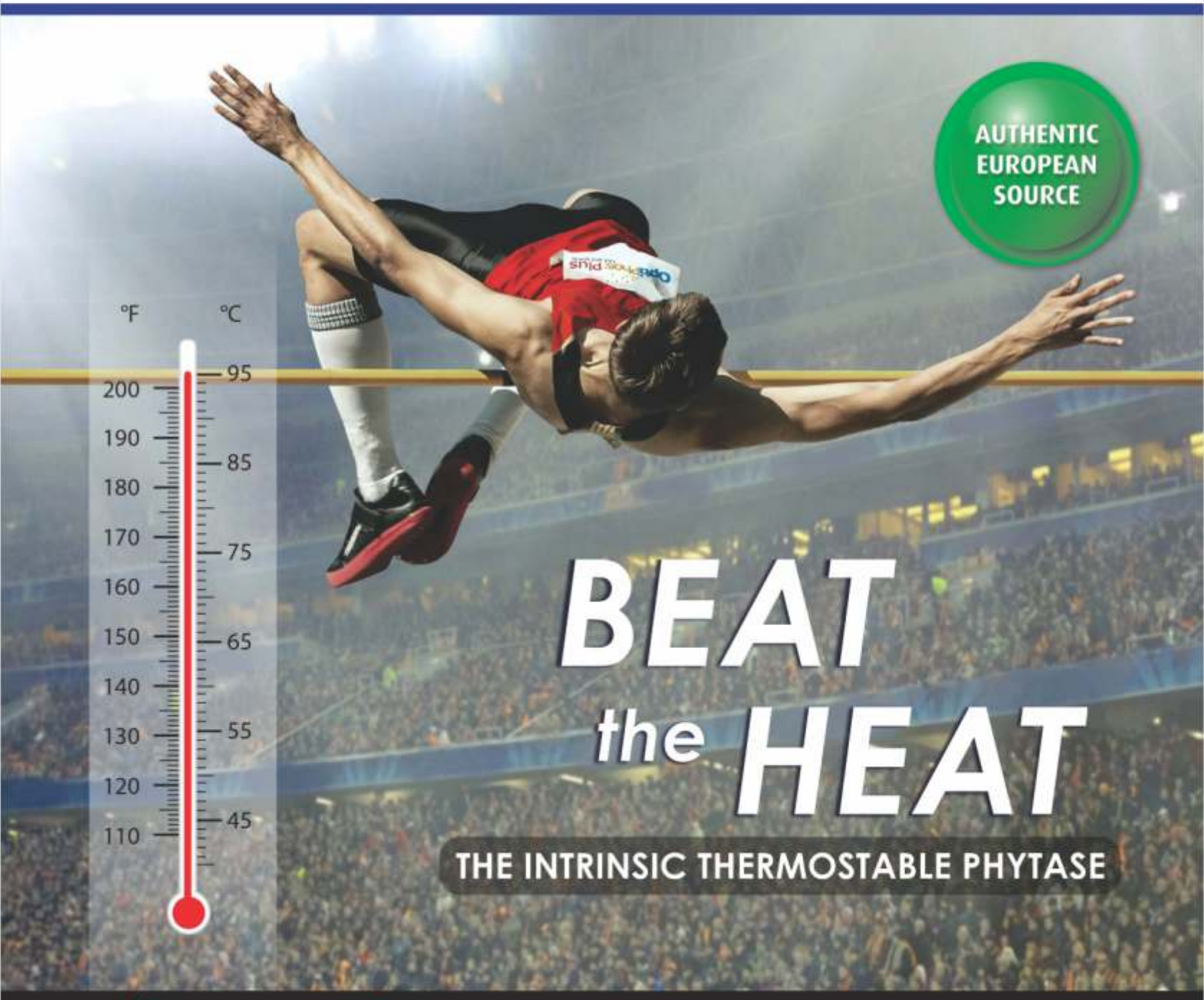


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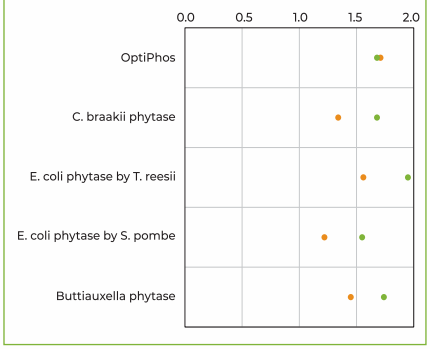
Figure 2 - Scientific matrix values (orange dots) versus supplier matrix values (green dots) of different commercially available phytases at double dose in broilers.



institutes, which are published in scientific peer reviewed journals, form an adequate and solid base for determining (and comparing) matrix values. These matrix values might be referred to as the 'scientific matrix values' and may be differentiated from the matrix values provided by the manufacturer, which we might call the 'supplier matrix value'. Such research in this scientific literature over the period 2002-2017 for poultry, for instance, have revealed that most phytase suppliers, except OptiPhos, overestimated the matrix value by up to 25%, and might thereby lead to under performance of the animals (Figure 2)

Superdosing effects at double dose

Phytate is known to exert anti-nutritional aspects by binding minerals, proteins and even fatty acids, hindering their digestion and absorption by the animal. A fast working phytase like OptiPhos thereby will yield faster positive effects on improvement of performance, and will yield superdosing effects at double dose. Other phytases will need three to four times the normal dose to yield this effect.

Conclusion

It can be concluded that the intrinsic characteristics of a phytase source is determined for a large part by its in vivo activity and its speed of action. The choice of a phytase, ative at all relevant pH ranges, resistant to pepsin and showing a high speed of phytic acid degradation is therefore of the utmost importance to secure adequate and reliable P release from phytate. The better the phytase scores at these three points, the better and more reliable its P matrix values will be and the stronger the animal performance will be enhanced through superdosing.

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Winter Management of Broilers

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Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry

Introduction

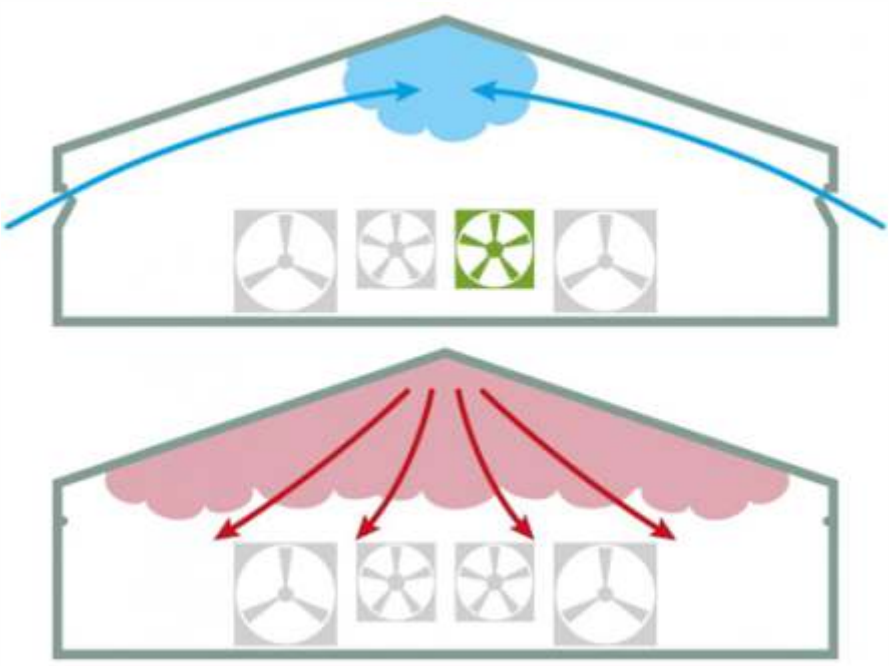
Winter season has incredible impact on poultry generation by bringing down the temperature of encompassing. Amid winter when temperature goes down and different issues like decrease in egg generation, lessening in water consumption, diminishment in fruitfulness and hatchability and so forth happens. Consequently, the administration of poultry amid winter is an essential sympathy toward poultry agriculturist. With drop in mercury level and change in weather, poultry farmers may have to face some challenges of low environmental temperature, poor ventilation and decreased photoperiod, these seasonal fluctuations may directly or indirectly influence the egg and meat production.

Winter season is one of those climates that not only adversely affect human well-being but our animals and poultry population also. Winter season has a treacherous effect on poultry as it decreases the temperature of encompassing. During winter when the temperature goes down beyond 55°F, poultry has to confront several issues like decrease in egg production, reduction in water consumption, diminution in fruitfulness and hatchability, poor FCR in the broiler, decreased weight gain, reduction in fertility, increase in bird mortality and so forth. It has been perceived that the infrastructure of poultry sheds especially in rural India is substandard due to a lack of basic amenities like electricity. Hence, the management of poultry during winter is an essential practice for poultry rancher.

Ventilation

During winter season it is necessary to keep the hose draft free but with plenty of ventilation. If there is restricted ventilation it causes ammonia build up in the air, as the birds release a lot of moisture in their breath and droppings which adversely affects their health which causes respiratory problems.

For the purpose of fresh air, we need sliding windows which can be opened during day time and closed during night time. The provision of exhaust fans in poultry sheds can also be helpful in the removal of impure air. In small scale poultry farming, the use of 200W bulbs in numbers can also produce heat.



Litter management

A good quality litter serves as an insulator in maintaining uniform temperature, also absorbs moisture and promotes drying. It dilutes faecal material thus reducing contact between birds and manure. It also insulates the chicks from the cooling effects of the ground and provides protection cushion between bird and floor. Around 6 inches of litter is needed in houses during winter. The litter gives warmth to the birds during winter.

Normally the moisture content in the litter should be within the range of 25-35%. But this litter to be managed properly otherwise it becomes wet easily with water coming from various sources. Due to this, there is a formation of cakes in the litter that serves as an excellent medium for bacterial growth and ammonia production. Ensure proper ventilation along with frequent turning, raking or replacement of litter will ensure proper litter condition.

Water Management

During winter season birds take less water so far maintenance of water in the body, it is necessary to give continuous supply of fresh water which can be taken by the bird. Water must be fresh and clean. If water is very cold then it should be given to the bird after adding hot water to it, so that the cold water attains the normal temperature. Areas facing snow falling confront a problem of blockage of the pipe due to freezing of water during the winter season because the temperature goes below 0°C. Hence, to overcome such issues routine inspection of pipelines should be done to avoid blockage of water.

