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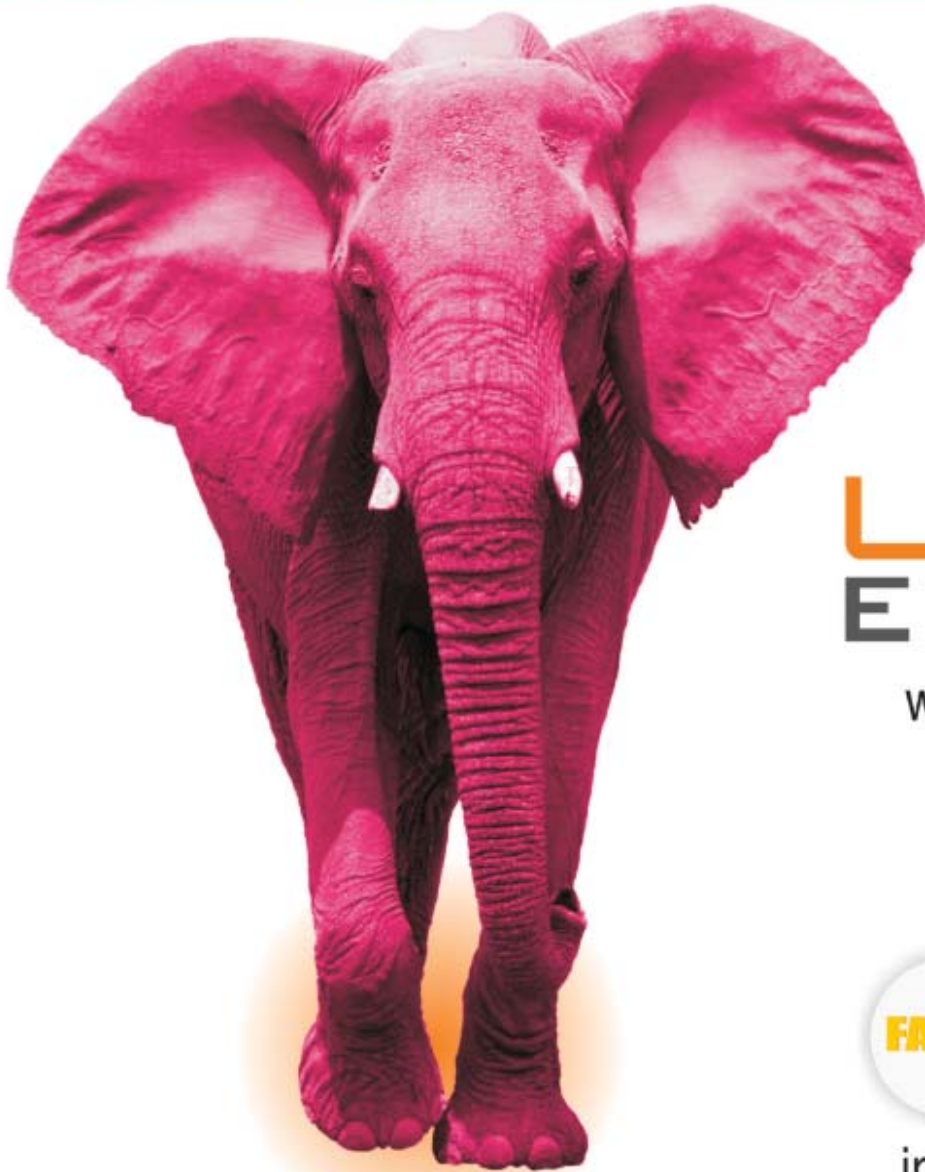
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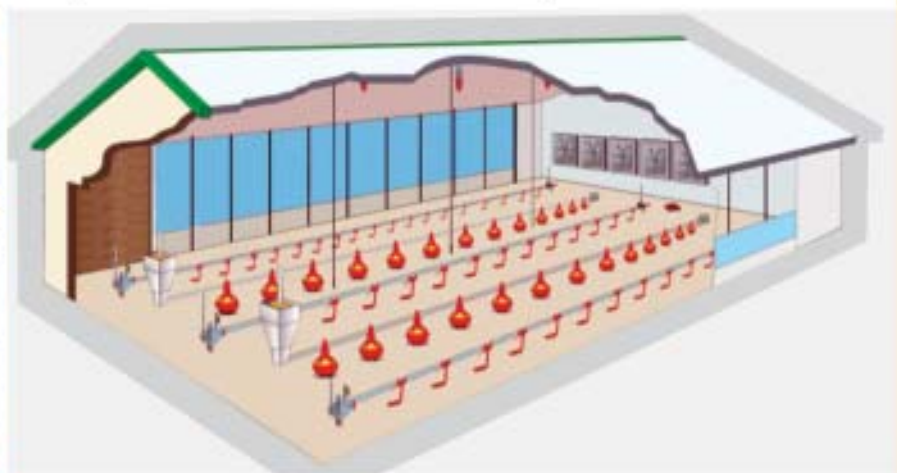