Orientation of House

Poultry house should be designed in such a way to provide all the comfort required by birds during winter. Orientation of a building with respect to wind and sun consequently influence temperature, and light on different external surfaces. In winter the arc of the sun's visible path is shortened, an east west alignment of a rectangular house provides a maximum gain of solar energy in winter. House should be designed in a way that maximum sun light enters the shed during day time. Birds should be protected from chilled winds, for this gunny bags should be hanged at the places from where the cold air enters. These gunny bags should be hanged down as soon as sunlight goes in the evening till the arrival of sunlight next morning.

Supplementary management

Poultry farmers must take care of winter illnesses. If it is left unattended then it

(Source: - Images and some information from internet).

may become a serious threat to the flock. Standard protocols for treatment of illness of birds to be followed by including quarantining the birds and using various broad-spectrum antibiotics, like Terramycin, Enrofloxacin, etc along with feed or water, depending upon availability. Poultry environment is favourable for pest and rodent as they seek warmer places for dwelling. Hence, their control is to be ensured. When birds are found sick, poultry ranchers should immediately reach to the local veterinarian.

Complications in management of broiler during winter season

Winter is a season that brings following disease in poultry

- **Coccidiosis–** Coccidiosis is one of the most important and widespread diseases of poultry which is caused by at least 8 species of coccidia of which the most important ones are Eimeria tenella and Eimeria necatrix. tenella causes caecal coccidiosis usually in young chicks and E. necatrix causes intestinal coccidiosis in more mature birds. Acute caecal coccidiosis is characterized by passage of blood in the faeces. Faeces will show a large number of oocysts after the seventh day of infection. In layers affected with intestinal coccidiosis, egg production will go down considerably. Presence of blood in faeces is usually diagnostic of coccidiosis.
- **Aspergillosis (Brooder Pneumonia)-** It is fungal disease caused by Aspergillus fumigatus and is often associated with bad management. It is seen when mouldy feed or litter is used or when there is gross overcrowding. Mould spores attach themselves to damp surfaces. When it rains or even when the air is particularly humid, surfaces can become damp, allowing for mould spores to latch on and grow. The symptoms are not very characteristic and may include difficult respirations and gasping movements. Eyes may be inflamed and there may be cheesy deposits in the conjunctival sacs. On post mortem examination cheesy white nodules or concave disks are seen on lungs or air sacs.
- **Red mite infestations (Dermanyssus gallinae) –** An infestation of red mites are also common during this season that are blood-feeding ectoparasites living in small cracks inside poultry houses, causes skin irritation, stress and a reduction in egg numbers. In extreme cases, birds will become anaemic and can even die.
- **High moisture build up in bedding material:** Excess moisture in bedding material increases the incidence of blisters and bruising in the feet of poultry. It also builds up offensive smell in the farm. The ideal is to maintain litter moisture levels at between 21 and 25 per cent. When the litter exceeds 30 percent, ammonia production will increase as temperatures go up. To estimate the moisture content of your litter, squeeze a handful of it into a ball. If it sticks together in a ball, it is too wet. If it only adheres slightly, it will have the proper moisture content. If it doesn't adhere at all, it may be too dry, which is also a problem.

Tips for management of broiler in winter

1. Keep in mind Preheating of the shed must be done before 6 hours before receiving chicks. Initial temperature is required for best brooding is 95°F.
2. The Common mistake is measuring temperature from floor.Temperature should not be measured from bottom of floor. If measuring from base of floor near litter it should be around Litter-95° Fahrenheit. In winter try to use the air of pending space in shed. It's better to use direct cold air from outside.
3. Round Brooding is considered best to avoid corners. Corners are the space, where birds gathered and increases the chance of mortality.
4. Papers or old Newspapers are used to avoid eating of wooden powder or risk cover, must not be removed before 3-4 days and 2 layers are considered best.
5. Brooding equipment must be well cleaned with good quality disinfectants including water pipes before receiving chicks.
6. Give Proper lights to all birds and light must be same and proper in all areas.
7. Ventilation in night time to remove CO2,CO, NH3 only through upper side of curtain. Never open all the curtain. In Day time always open curtains from the side, where your birds can get sunlight.
8. If sunlight or Light Sun heat you are feeling in shed, you can increase space for birds. But remember in night time again decrease the space with 100% sure birds/Chicks must not overcrowded and temperature is maintained in poultry shed.

Conclusion

It would be best to start preparing well in advance for winter cyles. After all, the success of poultry farming comes down to controlling the environment to the birds' specifications as much as possible. Correct litter and ambient temperature are vital to ensure the chick activity. Along with proper ventilation and temperature, lightening and nutrition management is must for poultry production in winters.

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1989
Patent granted for the Alpha D3 metabolite

2010
Alura launches Alpha D3 in poultry

2010
Alura bring Alpha D3 to India

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Contractual Poultry Farmingfor Poverty-Eradicationin India

Kalicharan Nayal[1], Deepikesh Joshi[2], Neha Pant[3], Anil Kumar[4]

[1]M.V.Sc. Scholar,Department of Livestock Production Management, [2]PhD Scholar, Department of Livestock Production Management, [3]M.V.Sc. Scholar, Department of Veterinary Pathology, [4]Professor, Department of Livestock Production Management, College of Veterinary and Animal Sciences, GBPUAT, Pantnagar, Uttarakhand-263145

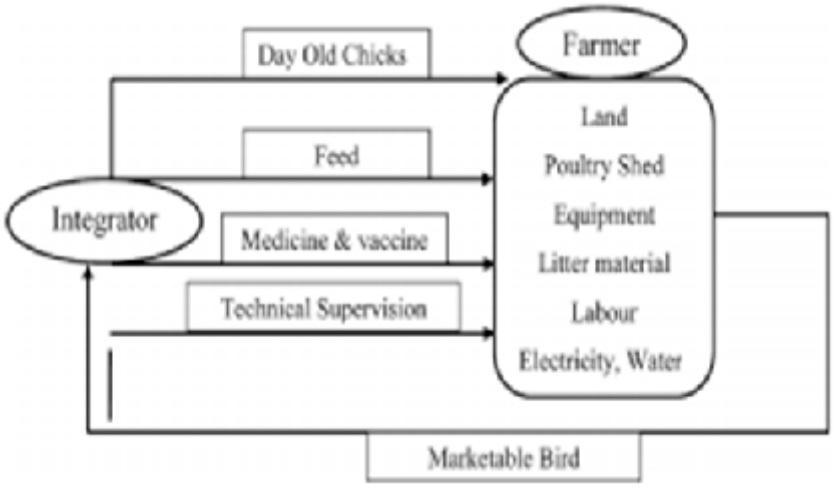
1. Introduction: -

With the poultry population of 851.81 million and egg count of 103.32 billion, India stands6th in the world poultry meat production & 3rd in world egg production. On one hand, Indian poultry market has a sizeable investment in breeding, hatching, rearing and processing activities by companies like Suguna Foods Limited, Venky's India Limited, Skylark Foods Private Limited, Godrej Tyson Foods Limited etc while on the other hand, modern knowledge & quality research performed by various research institutes and agricultural universities resulted in growth in poultry production by 17.95% in urban areas & 3.95% in rural areas in the last 7 years which further resulted in contribution of 4.4 % by poultry production to national GDP together with dairy and aqua industries.

India currently produces 79 eggs/ capita/ annum and 5.87kg meat/ capita/ annum in comparison to the requirement of 180 eggs /capita/annum and 10.5kg meat/ capita/annum which gives a clear indication of number of jobs, income & cheapest protein with high nutritive value which India can generate by poultry sector to face the problem of malnutrition, unemployment, poverty&food scarcity. With rising incomes, growing urbanization and population growth, it is estimated that the Indian poultry industry will emerge as the world's second-largest market in 2020-30 decade.

Contract chicken grower

This business arrangement works on 2 levels. Level 1-Company provides the chicks, feed and technical expertise (e.g., veterinarians, managers). Level 2-Farmers own their land and provide the equipment, management, housing, labour, electricity & water. Free Range &conventional (in sheds) both methods are used to produce chicken meat. Chicken are delivered to growers as day old chicks and are grown for approximately 42 days.



(Panigrahi and Kumar, 2016)

Vertical, horizontal &parallel integration in commercial poultry production

Horizontal integration refers to the

expansion strategy adopted by the corporations which involves acquisition of one company by another company in which both the companies are in the same business line, similar in operations and at same value chain supply level in terms of product and production to subside competition. It brings synergy, but not self-sufficiency to operate independently in the value chain. It helps to acquire control over the market.

Vertical Integration happens where two firms are merged and operate at different stages of the supply chain. It helps the company to gain synergy with self-sufficiency. It helps in gaining control over the whole industry.

Parallel integration is also called as diversification. In this, Integrator may start allied industry. This type of integration not only reduces the cost of production but also generates additional revenue by selling diversified products.

E.g., Hatchery operation starts production of incubator for its own use and sale.

Vertical Integration(National Chicken Council, 2021)

There are mainly two forms of vertical integration namely

- **Backward Integration: -** The farmer or integrator in order to obtain his inputs at a cheaper rate starts his own hatchery or breeding farm. E.g., Working on feed like Maize and Soyabean procurement, Grandparent, parent and DOC hatchery.
- **Forward Integration: -** The integrator starts his own processing plant or marketing centre in order to fetch a better price for his output or product. E.g.,Working on retail, export and other parameters.

2. Economics of Contractual Poultry Farming

To start a contractual poultry farm in 2022,the construction of shed requires an expenditure of approximately Rs. 3lakhs, Rs. 5 lakhs and Rs. 8 lakhs for small, medium and large poultry units, respectively. The initial capital investment is on poultry shed, feeders, drinkers, Borewell+IP Set, Brooder drums, Tarpaulins, Electricity wiring, Syntax. Approximately Rs 4.1 lakhs for Small (2900 broiler), Rs 6.4 lakhs for medium (4300 broiler) & Rs 10.1 lakhsfor large (8000 broiler)poultry units is the initial total capital investment. Of the total investment, poultry shed alone cost more than 70% of all categories.

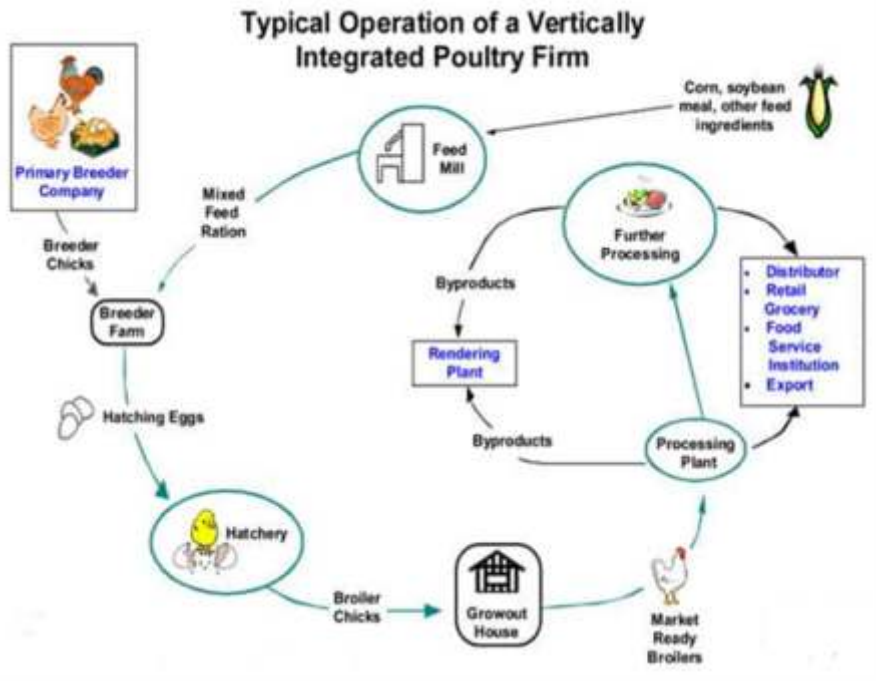
If we see the condition in 2022, the company will provide chicks, feed(prestarter, starter, finisher), medicine, vaccine, supervision by supervisors & the interest on this working capital will be 7% per annum for 2 months & the total cost that will be incurred by company will be Rs 3.9 lakhs for small, Rs 5.7 lakhs for medium & Rs 10.6 lakhs for large poultry units.

A farmer has to invest invariable and fixed cost. Variable cost comprises of labour cost, litter material, firewood, electricity, lime, lightning bulb and interest at 7% per annum for 2 month all combined to form total variable cost incurred to farmer to approximately 21.4 thousand for small, 26.8 thousand for medium & 49.2 thousand for large poultry units.

Fixed cost comprises of depreciation on poultry shed & equipment, 12% interest per annum for 2 months all combined to form total fixed cost incurred by farmer to approximately 10.5 thousand for small, 16.4 thousand for medium & 26.1 thousand for large poultry units. So, the total cost incurred by farmer will be variable + fixed cost i.e., 32 thousand for small 43.2 thousand for medium & 75.4 thousand for large poultry units.

Total cost incurred by the company and the farmer will be 4.2 lakhs for small, 6.1 lakhs for medium & 11.4 lakhs for large poultry units, respectively. Gross return to company will be 4.3 lakhs, 6.3 lakhs, 11.7 lakhs for small, medium and large units, respectively. Gross return to farmers after adding sale of gunny bags, return from manure and incentives paid per kg of live bird will be 41.9 thousand, 63.7 thousand & 1 lakh for small, medium and large poultry units, respectively.

In the current scenario of 2022, after calculating all depreciation in fixed costs and all interests in total cost, the farmer will get a net profit of 9.9 thousand, 20.5 thousand, 32.6 thousand & the company will get net profit of 42.1 thousand, 64 thousand & 10.8 thousand for small, medium & large poultry units, respectively for each full sale. The per kg bird incentive for live weight gain is considered to be Rs 5 in this case. If there is a good production, majority of company will give incentive at Rs 8 per kg live bird. In that case ,the profit on farmer's side will increase to 15.84 thousand, 32.8



(Source: - Images and some information from internet).

thousand and 52.16 thousand approximately for small, medium and large units for each full sale.

3. Advantages

1. Contractual farming provides proper nutrition, a suitable environment, husbandry and disease control programs (vaccines, veterinary services, monitoring & controlling infectious disease), proper transportation facility for improved poultry production.
2. Contractual farming improves human welfare, fights poverty, increases family income and ensures food security at affordable prices because they select traits that focus on maximum poultry production and improving feed utilization and farming profits. With the benefit of contract farming, India is in a position to export3,20,240.46 MT of poultry products to the world for the worth of Rs. 529.81 Crores/ 71.04million USD during the year 2021-22.
3. In comparison to the backyard poultry sector which is largely confined to the small and marginal farmers and landless labourers and is affected due to the non-availability/non-accessibility to the nearby village markets and having limited access to the adjacent smaller townships, contractual farming provides access for small holders in high-value supply chains that require specialized production inputs and sales to markets for specialized outputs. In other words, assured market outlet, technical knowledge and management skills are provided.
4. Industries have facility of cold storage that creates an untapped domestic market for the processed and value-added products as there is change in the mind set of the consumers toward larger acceptance to chilled/frozen chicken and also other value-added products, thus bringing in strong processing and marketing value chains.
5. Production and price risks are important features of poultry farming. Risk sharing is one of the widely cited reasons for contracting. Integrators bear all input and output price risks and share production risks with the poultry.
6. Industries, like ABFL in Bangladesh, provide internal insurance to cover the risk of loss and safeguard the interests of its contract farmers in case of death of immature chicks resulting from diseases or other causes. Farmers contribute Tk 1.50 per chick to the fund when they purchase day-old chicks. For chick mortality within a given range, a portion of the initial contribution or risk premium is refunded. If the mortality rate is above 15 percent, the farmer can claim full insurance compensation.
7. With the help of contract farming, NGOs work on poverty alleviation by targeting small holders and the poor people in a manner Bangladesh Rural Advancement Committee (BRAC) is doing in Bangladesh.
8. Due to financial support, technical information exchange and marketing assistance, the net return of vertically integrated contract farming system in broiler production generally goes 1.7 times higher compared to the independent farming system.

4. Disadvantages

1. If there is delay in lifting the produce after arriving at market age, feed consumption goes up resulting in high FCR ratio and ultimately lowers down profits.
2. Profit % - Delay in payment (15 %), low price (6.7 %) and sometime rejection on quality produce (1.77%).
3. Delay in the supply of inputs & high feed prices.
4. Delay in providing chicks, which results in lesser number of batches in a year and thus, less income per year.
5. Delay in providing veterinary services by company. Also, the charges deducted towards the same are very high.
6. Deduction of tax at source.

5. Conclusion

Farmers are interested in contractual farming due to factors like financial management, less marketing risk, production & price risk reduction, availability of inputs, institutional credit, additional /assured income, buy back arrangement, important role of integrators, profitability, solutions of disease problems and knowledge gained about poultry farming. On the other hand, they are afraid of contract formalities, poor servicing by contracting firm, lack of infrastructure, loss during the previous contract, no insurance by their contracting firm, high initial costs and limited income/less profit.

The key for success in the poultry business is to reduce feed costs of Maize & Soyabean. Poultry units should not be raised close to each other as it is a threat to bio-securityalthough it has a marketing advantage but may give negative results. Some major requirements are: proper training to farmers by industry and promoting formation of National Egg Coordination Committee, increasing intervention of National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) and providing Minimum Support Price to Poultry Sector, setting up poultry producers' cooperatives and subsidizing the feeds and inputs of poultry, providing benefits/ concession available to agriculture such as concession in electricity tariff, subsidized water to poultry sector, provided poultry insurance to the birds, proper testing system for pesticide residues, antibiotic residues, and hormonal residues along with necessary facilities for exports should be made available by the government.

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- Fully automated processing, totally eliminating impurities and possibility of microbial contamination.
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Phytogenics Support Broilers in Challenging Times

Anne Möddel
Senior Technical Sales Manager,
Dr. Eckel Animal Nutrition

Favourable conditions for broiler production are under pressure. Due to climatic changes with increasingly frequent hot spells, temperatures during production are increasing in many areas. This leads to more heat stress and contributes to health problems. On the other hand, economic conditions are becoming more and more demanding. Enormous losses in animal performance due to increasing stress have to be compensated. At the same time, scarcer raw materials require more sustainable management.

Why is heat stress such a challenge? There is the loss of performance on the one hand, adecreasein animal welfare on the other. The most obvious consequence is reduced growth. But heat also leads to a higher permeability of the intestinal wall and increases the risk of leaky gut syndrome and wet litter, both of whichare causes for foot pad disease. A strong protection against these negative impacts is especially crucial in young animals that still need to establish a stable intestinal tract. Anta®Phyt MO is an all-natural way to counteract these risks. With the power of hops, it supports the digestion, stabilises against gram-positive bacteria and supports the immune system.

Trial reveals the stress champion in broiler production

A recent trial conducted in India confirmed the properties of Anta®Phyt to strengthen animals against challenging climatic and hygienic conditions. In this trial, temperatures in the stable were increased to over 30°C during the day from the third week of life. As a further challenge, used bedding material was reused to capture the possible positive effects of the phytogenic on gastrointestinal health during the trial.

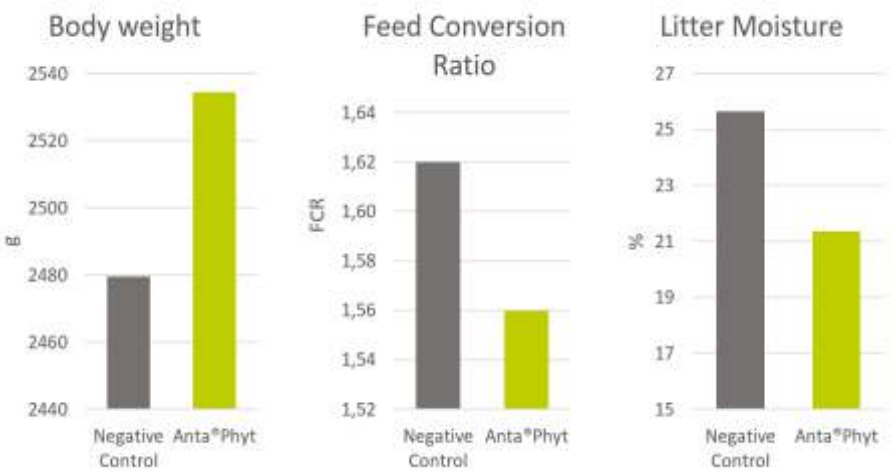

Fig. 1: Anta®Phyt improves body weight, feed conversion rate and litter moisture under heat stress conditions

For this trial, 200 male broiler chickens (Cobb 500) were randomly allocated into two treatment groups with 10 replications each (n = 100 in each treatment). The trial period lasted from day 1 to day 42. The first group (negative control, NC) received an ordinary diet, in the second group the NC diet was supplemented with phytogenic additive Anta®Phyt MO (200 g/t Anta®Phyt MO, APMO).