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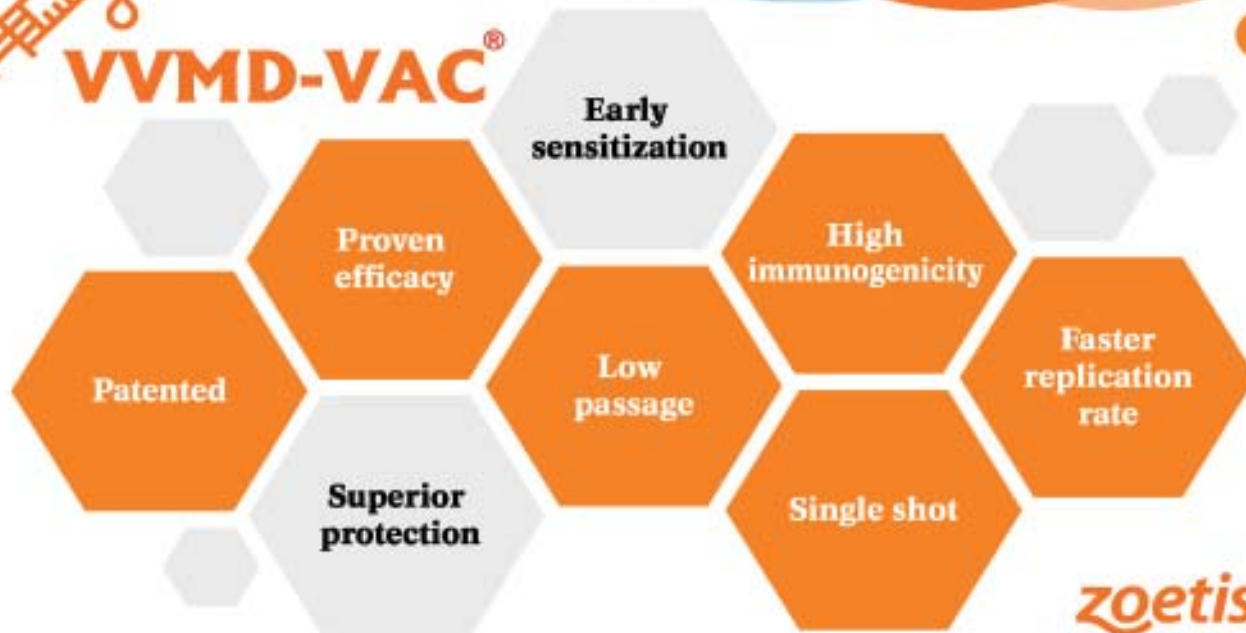
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25th Anniversary of World Egg Day 2021 - Celebrations Eggs for all - A nutrient goldmine!