Anta®Phytisa unique combination of natural plants and their extracts with hops as the primary ingredient.

The birds were fed with starter (day 1 — 14), grower (day 15 — 28) and finisher (day 29 — 42). Diets and drinking water were offered ad libitum. The additive was given throughout the duration of the experiment. The experimental birds were exposed to cyclic heat stress with temperatures during the day was between 30 and 36°C from the 3rd to 6th week of age. Body weight and feed intake were recorded weekly. Litter samples were collected from each of the pens towards the end of the feeding trial at day 42.

Best all round support: Anta®Phyt

The results clearly demonstrate the potential of Anta®Phyt. As can be seen in figure 1, supplementation of Anta®Phyt supported body weight by about 2.2 % (42d; NC: 2.48 kg, Anta®Phyt: 2.53 kg, p = 0.072). Feed conversion ratio in the Anta®Phyt groups was significantly better as compared to the NC group on the day of slaughter (NC: 1.62, Anta®Phyt: 1.56, p = 0.002). With 99 %, survival ratewas not affected, which points to a generally high health status. Litter moisture content decreased with Anta®Phyt supplementation to the diet, as compared with the NC group (NC: 25.64 %, Anta®Phyt: 21.36 %, P = 0.002).

Anta®Phyt: your sustainable ally against performance losses

The results of this trial clearly indicate that Anta®Phytcan reduce the negative effects of challenging production conditions, such as lower body weight and higher feed conversion rate. Thus Anta®Phytis a reliable tool to alleviate the effects of challenging production conditions and sustain performance and gut health stability in commercially reared broiler chickens.

News

The USDA Proposes New Measures to Reduce Salmonella in Poultry

The Agriculture Department proposed a new strategy for addressing salmonella contamination in poultry on Friday, which includes requiring flock testing and possibly declaring the bacteria an adulterant in all raw products sold to consumers.

Salmonella bacteria are estimated to cause approximately 1.35 million human infections and 26,500 hospitalizations in the United States each year, according to the Centers for Disease Control and Prevention (CDC). Over 23% of these infections are linked to poultry consumption. Foodborne illness can have a devastating impact on people's lives, both personally and financially, with the cost reverberating throughout the economy. According to USDA's Economic Research Service (ERS), the total cost of foodborne Salmonella infections in the United States is a staggering $4.1 billion per year, with an additional $88 million in lost productivity to the economy. These are real-world costs that can and should be avoided.

"We know that Salmonella in poultry is a complex problem with no single solution," said Sandra Eskin, USDA Deputy Under Secretary. "However, we have identified a series of strategic actions that FSIS could take that are likely to reduce Salmonella infections linked to the consumption of poultry products, and we are presenting those in this proposed framework."

According to FSIS, an estimated 1.35 million infections occur in the United States each year, and to meet 2030 federal goals, Salmonella infections — from all sources, not just poultry — must be reduced by 25%. FSIS says it intends to pursue the same 25% reduction in infections linked to the products it regulates — meat, poultry, and eggs.

(Source: - Images and some information from internet).

Use of Phytobiotics as Feed Additives in Poultry Feed

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Introduction

Herbal feed additives (often also called phytobiotics) are commonly defined as plant-derived compounds incorporated into diets to improve the productivity of livestock through amelioration of feed properties, promotion of the individual production performance, and improving the quality of food derived from those animals. Commonly use plant derived compounds are herbs (flowering, non woody, and non persistent plants), spices (herbs with an intensive smell or taste commonly added to human food), essential oils (volatile lipophilic compounds derived by cold expression or by steam or alcohol distillation), or oleoresins (extracts derived by non aqueous solvents). Within plant derived feed additives, the content of active substances in products may vary widely, depending on the plant part used (e.g. seeds, leaf, root or bark), harvesting season, and geographical origin. The technique for processing (e.g. cold expression, steam distillation, extraction with non aqueous solvents etc.) modifies the active substances and associated compounds within the final product.

1. Garlic (Allium sativum)

Garlic contains 17 amino acids as well as allicin, an organosulfur molecule. Garlic boosts feed intake as well as FCR. Garlic has the ability to repair the epithelial lining of the intestine and improve nutrient absorption. Allicin has antiparasitic properties and also increases antibody formation, which destroys sporozoites and protects chickens from coccidial infections.

The phenolic compound in garlic also reduces the oocysts count and by changing cation permeability and results into death of Eimmeria. Garlic extract in liquid formulation enhanced the serological response in broiler bird to inactivated NDV vaccine at a concentration of 1 mg/L in drinking water for initial 2-3 days before parentral vaccine that continued further for 17-20 days. Garlic has ability to reduce serum total cholesterol level due to steroidal saponin. It inhibits the cholesterol absorption in intestine and it has direct positive effect on in vivo cholesterol metabolism.

2. Spirulina platenensis

Spirulina has been known as filamentous spiral shaped blue green algae but also belonged to the genus arthrospira (photosynthetic bacteria). Spirulina belongs to the cyanobacteria classes that naturally grow in warm alkaline aquatic condition. It is well known that Spirulina is considered as most promising nutrient due to its high protein percentage (65-70% DM), vitamins, minerals and wide variety of natural carotenoids and xanthophyll pigments. Spirulina is nutritionally rich in linoleic acids, phenolic acids, phycocyanins, beta-carotene and chlorophyll. The properties of Spirulina that makes it one of the richest nutrients among various algae are antioxidant properties, hypolipidemic effect, immunomodulation and anti- inflammatory effects. Supplementation of Spirulina in the diet of chicken decreased the concentration of cortisol and it also decreased the serum lipid concentration. It increased the antioxidant status and improved feed conversion ratio. Under chronic heat stress, Spirulina were fed in the diet of broilers which causes reduced serum level of triglycerides, cholesterol and total lipid. The positive effect of 1 and 2% Spirulina supplementation in the diet of broilers decreased LDL, triglycerides and increased HDL at the end of experimental period. The reason of low lipid content in plasma is due to the presence of c-phycocyanin in Spirulina which inhibits the pancreatic lipase activities in a dose wise manner.

Spirulina platenensis contains cholorophyll pigment phycocyanin which has potent antioxidant property. During chronic heat stress condition which causes oxidative

damages of the tissues by rapid released of corticosterone and causes lipid peroxidation. At 2% concentration of Spirulina platenensis in the diet of poultry significantly lower the MDA level.

3. Linseed (Linum usitatissimum)

It is considered as the most effective herbal formulation also; linseed has a positive gastro-intestinal functional impact. Therefore, it is considered as an alternative to soyabean due to its high oil content (35%) rich in PUFA (Poly unsaturated fatty acids) for example alpha- linolenic acid. Alpha linolenic acid is an important in the diet of animal species because the organism does not synthesize it. Various studies have shown that addition of linseed in the diet of poultry increased the level of ω-3 PUFA content of poultry meat apart from the previous feed strategies that includes oily fish by-products and Alpha linolenic acid along with ω-3 PUFA competes with ω-6 PUFA by improving their metabolism. Linseed is a rich source of vitamin A, D, B6, F and E. Linseed is a rich source of lignans and it also possesses strong anti-oxidant property. Due to the presence of high activity of Vitamin E contained in linseed, causes decrease in the intensity of lipid peroxidation. Linseeds have positive effect on the ω3- ω-6 ratio that result in the reduction of lipid peroxidation (MDA-malondialdehyde and lipid peroxides- LOOH) and increases the lifespan of meat after slaughter. In addition to this, Linseed also contains anti nutritional factor called as linamarin that may be inactivated by heat treatment. It was concluded that application of Linseed in the right proportion can reduce the risk of total cholesterol level in the muscle and storage fat. Excessive consumption of ω-6 fatty acid can disturb the physiological balances of the chemical substances released from the body including leukotrienes and prostaglandins.

4. Fenugreek (Trigonella foenum)

Fenugreek (Trigonella foenumgraecum) is an annual herb known as methi. It is used as phytobiotic all over the world. It is well known herb that grows in nature and cultivated in India and Pakistan. It also has characteristic odour and taste. Fenugreek has various medicinal phytobiotic characteristics in terms of antibacterial, anticancer, antiulcer, anti-helminthic, anti-diabetic and antioxidant activity. Also, it influences the digestion and modifies texture of food. It is a rich source of total carbohydrate, protein, fat and minerals such as calcium, magnesium, zinc. It consists of 28.4% protein, 9.3% crude fibre and 7.1% crude fat and many other chemical substances. Fenugreek have husk (seed coat) and endosperm part which contains saponin (4.63%) that plays an antioxidant property also it contains polyphenols and total dietary fibre (77.1%), along with various fatty acid predominantly linoleic, linolenic, oleic and palmitic acid. Chemically, fenugreek consists of flavonoids, polysaccharides, saponins, fibres and various other alkaloids. Fenugreek seeds are endospermic in nature and are used as spices and have different therapeutic effects. Fenugreek improves the feed efficiency with low cost of production when used as natural feed additives in the broiler chicken nutrition. It was also reported that addition of fenugreek in the diet of broiler chickens improves feed efficiency, feed conversion ratio and protein efficiency ratio. It also contains galctomannans and neurin which increased the appetite and improved the feed conversion ratio.

Dietary addition of fenugreek @ 1% significantly ($p<0.05$) decreased blood cholesterol and glucose. Reduction in serum glucose is due to stimulation of B-cells by 4 hydroxy-leucine (amino-acids) which causes glucose tolerance and also improved the antioxidant property in RBCs which decreased the production of free radicals that causes hemolysis.

The in-vitro antibacterial activity of fenugreek also observed against E. coli in Muller-Hinton agar. Fenugreek has many beneficial effects in respect to growth performance and gut morphology without causing any harmful effect on health.

5. Guggul (Commiphora swynnertoni):

Guggulsterone a bioactive steroid substance extracted from C. mukul and C. swynnertoni exerts both hypoglycemic and hypolipidemic effect against the diabeteic rats which were supplemented high fat diet. Guggulesterone also exhibited a potent inhibitory function against inflammation and tumor cells. Guggul can also be helpful in treating the Type -2 diabetes milletus. The C. swynnertoni species of guggul is of less importance although it is used by various community of Masssai and local community of Kenya and Tanzania. The ketonic steroidal compound present in C. mukul have been used to lower the lipid cholesterol level observed in various studies. The mechanism by which cholesterol is metabolized by the resin present in the C. mukul involves promoting the release of bile acid synthesis from cholesterol by the enzyme cholesterol 7-alphahydroxylase. In addition to this the hepato-protective properties of C. mukul makes it the out of the most excellent phytobiotic used in antioxidant activity by the activation of antioxidant- pathways via increase in the antioxidant enzymes such as superoxide dismutase, catalase and glutathione peroxidase.

6. Amla (Emblica officianalis)

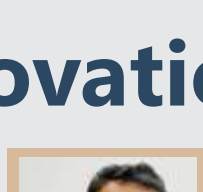
Amla is a rich source of amino acids, minerals and phenolic compounds. Avian species are more prone to acute heat stress that lead to high mortality, decreased growth rate and more susceptibility to various diseases. Various source of pollutants in the environment (metals, pesticides, hazardous gases, etc), are the root cause of stress that leads to excess production of reactive oxygen species (ROS). Therefore, inclusion of amla in the diet of broiler chicks reduces the negative side effect of stress. Amla is a rich source of Vitamin C which eradicates the stress level by decreasing the production of corticosteroid. Although poultry can also synthesize Vitamin C in vivo but it is very less to overcome the stress level in acute heat stress, excess humidity and parasitic infestation. It was also observed that there was increase in albumin globulin ratio due to increased catabolic activity of amla. Amla causes reduction of total cholesterol concentration in blood and serum.

7. Tulsi (Ocimum sanctum)

Tulsi has been used among Asian countries over hundreds of years ago. Inclusion of tulsi (Ocimum sanctum) has a positive effect on the body weight gain (growth) and hematological profile on broilers due to anti-stress, immunostimulatory, fungi static and insecticidal properties of tulsi. It was also investigated that supple-mentation of dried leaves of Ocimum sanctum had the potential to combat against various diseases in poultry pathogens particularly e.g., IBDV by inhibits the virus replication in-vivo. It was investigated that leaves extract of tulsi offers significant antiviral, anti-bacterial and anti-fungal protection against various systemic diseases as well as local acute infections. Ocimum sanctum increases the stamina to overcome the negative physical and psychological effects of stress. Supplementations of tulsi leaves extract in the diet of broilers improves body weight and also decrease mortality percentage.

GLOCREST Pharmaceutical – Innovation for a Better Health

Mr. Rajesh Babu
Chairman



Dr. Ramdas S. Kambale
(CEO)

GLOCREST™

The History & Emergence

As the name suggests' GLOCREST Pharmaceutical Pvt. Ltd' designed and registered as pharmaceutical entity which has clear intentions to serve the farming and pharmaceutical community and reach to the peak of the pyramid to glow like a rising star.

Company was registered early this year with an objective to provide better nutritional solutions to poultry and livestock farmers.

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.

GLOCREST is having very experienced team under the stewardship of Dr. Ramdas S Kambale – Able Nutritionist and proven Animal Health Professional who has legacy of successful ventures in animal health industry.

With business expansion of Krishna Group in animal health & nutrition, a family of entrepreneurs from the past four decades have carried the dream of making a difference to people and the community lead by Mr. Rajesh Babu as

Inaugaration of Glocrest Pharmaceutical Pvt. Ltd. – Corporate office @ Mumbai – Dr. Ajit Ranade , Associate Dean , Mumbai Veterinary College , Mumbai . Mr. Rajesh Babu Kaparthy and Dr. Ramdas Kambale.

the Chairman& Managing Director of Krishna Group. His son Mr. Nashank Kaparthy also involved in this business.

Four Decades and Strong -Believers and Optimists ,driven by the passion to make an impact. Krishna Group Ventures -Shivaram Farm, Krishna Farm Kaparthy Farm, KB Farm, Kaparthy Infotech, Shivaram industriesand recently launched – GLOCREST Pharmaceutical Pvt. Ltd to foray into 'Innovation for a better health'.

GLOCREST Pharmaceutical Pvt Ltd announced its new corporate office opening in Thane - Mumbai on 22 June 2022. The inaugural function was attended by various industry experts and stake holders to witness the success of the group.

The GLOCREST Board involves Mr. Rajesh Babu, Dr. Ramdas Kambale , Mr. Nishak Kaparthy and Seema Kaparthy.

GLOCREST™ launched innovative Animal Nutrition products in poultry division. Company has clear plans to expand its wings on global footprints and prove them as supplier of choice in farming and pharmaceutical community. GLOCREST manufactures its products at Vadodara-Gujarat and Chennai-Tamilnadu.

Company's product range includes

Chelowix **- Organic trace mineral fortified with curmin extract,**

CocciCare -Anti-coccidialfeed additive, Enzirob - Perfect combination of essential enzymes and probiotics, Feedacid- Acidifier Mould inhibitor and antifungal poultry feed additive, GLYCYRRHIZIN -Growth promotor & stress control, GLOZOL Plus complete blend of vitamins & amino acid , GROX –Early chick mortality & stress control, TOXKIL -Broad spectrum 3 way action toxin binder, Vitowix - **5th generation, coated branded vitamin premix for broilers/layers/breeder.**

For Technical Support:
Dr. Mahesh Rajurkar
Product and Techno-Commercial Manager
GLOCREST Pharmaceutical Pvt. Ltd.

(Left to right- Mr. Arun Pamulapati-Director, Dr Ibrahim & Dr Ajit Jadhav)

Leading Manufacturing Facilities with its Innovative R and D Products - introduced by International Health Care Ltd (PVS Group India) in "Healthand Nutrition Asia 2022" expo at Bangkok

International Health Care Ltd introduced its innovative R and D products in the event of "Healthand Nutrition Asia" combinedly organised by VIV and VICTAM held in 7th to 9th September 2022 at IMPACT, Bangkok, Thailand.

Mr. Arun Pamulapati- Director and Dr Ajit Jadhav- General Manager successfully represented the company and introduced company's manufacturing facilities to the importers, distributors and feed millers, mainly focused on company's Research and Development department and its activities certified by DSIR (Department of Scientific and Industrial Research) central government of India. Company introduced its new R and D product METABO developed with advance metabolite technology. The features of the product are as Feed cost saver, FCR improver, Disease preventer and Performance enhancer in poultry. Company received massive response to the METABO from the all visitors from various countries. Also, company introduced its other brand feed additives like PROTOX Special (Biological toxin destroyer cum growth promoter), EGGRON (Nutritional health care supplement for commercial layers and breeders to optimize egg production with better quality) and ESSENSOL (Essential oils with phytogenic extracts to control gut pathogens and to enhance performance).

PVS Group is one of the largest manufacturer and exporter of animal and aqua health care products in India having 28 years of experience, expertise and excellence. Group is having larger production capacities of health care products in its existing manufacturing plantsi.e., 125 tons in powder, 48000 ltrs in liquid, 0.8 tons in bolus and 6 KL in probiotics-all capacities are pershift. Apart from this existing facilities PVS Group recently expanded manufacturing facilities over in 15 acres area in Mallavalli (near Vijayawada) to meet future demand and supply. According to Dr Seshaiah V. Pamulapati, Chairman and Managing Director of PVS Group, this upcoming production facilities in Mallavalli are ready for production and going to start with its full-fledge capacity within next 6 months, and by adding these new facilities in to existence, PVS Group will become the largest manufacturer in poultry, veterinary and aqua health care industry in India

Mr. Arun Pamulapati- Director and Dr Ajit Jadhav- General Manager together shared and exchanged the

knowledge with the people belonging to the whole industry and were remarkable at representing the company in the event of "HEALTH AND NUTRITION ASIA".









35th Edition of SPACE 2022 from September 13 to 15, 2022 organized at the RENNES Exhibition Centre, France - A Grand Success

- Ricky Thaper

Mr. Marc Fesneau, Agriculture Minister, France inaugurated this 35th SPACE Exhibition- once again, the gathering place for all the businesses involved in animal's productions to look for the future. Mr. Fesneau in his inaugural speech said that Live your Dreams and especially live your farming dreams. It's an industry with the future because it has meaning. It feeds people and at the same time it is a basis of solutions to many of the climate issues facing us.

Mr. Marc Fesneau, Agriculture Minister, France addressing at the inaugural function of SPACE 2022 Poultry and Livestock Exhibition.

The 35th Edition of SPACE 2022 Poultry & Livestock Exhibition was a year of International Reunion as it had witnessed a good number of international visitors around the Globe. A remarkable 25 "Top Buyers" had come from Saudi Arabia, Turkey, Chile, Colombia, Nigeria, Czech Republic, Morocco and India to consolidate investment projects. The "Top Buyer" program began under the auspices of the Ministry of Economy and Finance. A highly specific program of visits and meetings had been organised with certain Exhibitors throughout the three days of the show.

Mr. Marcel DENIEUL, President and Chairman, SPACE said that Exhibitors at SPACE 2022 unanimously praised the quality of contacts they had with visitors during the three-day event. This professionalism, in a globalised world, clearly reflected the constructive and fluid tone of this year's expo.

Mr. Ricky Thaper with Mr. Marcel DENIEUL, President and Chairman, SPACE

This year's SPACE 2022 expo brought together 1,400 exhibitors, of which 185 were new and 318 exhibitors were from 37 countries. The poultry farming industry exhibited in halls 10A and 10B, while that of animal nutrition was well-represented in halls 9, 4 and 5 and nearly 200 stands displayed equipment in the outdoor area. More than 1,00,000 visitors, including 15,000 international visitors from 120 countries, including large delegations from Africa, Europe and Asia visited this expo. Poultry, Dairy and Aqua farmers working in all types of

animal production were able to enjoy the Expo.