World Egg Day 2021 - TV Interview

Srinivasa Farms marked the celebrations of the 25th Anniversary of World Egg Day with various activities in the public domain & multiple campaigns running across the social media platforms to create awareness about the goodness of eggs.

The celebrities, health and fitness experts egg endorsement videos have garnered an incredible amount of engagement with likes and shares by the audience on social media platforms. The proteins contained within eggs are highly important in the development of the muscles the fitness enthusiasts at the gyms have endorsed the importance of adding egg to their daily diet after their heavy workouts.

A 30km Cycle rally in Hyderabad city has created widespread awareness about the egg being a super-food for all ages, the rally received an overwhelming response with great participation by enthusiastic cyclists peddling for the humble egg.

TV shows & Interviews saw Mr. Suresh highlighting how eggs have been recognised as a protein powerhouse for many years as they contain the highest quality protein naturally available. Eggs are playing a significant role in the eradication of malnutrition around the world, thanks to their affordability combined with their nutrient density, helping to dramatically improve the health outcomes of children in nutritionally vulnerable areas. The egg offers a host of unique benefits in our diets and plays a valuable role in supporting the growing global population.

The local Radio promotions made a buzz about eggs offering a healthy and sustainable source of essential nutrients needed for all stages of life. Containing the majority of vitamins, minerals and antioxidants required



World Egg Day 2021 - Webinar Panel Discussion

by the human body, eggs are often referred to as nature's wonder food.

Eggs are the world's most versatile ingredient. The World Egg Day special cookery shows have highlighted how the eggs are a serious power ingredient in the kitchen. Many famous egg recipes have been shared making the egg the star of every meal.

The IEC Chairman, Suresh Chitturi led an insightful live webinar connecting with health experts Dr. Lakshmi Lavanya and Dr. Anvesh Reddy, who shared the knowledge and experience with participants across a variety of key and relevant contemporary topics on increasing the awareness and importance of the eggs for all ages from toddler to older adults and how egg being a great saviour by helping boost immunity during the pandemic for the corona patients. The participation was highly engaging and interactive with the audience getting to know many important facts about the egg from the expert panel. Suresh's presentation highlighted the importance of increase in egg consumption, and how egg plays an important role in preventing malnutrition, stunting and other growth issues in children. He also emphasised how egg plays an important role in the diet from toddlers to the older adults. Worldwide Egg production provides jobs to millions of people and helps in generating income thereby reducing poverty.

The live webinar also hosted an exciting and fulfilled Egg Quiz. The participation was overwhelming from the egg enthusiasts across pan India that tested the knowledge, dispelled some of the top myths, and uncovered the real facts on the nutrition and incredible protein food, the eggs. The top quiz winners were presented with gift vouchers.

World Egg Day 2021 - Celebrations



Celebrity Endorsement



Health Expert Endorsement



Cycle rally



World Egg Day 2021 - Cycle rally



Fitness



Fitness



World Egg Day 2021 Webinar participants



World Egg Day 2021 - Quiz Contest

MANAGEMENT OF POULTRY DURING WINTER

In India, the winter season follows the rainy season and can be marked with cold weather. Winter season in India lasts between November to February. Northern India experiences the most severe cold season, where environment temperatures can drop below 15°C with nighttime temperatures as low as 5°C. Southern India usually experiences milder winter weather and low temperatures are not a major concern. Winter season brings unique challenges for brooding chicks. Cooler environmental temperatures can affect nutrition programs because of the bird's higher energy requirement to maintain body temperature. The effects of decreasing photoperiod and light intensity during the winter can affect sexual maturity, resulting in delays in egg production. Poor air quality can occur as farmers close curtains to maintain house temperature. Cool air slows down the drying of manure, leading to increased ammonia levels within the shed and can increase the fly menace. Poor air quality and cooler temperatures can increase the disease threat during the winter season.

Table 1. Weather Conditions in Different Regions of India during Winter

| December Month Average | North India (New Delhi) | Central India (Mumbai) | South India (Hyderabad) |
|-----------------------------------|-------------------------|------------------------|-------------------------|
| Maximum temperature °C | 23°C | 32°C | 28°C |
| Minimum temperature °C | 9°C | 19°C | 15°C |
| Average humidity % | 62% | 58% | 57% |
| Average hours of sunshine per day | 7 hours | 8 hours | 8.5 hours |
| Management attention | High priority | Medium priority | Low priority |

Source: <https://www.currentresults.com/Weather/India/temperature-december.php>

The following intervention strategies should be considered during winter season:

Brooding and Growing Management:

1. Chick brooding requires special attention during winter. Brooding shed arrangements should be ready before 48 hours of chick placement. This is important because it will take a longer time to preheat the chick's environment during the winter season. Ensure the shed and equipment is heated to 35°C environmental temperature. Relative humidity should be maintained between 40–60%.
2. Be aware of low nighttime temperatures during the winter season. Cold stress usually occurs during the night and early morning. Maintaining proper chick brooding temperatures throughout the night can be challenging in the winter season. This is especially difficult for farmers using charcoal heaters or other sources of heat without thermostatic control. Thermostatic control of brooding shed temperatures is highly recommended to avoid cold stress during the night time. Low nighttime temperatures can chill chicks, which can impair their growth and organ development. Cold stressed chicks are more susceptible to infectious diseases. Use a thermometer that is capable of recording nighttime temperatures in the brooding shed.