Group Photo of SPACE Team

According to Ms. Ane Marie QUEMENER, Commissaire Generale / Exhibition Manager and Director of SPACE, over 35 years SPACE has become an essential event for all. Created by the leaders of the agricultural organizations, it was designed to be a place to meet, debate and exchange ideas, for all farming related professionals. Ms. Ane Marie QUEMENER added that the efforts and hard work by the SPACE Team is paying off!

Mr. Ricky Thaper with Ms. Ane Marie QUEMENER, Commissaire Generale / Exhibition Manager and Director of SPACE

According to Ms. Stephanie PILLET from SPACE Team, this year's event was again marked by innovations that benefit animal production. Out of a total 103 entries, 36 exhibitors were awarded 1 star and 3 stars by the Jury.

At Aviagen - Ross booth with Mr. Florian Blevin, International Commercial Manager SSA, Aviagen Limited.

According to Amandine LEROUX, International Development, Exhibitors have access to the International Club where they meet and interact with foreign delegates, with the help of free interpreters and also seek advice from export development agencies (Adepta, Bretagne Commerce International, Enterprise Europe Ouest).

Mr. Ricky Thaper with Mr. Kuntal and Ms. Amandine LEROUX. She was welcoming to all International Government officials and special invites at the SPACE.

The SPACE was again a springboard for employment and international trade thanks to the job vacancies at the job-dating events organized by APECITA, and more than 300 Business to Business meetings organized by Enterprise Europe Network between exhibitors and international investors said Ms. Chloe LETELLIER, Communication Press, SPACE. She further added that SPACE is a key event and a global forum where international exhibitors and visitors meet and share ideas.

Mr. Ricky Thaper with Ms. Chloe LETELLIER, Communication Press, SPACE

For foreign visitors, visits to poultry, dairy & sheep farms and agro industrial facilities were arranged. These tours were supported by ADEPTA and the Ministry of Agriculture and Fisheries. While interacting with exhibitors, they rated SPACE as a very high-quality trade show.

At Trouw Nutrition-a Nutreco Company booth with Dr. Gerard Diop, Technical Sales Manager.

The animal presentations also boosted the appeal and quality of our event. 550 cattle of different breeds provided a continuous spectacle in the main ring. 150 sheep and goats of 10 different breeds were also shown. Their involvement and the quality of their presentations were highly praised.

At Proteon Pharmaceuticals booth with Mr. Nipun Gupta, Chief Commercial Officer and Mr. Pawel Kotula, Global Business Operations Director & Board Director of India Subsidiary.

The 70 conferences, debates and seminars that took place during the three days gave this year's event a new dimension, as poultry and livestock farmers were able to express their needs and expectations, in line with the ambition of the creators of SPACE.

At Agri Reseaux International (ARI) booth with Mr. Xavier CADIOUU, Director.

All Indian delegates visiting SPACE Expo appreciated the arrangements at Expo by the organizers especially at the International Club which had all facilities of translators, business meetings and refreshments for the international visitors.

At Biochem booth with Mr. Ruben Crespo Sancho, Technical Manager, Central Europe & LATAM.

SPACE 2022 developed the political dimension of discussions with livestock sector stakeholders. The Minister of Agriculture, Marc Fesneau as well as various stakeholders were able to speak and convey their messages to exhibitors and livestock farmers during SPACE. These visits reinforce SPACE as a platform of expression and discussion to advance the major issues regarding the future of the livestock sectors.

At CCPA Group booth with Mr. Luiz Storino Filho, Managing Director, Asia Pacific.

At Adisseo Both at SPACE Expo

At the DSM booth with Mr. Patrick Wieczorek. Expert Technique Ruminant.

The 35th edition of SPACE concluded with an excellent record in terms of discussions and contacts, based on trust, in a spirit of construction and progress. The 36th Edition of SPACE will be organized from September 12-14, 2023, at the Rennes Exhibition Centre, Rennes, France

Training Program on "Advanced Biotechnological Approaches to Augment Productivity in Poultry for Ensuring Food and Nutritional Security"

20th September 2022, Hyderabad

On September 20th, the International Livestock Research Institute and the ICAR-Directorate of Poultry Research, Hyderabad, launched a collaborative five-day training programme on "Advanced biotechnological approaches to augment productivity in poultry for ensuring food and nutritional security."

The Chief Guest, Dr. Bhupendra Nath Tripathi, Deputy Director General (Animal Science), praised the ILRI-ICAR collaboration and the progress made in various collaborative projects. He praised the team for organising this training programme for the NARS system's young faculty members at a time when the nation's livestock and poultry are being characterised on a mission basis.

Dr. Tripathi urged the participants to apply their knowledge gained in this programme and to use various biotechnological tools for the characterization and genetic improvement of livestock and poultry for various economic traits. He also emphasised that the faculty should seek external funding for their research as well as commercialization of the technologies. He urged the development of multidisciplinary projects with a holistic approach to addressing the problems of the industry and farmers.

Dr. H. Rahman, ILRI regional representative for South Asia, elaborated on the long-standing relationship between ILRI and ICAR and the benefits to both organisations in his address. He urged the program's participants to be more proactive and learn as much as they could from this advanced biotechnological training programme. He also suggested that germplasm be exchanged between Indian and African countries because their agro-climatic zones are similar.

Dr. Olivier H, Chief Geneticist at ILRI, described the similarities in livestock rearing patterns, breed characteristics, and ecological terrains between India and Africa. He urged the two organisations to strengthen their collaboration in the poultry sector for high-quality research, technology dissemination, and genetic resource sharing.

Earlier, Dr. R. N. Chatterjee, Director, DPR, briefed about the various research, extension and capacity building activities being undertaken by the Institute, He said that working in isolation will not fetch better returns and collaboration on a global scale is the need of the hour to achieve solutions for the common challenges. Dr. Chatterjee opined that biotechnological approaches are the new paradigm to improve the productivity and performance of livestock and poultry as the traditional breeding approaches have almost reached a plateau. He urged young minds to make the best use of this opportunity.

Dr. T. K. Bhattacharya, the program's Course Coordinator, provided an overview of the various activities that will be covered during the five-day training programme. He stated that a greater emphasis was placed on hands-on training for participants to learn laboratory techniques.

The training programme included 20 participants from 10 SAUs and 5 ICAR institutes from 13 different states.

The programme was attended by ILRI officials from New Delhi and Hyderabad, as well as scientists and staff from the Directorate.

Coimbatore Gathering

Novus Knowledge Forumbrings 'Gut Health Optimization in Poultry' to Coimbatore (Tamil Nadu) and Hyderabad (Telangana)

In an effort to share knowledge on how gut health can impact poultry production, Novus International host edits second in a series of forumstitled, 'Gut Health Optimization in Poultry' in the cities of Coimbatore (Tamil Nadu) and Hyderabad (Telangana) on 25 and 26August2022, respectively.

Coimbatore and Hyderabad are prominent poultry-producingareas in India. Both markets consist of strongly integrated farming, commercial feed mills, and a mix of layer farms. With increases in demand for broiler meat and eggs, the challenges of getting good quality raw feed materials at a competitive price areincreasing. Due to the use of lower quality feed and other factors, maintaining good gut health is another challenge for poultry producers. Fortunately, there are certain organic acids and essential oil complexes that have become important tools to help optimize the gut health of birds. Novus hosted these events to provide insight on how to help support good gut health in poultry.

The two Novus Forums received an overwhelming response with over 100 attendees including integrators, feed millers, and layer farmers, along with eminent knowledge/thought leaders from the poultry industry.

The keynote speaker in the seminar was Dr. D. Chandrasekaran, a retired professor of animal nutrition at TANUVAS (Tamil Nadu Veterinary and Animal Sciences University). Having published over 75 scientific articles in national and international journals, Dr. Chandrasekaran is a renowned thought leader, nutritionist, and researcher in India and the subcontinent.

At the event, Dr. Chandrasekaran talked about the importance of gut health, emphasizing that maintaining gut health is the first priority for every nutritionist in the poultry industry. Linked to better immunity, nutrient utilization, improve digestibility and overall performance of the birds, gut health is the most important factor. Using non antibiotic additives, acidifiers, enzymes, and protected organic acid can help to control many gut pathogens and improve beneficial microbes in the gut, he said.

During the event, Dr. Manish Kumar Singh, director of strategic marketing for Asia briefed the audience about Novus International and its strong presence and foundation in feed additive products based on science and research. The

Dr. D Chandrasekaran

Hyderabad Gathering

Dr. Manish Kumar Singh

sessions were moderated by Reena Rani L C, Novus senior marketing communication specialist – South Central Asia.

Dr. Rajesh Kharvi, Novus category marketing manager in APEC, explained how Novus gut health solutions are unique and help poultry producers to maximize their profit by reducing the pathogen load in the intestine. He talked about the various trials Novus has conducted, showing the efficacy of Novus solutions – particularly eubiotic solutions AVIMATRIX® feed supplement and NEXT ENHANCE® 150 feed additive – in controlling pathogens and increasing beneficial bacteria in the gut.

"Novus believes in providing to our customers solutions with demonstrable value. With our unique eubiotic solutions for optimizing gut health and farm profitability, we are strategically well-positioned to serve our customers and increase their profits," he told the group.

AVIMATRIX®is created with Novus premium blend technology, utilizing a high concentration of benzoic acid embedded in a matrix that helps with homogeneous dispersion and the slow and continuous release of active ingredients along the entire intestinal tract of the bird. Due to its composition, AVIMATRIX®o is dustless, free-flowing and non-corrosive, which allows the active antibacterial ingredients to be delivered in the lower part of the intestinal tract.

NEXT ENHANCE® 150contains a high level of essential oil compounds with thermostability and a patentedmicro-encapsulation technology that ensures the release of active ingredients at the right site in the gut. This structure and active ingredients is show to reduce pathogenic bacteria, improve gut morphology, help to control Eimeriaspecies, and increase beneficial bacteria in the gut,all of which helps toimprovethe overall performance of the bird.

The event was supported by the Novus India team:Dr. Krishnamurthy,sales director;Rakshith T S,national sales manager;and Sridhar Jakkani,sales manager.