Figure 1. Brooding management.

3. Frequently observe the activity of chicks and adjust temperatures to the comfort of the chicks. Chicks should be distributed evenly inside the cage. Under cold stress the chicks are huddled in groups, not eating and drinking and with less activity. For more information on W-80 brooding management, refer to the "Growing Management of Commercial Pullets" technical update at www.hyline.com.
4. An infant ear thermometer can be used to measure the vent temperature of chicks. This gives a good indication of the comfort of the chicks and correlates well with the chick's core body temperature. The normal vent temperature in chicks should be 39.4–40.5°C.

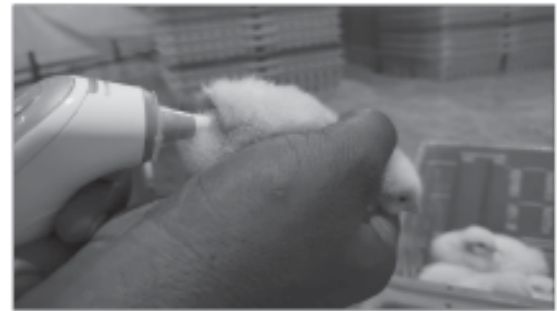


Figure 2. Monitoring chick temperature using an infant ear thermometer.

5. During the brooding period, place starter crumble feed on the cage paper for first 3 days to encourage feed consumption. Cage paper blocks cold drafts of air. For infrared beak treated (IRBT) chicks, place starter crumble on the cage paper for first 7 days. Checking chicks for the presence of feed in the crop helps understand feed consumption. The presence of feed in the crop is a good indication of a proper chick start (see Figure 3).
6. During peak winter where environment temperature drops below 10°C, the drinking water temperature drops close to freezing. Drinking water temperature has a direct effect on the bird's feed and water consumption and slows body weight gains in growing chicks. Poor water consumption can also increase mortality related to dehydration and gout. The ideal water temperature to maintain good feed intake is 18–21°C.

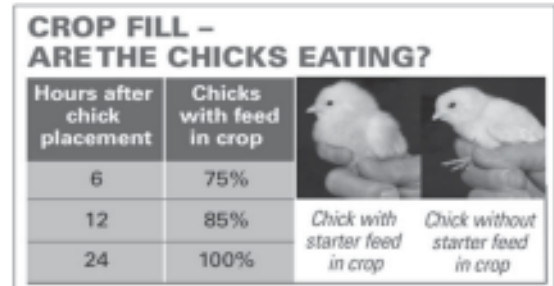


Figure 3. Desired crop fill percentages.

7. The shortest daylength of the year falls on December 21st. The shortest daylength in India ranges from 10–11 hours, with North India having the shortest among all regions (see Table 1). The ideal hours of light during the rearing period for the W-80 is 11–12 hours. Rearing lighting hours need to be maintained at recommended levels for pullets in order to achieve ideal body weight gain and sexual maturity. This will be done by following the Hy-Line International / Srinivasa Farms Lighting Program Generator. This is an Excel tool which creates lighting programs appropriate for the farm location and shed style (open or EC shed). These customized lighting programs can be provided to commercial customers with their chick placements. For further information, see <https://www.hyline.com/ViewFile?id=d14081e1-8af8-49f1-a752-71720d4b5680> or contact Srinivasa Farms' technical service team or Hy-Line India's technical service team.
8. Provide adequate ventilation in brooding house for 24 hours in the winter. Do not close the brooding area too tightly while maintaining brooding temperatures during the winter. Always provide a continuous supply of fresh air to the birds by maintaining some opening of the curtains. The minimum ventilation rate during the winter must be sufficient to remove moisture and prevent the build-up of noxious gases in the brooding area. Ammonia greater than 25 ppm is harmful to chicks and can promote respiratory disease outbreaks. Coal heaters are commonly used in India as a heat source in brooding sheds and they produce large amounts of carbon dioxide (CO₂), carbon monoxide (CO), and other undesirable gases inside the house. It is recommended to have a minimum opening (one foot) at the top level of the curtains to provide minimum ventilation even during nighttime. During the middle of the day, the side curtains can be adjusted according to temperature and chick comfort.
9. Allowable levels of gases at the bird level in the shed are: ammonia (NH₃) <25 ppm; carbon dioxide (CO₂) <5000 ppm; carbon monoxide (CO) <50 ppm.
10. Bird transfers from brooding to rearing sheds and rearing laying sheds should be completed no later than 7 weeks and 16 weeks, respectively. Timely transfers give the birds enough space to continue proper growth and development and enough time to adjust to the new environment. During the peak winter season, schedule transfers to occur during mid-day when the temperature is more comfortable for the birds.

Layer Management:

1. Feed intake is generally higher in winter months as a result of increased demand for energy to maintain body temperature. Protein and amino acids should be balanced based on the actual flock feed consumption. Overconsumption of energy, protein and amino acids beyond the recommended level can lead to deposition of extra fat which predisposes bird to fatty liver / hemorrhagic syndrome (FLHS), as well as increases egg weight. Energy requirements tend to be slightly higher during winter, so it is important not to decrease the energy levels at the same proportion of the feed intake increase. See the W-80 flock book provided by Srinivasa Farms for the nutritional recommendations of the W-80.
2. Increased feed intakes during winter could lead to increased egg weights. Overconsumption of energy, methionine + cystine, other digestible amino acids, linoleic acid, and total fat can directly increase egg size. Egg weights should be monitored every week during winter and appropriate adjustments to the diet made to control egg weight.
3. Stone grit management may help in controlling feed intake and maintains eggshell quality if egg weights increase. Vitamin D supplementation during winter may be needed due to poor brightness of sunlight. Follow the W-80 recommended levels of vitamin D3 (3,300,000 IU per ton of feed – Rearing and laying phases).
4. Decreasing the feed particle size of less than 700 microns and including fibrous ingredients to the feed formulation is the best way to control feed intake.
5. In addition to shorter daylength, foggy conditions with lower light intensity are common in winter. Average hours of sunshine are less during winter months (November to February). North India records the lowest hours of sunshine compared to other regions (see Table 1). Increased use of curtains during the winter to protect birds from cold stress blocks sunlight and further reduces the light intensity inside the shed. With lower brightness inside the shed, it is good practice to use the house lights to maintain recommended light intensity (30 lux) inside the layer shed.
6. Keep light intensity optimum by cleaning dirty bulbs and replacing faulty bulbs. This work should be done before the arrival of winter.
7. Adult laying birds are also susceptible to cold stress. In open-sided laying houses, it is recommended to use side curtains to protect birds from direct exposure to cold stress. The side curtains are managed in such a way to protect birds from cold stress as well as to provide minimum ventilation to remove excess ammonia buildup. Curtains should be allowed minimum opening (one feet) at the top level of the shed even during nighttime, and during the middle of the day, partial opening at the side can be practiced based on bird comfort (see Figure 4).
8. Decreasing day length during the winter may delay pullets from coming into egg production. Timely shifting of the flock to the laying shed and on-time light stimulation at the correct body weight (1100g with 85% uniformity) prevents a delayed start of egg production. A timely transition from the developer or pre-lay diets to the peaking diet ensures that egg production begins properly, avoiding egg production delays.
9. Cold air slows down the drying of manure and removal of moisture from the shed. This can cause excess ammonia gas build-up in laying sheds in the winter. High ammonia is also caused by nipple leakage and lack of ventilation due to closed side curtains. This problem will be more pronounced in farms where the height of the manure is close to bird level. Remove manure and replace faulty nipples prior onset of winter to avoid conditions of high ammonia.



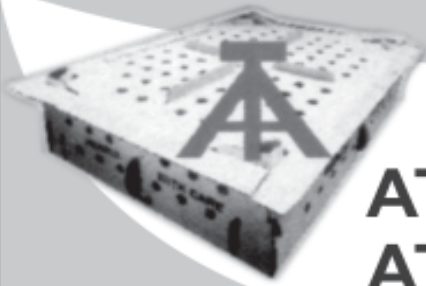
Figure 4. Lowering the curtain at the top creates better ventilation.

10. Cold weather and reduced air quality favors multiplication of pathogens, especially respiratory pathogens. Incidences of avian influenza, Newcastle disease, Gumboro (IBD), fowl pox, colibacillosis (E. coli), infectious coryza, gangrenous dermatitis, salmonellosis, and coccidiosis are more common in winter. Following good winter management with good biosecurity and timely vaccinations to control disease outbreaks.
11. Vaccinations should be carried out in the daytime during peak winter (December and January) when the temperature is ideal. In case of water vaccination, water holding time before vaccination should be increased from 30 minutes to 1 hour since water consumption is normally lower during winter. Water volume used for water vaccination should be matched with actual water consumption.