Dr. Rajesh Kharvi

Dr. Krishnamurthy

Rakshith T S


Reena Rani L C


Sridhar Jakkani

For more information email: info.sca@novusint.com or visit www.novusint.com.

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.

L-R: Dr.K. C. Veeranna, Vice-Chancellor, KVAFSU, Bidar| Shri. Prabhu Bamala Chauhan, Hon'ble Minister For Animal Husbandry & Fisheries, Govtof Karnataka | Sri.Govindaraju, Hon'ble Member of Legislative Council, Govtof Karnataka | Dr. Sushanth Rai B, President, KPFBA

Minister inaugurates state-of -the-art Poultry Training Center & Diagnostic Lab in Bengaluru

The Karnataka Poultry Farmers and Breeders Association (KPFBA) and the Karnataka Veterinary, Animal and Fisheries Sciences University (KVAFSU) jointly have setup one of its kind state-of-the-art Poultry Training Center & Diagnostic Laboratory in Bengaluru. The Lab housed in KVAFSU campus will do pioneering research to do with promotion of poultry health.

Inaugurating the Center, the Minister for Animal Husbandry & Fisheries, Mr. Prabhu Bamala Chavanassured the poultry sector that he would help remove any hurdles in the growth of the sector. Commending the Center for investment in modern technologies, he said the contribution of animal husbandry and fisheries to the GDP was growing.

Free courses for farmers and students

The Vice Chancellor of KVAFSU, Dr. K. C. Veeranna said that students of KVAFSU would be using the lab for research as this has specialized and most modern equipment. Also two batches of 30 farmers each will be under going training in poultry farm management and health care at the Center. A memorandum of understanding (MoU) was signed between KVAFSU and KPFBA on this where in the latter will run the

KPFBA
Karnataka Poultry Farmers & Breeders Association

RURAL ORIENTED & FARMER FRIENDLY

For details contact:
Inayath Ulla Khan,
Executive Secretary,
KPFBA
9886730997

Glimpses of inauguration of
'KVAFSU -KPFBA Poultry Training Center & Diagnostic Laboratory'
held on Thursday 25th August 2022

courses, free of charge for farmers and students.

The KPFBA President, Dr. B. Sushanth Rai said the laboratory equipped with ultra modern sophisticated equipment will help the poultry community in the state and else where in monitoring disease out break as well work on managing the same. One of the features of the Lab is going to be its easy accessibility the poultry farmers who can get tests done here to confirm of any disease that may or may not have affected the farm. This, headded, would lead to better and efficient farm management practices and help in reducing chicken mortality rate.

Dr. Sushanth Rai said the Lab and the Training Center will have the best of equipment and will be headed by **Dr B U makantha**, are tired Professor of Poultry Science (Veterinary College, Hebbal). The Lab will have three sections- Microbiology, Pathology and Nutrition. The Lab and the Training Center is another fine example of academia and industry coming together to take the poultry sector to the next level.

Attached: Glimpses of inauguration of 'KVAFSU-KPFB A Poultry Training Center & Diagnostic Laboratory' held on Thursday25th August 2022.

Licious Introduces the D2C Plant-Based Meat Brand, UnCrave

With the launch of UnCrave, a D2C plant-based meat brand, Licious, India's largest D2C Unicorn, announced its entry into the alternative protein sector. This launch is consistent with the company's portfolio diversification strategy, which leverages its strong core brand equity. Licious intends to become a market leader within the first year of its launch and to create relevance for the larger group of meat-eating consumers who trust the brand.

Developed from plant-based proteins, the current offering includes vegetarian chickn and muttn seekh kebabs that are high in protein and free of all artificial preservatives and trans fat. Initially, the UnCrave range will be available in all major Indian metro cities.

Licious has become every meat lover's preferred destination over the years. Licious has pioneered the development of a mainstream consumer language for quality in India, establishing standards supported by world-class infrastructure, R&D, and innovation. Licious has gained an in-depth understanding of meats and meat lovers over the last seven years. These deep insights assisted the brand in realising that there is a large segment of people who crave meat when they are unable to consume it. This is what inspired the development of UnCrave, a plant-based vegetarian alternative to meat that ensures customers will always have a way to satisfy their cravings.

Krimanshi Technologies, Jodhpur signs MOU with Lovely Professional University, Phagwara (Punjab)

MOU is made and executed between Krimanshi Technologies Pvt. Ltd., Jodhpur and Lovely Professional University, Phagwara (Punjab). The parties discussed and considered it expedient and beneficial to enter into long-term collaboration for carrying out joint activities and to provide assistance and support to each other in their respective individual activities and programmes. This MOU will come into force upon affixing of the signatures of the representatives of the both institutions and will remain in effect for 5 years. The term of this MOU may be extended as per mutual agreement of both Institutions.

Krimanshi Technologies Pvt. Ltd. is engaged in sustainable and unconventional feed systems to feed animals by valorizing food residues and surplus into highly nutritious feeds whereas Lovely Professional University 'LPU' is engaged in educational, research & development, consultancy, training, social and other allied activities.

There may be exchange of students by the parties for academic, research, training and allied purposes from time to time and may carry out funded and non-funded research & development projects, consultancy, training, skill development and other programmes and activities jointly. Conferences, exhibitions, seminars, symposia, workshops etc. may be organized by the parties jointly.

Dr. Neelam Chaudhary and Dr. Vishal Johar are presently designated coordinators for the administration of this MOU from respective parties and will be responsible for exploring opportunities and discussions for cooperative activities and programmes and facilitating mutual assistance and to ensure the functioning, effectiveness and enforcement of this MOU.

55th AGM & 63rd National Symposium 2022

"Changing Dynamics of Animal Agriculture in India"

Date: 30th September & 01st October, 2022

Venue: Hotel The Leela Mumbai, Andheri - Kurla Road, Near Mumbai International Airport, Andheri East, Mumbai

Navigating to the future of animal agriculture in India - highlights of CLFMA's 63rd NationalSymposium 2022

The Compound Livestock Feed Manufacturers Association of India (CLFMA) conducted its 55thAnnual General meeting and 63rd national symposium in Mumbai on September 30 and October 1 at Hotel Leela, Mumbai. The theme of the event was **'Changing Dynamics of Indian Animal Agriculture'** which aimed to capture and assess industry trends, identify key challenges and plan the future for the sector.

Over 450 participants representing all stakeholders in the animal value chain - academicians, feed manufacturers, aqua farmers, animal health and nutrition experts - attended the forum.

Welcoming dignitaries, speakers and members, **Suresh Deora, Convenor & Secretary, CLFMA,** said, "I would like to extend a warm welcome to our chief guest Shri Purshottam Rupala to the inaugural of our 63rd symposium. He has been a guiding force for welfare schemes for the betterment of farmers across India. I welcome Shri Jatindra Nath Swain who has been spearheading the Blue Revolution project, a central government scheme to help aqua farmers in the country; and Balram Singh Yadav of Godrej Agrovet - a veteran of the industry. I would also like to welcome Shri Tarun Shridhar, Former Secretary AHD, a great supporter of the animal industry."

Introducing the session, **Neeraj Kumar Srivastava, Chairman, CLFMA**, said, "Change is the only constant. India's livestock industry is undergoing a transformation, in tandem with positive macroeconomic and demographic trends. Our current focus is the adoption of modern solutions to overcome existing and upcoming challenges. We appreciate the government's approachability, which is allowing for faster growth of the industry."

"India is heading down a new path to success and we are glad to be collaborating closely with the industry. The government will take cognizance of all innovations highlighted by technical experts. The achievements of this industry are building up the nation," said **Parshottam Rupala, Minister of Fisheries, Animal Husbandry and Dairying (AHD) department, Govt. of India,** in his address as the Chief Guest at the Symposium.

He recommended implementing waste-to-wealth strategies for the disposal of dead animals. He added that the government is considering PPP (public-private-partnership) models for animal health in alignment with India's One Health vision.

This was followed by the CLFMA Award Ceremony. The Famous CLFMA awards were given to two leaders, who had diligently worked and contributed to the development of the livestock sector. The Life Time Achievement awards were presented to Er. Anand Menon, FIE, who had contributed a lot to the livestock sector, during his glorious forty years of service as CGM, KSEL, Kerala & CLFMA Award was presented to Dr. Rudra Nath Chatterjee, Director ICAR-Directorate of Poultry Research, Hyderabad for their marvelous contribution to the Indian Livestock Sector. CLFMA Chairman congratulated all the CLFMA award winners.

Balram Singh Yadav, Managing Director of Godrej Agrovet, presented the journey of the industry, highlighting data on growth in production and efficiency over the last two

decades. He shared the optimism of the industry, reflected in a CAGR of 7.5% this year. "The next decade is going to be explosive. Investments in animal husbandry will outstrip any industry. Our contribution to agriculture GDP will grow from 37% to 50% in the next 5-6 years," he said.

Jatindra Nath Swain (SecretaryFy.) said consumer demand is shifting to animal proteins, with a projected 4x rise in consumption by 2047. He urged the participants to adopt sustainable solutions to water and electricity consumption.

An industry survey report was also released on the occasion, followed by a vote of thanks by **Divya Kumar Gulati, Deputy Chairman, CLFMA of India.**

Cultural Event and Networking Dinner was enjoyed by all participants.

Day two of the Symposium began with the Welcome Address by Mr. Neeraj Kumar Srivastava, Chairman, CLFMA OF INDIA. The first session brought up technology solutions with a focus on data and analytics. "Mitigating the challenges of price escalations of feed ingredients" was moderated by **Amit Saraogi, Managing Director of Sarawagi Agrovet.** "Our industry has seen unprecedented price hikes for crops like soybean and corn. There is a strong need for unbiased and robust data to prevent unfavourable situations from repeating."

RMSI Cropalytics' Kumarjit Mazumder shared a glimpse of the methodologies of their digital crop map tool. It uses satellite images to capture plots of standing crops. A price outlook on relevant commodities like soymeal, mustard cake, cottonseed oil cake, bajra and maize was revealed by **Prerana Desai, head of research at Samunnati Agri.** She shared observations on the impact of feed substitution, margin pressures and global macroeconomic trends. **Kevin M Roepke from USSEC** talked about 'Chickenomics' with a comparison of India and Sri Lanka. He brought out the increase in USA crush capacity driven by the adoption of renewable fuel policies. **Hemant Bansal of Patanjali Foods,** representing the Indian Vegetable Oil Producers Association, maintained that prices of crop feed need to be at a reasonable range to guarantee the sustainability of the ecosystem.

Building customer experiences, adopting innovation in branding and hyper-localizing for the domestic market were key call-outs from industry leaders participating in a panel discussion on go-to-market strategies for the livestock industry. The session was moderated **by Balram Singh Yadav, Managing Director of Godrej Agrovet.**

Dan Meagher, President and CEO of Novus International, said, "The power of branding is very important. Processing of animal products is going to create a new customer experience. Brands are going to differentiate at the customer level." **Suguna Group's Soundararajan** and entrepreneur **Dr. Manoj Sharma of Mayank Aquaculture** shared their respective learnings from the poultry and shrimp sectors for the benefit of participants of the forum. **Bhupendra Suri of Creamline Dairy** said, "The idea of private players in value-added categories like ghee, paneer and curd is rising fast, with opportunities for new categories like whey drinks."

In the final session, **Dr. Parminder Singh, Professor of Animal Nutrition at Guru Angad Dev Veterinary And Animal Sciences University,** brought up the lacunae in the system. He spoke about technical challenges faced by livestock breeders in implementing standards. Government representatives **Dr. Amit Sharma of the Food Safety and Standards Authority of India (FSSAI) and Amit Choudhary of the Bureau of Indian Standards (BIS)** invited participants to liaise and get involved in developing and amending standards. Highlighting the challenges with verification of reports of milk contamination, **Dr. Raghavendra Bhatta, Director of the National Institute of Animal Nutrition and Physiology,** said, "There is a need for scientific sampling with state-of-the-art laboratories set up to prevent non-compliance."

The session was moderated by **Dr. P.S. Mahesh, Joint Commissioner and Director of Central Poultry Development Organisation and Training Institute, Govt. of India.** He encouraged members to approach and engage with the government's representatives for a better future.

Concluding the symposium, **Shri. Tarun Shridhar, former Secretary, AHD,** advised, "Rather than offering subsidies, an enabling policy environment and infrastructure support will nurture entrepreneurs and promote growth. We need to capitalize on our vast land resources, address our productivity

issues and plan for changing consumer demands. We must also guard against misleading advertisements. Digitalizing, and having a consolidated voice for the industry will be vital going forward."

CLFMA offered Mementos, to Sponsors, Government Officials, Special Invitees, Moderators, Speakers, Associations, Press, Event Management Company, etc.as a token of appreciation for their continual support as always.

Mr. Suresh Deora proposed the vote of thanks, sharing gratitude to the government representatives, speakers, sponsors, industry stakeholders, special invitees and attendees for their active participation.

The networking Dinner was enjoyed by all participants.

Overall, CLFMA interacted with various stakeholders in the industry and government on the topic Changing Dynamics of Animal Agriculture in India. The association has diverse membership from across the animal protein value chain including feed manufacturing; poultry, dairy, and aquaculture business; animal nutrition and health, veterinary services, machinery and equipment; processing, distribution, and retailing of meat. The program was well appreciated by all the participants

Press Release

World Egg Day 2022 Celebration by Mankind Pharma Ltd.

Mankind
Serving Life

On the occasion of World egg day, Mankind Pharma organized 2-day program (On 14th Oct & 15th Oct-22) including community egg distribution program to public at different parts of the country to celebrate World egg day to spread the awareness about goodness of eggs to people.

Active participation of industry persons (Vets, Farmers & distributers) made the program more informative and successful. Key focus was to explain health benefits of consuming egg, economics &to clear all misleading perceptions, myths, false propaganda, etc to common people and users.

World egg day celebration at CARI, Bareilly: Chief sponsor.
Organized Contest like egg decoration, egg eating, Rangoli, Quiz etc.




Egg Day program at Golf Course Ground at Nasik: Distributed eggs to morning walkers


Egg Day program at Dr. B. R. Ambedkar Stadium, Mau, U.P.: Egg distribution to budding players

Egg Day Program at Govt girls and boys school, Azamgarh, U.P.

Egg Day celebration in a govt school, Karnal: Organised drawing, speech competition

Egg day celebration in Hyderabad: Egg distribution in collaboration withNECC, Shadnagar poultry farmer association atBus stand premises

Vijaywada: Distributed eggs at Mother Teresa physically challenged & Orphanage home, Indira Gandhi municipal corporative stadium

Builiding a sustainable world: Avitech Nutrition CSR

Avitech
Knowledge | Nutrition | Innovation

Avitech is a firm believer in the importance of organisations in enriching the community.

The main aim of the company is to improve society since its inception. To that end, Avitech has generously committed to a variety of social causes such as educating the underprivileged, feeding the poor, and contributing to disaster relief, among others.

Avitech is committed to helping to build a more sustainable and inclusive world through their various initiatives.

InnovaFeed, an insect protein startup, raises $250 million and plans to expand.

In France, the biotech firm already runs two vertical insect farms, one in Gouzeaucourt and one in Nesle. When it first opened, InnovaFeed billed it as "the world's largest insect production site," with "unprecedented production capacity."

These facilities use black soldier fly larvae to produce proteins and oils for animal and plant feed.

A third facility is being built in collaboration with ADM to supply ingredients to its pet food division. The Illinois plant will produce 60,000 metric tonnes of protein and 20,000 tonnes of oils for pet food and livestock feed, as well as 400,000 tonnes of fertiliser. InnovaFeed intends to construct ten more such facilities by 2030.

Black soldier flies have been approved for use in dog food in the United States, and insects are permitted in pig and poultry feed in the European Union. However, the regulatory market for insect-based protein is still developing and in its early stages.

InnovaFeed's funding comes on the heels of another insect protein startup, Singapore-based Nutrition Technologies, which raised $20 million this week. Loopworm, based in India, closed a seed round last month, and Better Origin, based in the United Kingdom, received Series A funding for its insect "mini farms" earlier this year.

BASF and Evonik partner to reduce the environmental footprint of the feed and animal protein industries

BASF and Evonik agreed to grant Evonik non-exclusive licencing rights to OpteinicsTM, BASF's digital solution for increasing understanding and reducing the environmental footprint of the feed and animal protein industries. OpteinicsTM, a digital ready-to-use sustainability platform, has been integrated into Evonik's global feed consultancy services. Customers will

be able to produce more sustainable feed and animal protein by combining BASF's digital sustainability solution OpteinicsTM with Evonik's innovative farm management tools and sustainability services.

BASF launched OpteinicsTM in 2021 as a software solution to measure, analyse, and reduce the environmental impact of animal protein, with a focus on animal feed production. The software currently includes modules for pig and poultry production and can be integrated with feed formulation software.

With the help of OpteinicsTM, Evonik can help the livestock industry make significant progress in combating climate change, protecting ecosystems, and ensuring health and well-being as it strives for sustainable food production.

BASF and Evonik are already planning to expand their digital sustainability offerings in order to help the animal production sector become more sustainable.

Lallemand Animal Nutrition establishes a presence in Poland and launches a Polish website

Lallemand Animal Nutrition has opened an office in Józefów, Poland, to sell its microbial-based animal nutrition and well-being solutions, forage inoculants, and animal environment products directly. Maciej Pikniewski is the country manager for Poland, and he is supported by a growing team of ruminant, swine, and poultry solution technical, marketing, and sales experts.

"Lallemand Animal Nutrition solutions have been available in the Polish market through distributors for 15 years, but I am now proud to have such a great team in Poland." "I am delighted to have a local team to directly support our customers, their needs, and the collaborative effort of improving animal well-being and farmers' income," said Ivo Kopriva, Lallemand Animal Nutrition's Central Europe Business Area Manager.

"Poland is one of the biggest agricultural markets in Europe for all animal species. Lallemand is very strong in cattle and swine nutrition and becoming an important player in the poultry market. Looking ahead to the potential in the Polish market, I am happy to have a passionate team in Poland, and I am aware that we have lots of challenges ahead, especially in globally uncertain circumstances. A volatile market, fluctuating prices of raw materials, and war uncertainty are the main factors that affect farm profitability. With our solutions and products, farmers can minimize losses and increase the profitability of their businesses. That is what convinced me that we, as a company, are going in the right direction," Maciej Piękniewski said.

November 2022

1. **ILDEX Indonesia 2022**
   Dates: 9 - 10 November 2022
   Venue: Indonesia convention exhibition
   City: Jakarta
   Country: Indonesia
   Website: www.ildex-indonesia.com

2. **EuroTier**
   Dates: 15 - 18 November 2022
   Venue: Deutsche Messe AG
   City: Hannover
   Country: Germany
   Website: www.eurotier.com/de

December 2022

1. **Agri Livestock**
   Dates: 02 - 04 December 2022
   Venue: Myanmar Expo Hall
   City: Yangon
   Country: Myanmar
   Website: www.agrilivestock.net

January 2023

1. **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

March 2023

1. **Viv Asia 2023**
   Dates: March 8 - 10, 2023
   Venue: IMPACT
   City: Bangkok
   Country: Thailand
   Website: www.vivasia.nl

May 2023

1. **Middle East Poultry Asia 2023**
   Dates: May 1 - 3, 2023
   Venue: Riyadh International Convention and Exhibition Center
   City: Riyadh
   Country: Saudi Arabia
   Website: www.mep-expo.com

2. **Fieravicola 2023**
   Dates: May 3 - 5, 2023
   Venue: Rimini Expo Centre
   City: Rimini
   Country: Italy
   Website: www.fieravicola.com

3. **Viv Rusia 2023**
   Dates: May 30 - June 1, 2023
   Venue: Crocus Expo
   City: Krasnogorsk, Moscow
   Country: Russia
   Website: www.meatindustry.ru

July 2023

1. **Livestock Philippines 2023**
   Dates: July 5 - 7, 2023
   Venue: World Trade Center Metro Manila
   City: Pasay City
   Country: Philippines
   Website: www.livestockphilippines.com

August 2023

3. **The Poultry Expo @ The Livestock Expo**
   Dates: August, 2023
   Venue: India Expo Center & Mart
   City: Greater Noida
   Country: India
   Email: info@pixieexpomedia.com
   Website: www.pixieexpomedia.com

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

Editorial Calendar 2022

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

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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

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