Management Chart:

| Management Practices | North India Farms | Central India Farms | South India Farms |
|----------------------|-------------------|---------------------|-------------------|
| Brooding management | High attention | Medium attention | Medium attention |
| Water management | High attention | Medium attention | Low attention |
| Feed management | High attention | Medium attention | Medium attention |
| Lighting program | High attention | Medium attention | Low attention |
| Ventilation | High attention | Medium attention | Low attention |
| Manure management | High attention | Medium attention | Medium attention |
| Disease control | High attention | High attention | High attention |
| Bird transfer | High attention | Medium attention | Medium attention |

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Organic Poultry Production

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Organic poultry is rearing of birds without cages, outdoor access, organic feed with natural treatments. FAO defines organic farming as “a unique production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity and this is accomplished by using on farm agronomic, biological and mechanical methods in exclusion of all synthetic off farm inputs.”

Poultry sector has a remarkable role in improving the socio-economic condition of rural population by generating employment and supplementing family income, particularly among the landless labourers, small and marginal farmers and women in rural areas. India ranks 3rd largest producer of eggs (after china & USA) & 5th largest producer of broiler in the world (after USA, China, Brazil and Mexico). Food quality and safety are two crucial factors that have attained constant attention in common people.

There has been an increased health concern over quality of milk, meat and egg products due to the presence of various insecticide, pesticides, chemicals, drugs and hormone residues. Due to this organic livestock farming is increasing at rapid rate worldwide with faster growth in demand of organic milk, meat and eggs products. Organic

livestock farming is most suitable to our Indian conditions because of indigenous technical knowledge and practices followed by Indian farmers. Increased consumer perception towards food safety issues and environmental concerns has provided growth to organic farming over the last few years, although it only represented around 3 per cent of the total agricultural area. Further, as purchasing power of common people is increasing constantly, they are interested to eat safer product without bothering to pay extra.

In order to make organic livestock farming a success, there are certain points that need to take care of, like reducing the paper work and cost for certification; sourcing of organic inputs like feeds and fodder, disease prevention, cost of production and maintaining animal health etc.

General Considerations in Organic Farming

1. The choice of breed, strain shall be consistent with the principles of organic farming that is their adaptation to the local climatic conditions, the socio-economic conditions, vitality and resistance to the disease.
2. The producers shall follow an all-in-all-out system of rearing and different age group of birds, species, breed, strain should be avoided.
3. Cage rearing is not permitted (Anne Fanatico, 2008).
4. Mixed farming of poultry shall not permit in the organic broiler production.
5. Brought-in birds which may be grown on the organic farm from day two onwards. The day one considers as hatch at the hatchery.



6. Genetically modified or genetically engineered breeds or stains should not be used for organic production because of the gain higher body weight at a lower mean age which is against to the natural physiology.
7. Organic poultry must have access to the pasture or outdoor as seasonally appropriate.
8. Broilers are hatched from the hatcheries which are from organic parents or offspring can be raised as organic.
9. Transfer of birds between organic and non-organic units may not be permitted.

Present status and possibilities

In last 4-5 decades, therevolutionarychanges in poultry industry itself is a matter of pride. In 1957, the white egg layer used to produce 210- 220 eggs with the efficiency of 3.4- 3.5 kg feed against 290-300 eggs with 2.5-2.6 kg feed per kg egg at present. 55 years back, 6 wks broiler weight was 0.8 kg and 3.2 kg feed was required to produce 1 kg body weight, where as today at 6 wks, 1.8 kg body weight is attained with feed efficiency of 1.9 kg.

Due to increased health awareness and consumer preference, organic farming increased day by day throughout the world from last one decade. The organic meat sector has increased rapidly in the western countries and is expected to increase further in future. Chicken meat is the most predominant organic meat due to its short production cycle & low cost as compared to other livestock meat. As India has a good resource there may be a vast scope for production of organic farming in export market.India exports organic agriculture products of plant origin, but has little contribution into the organic poultry sector. The poultry population in India is enough and a small shift from current conventional methods of poultry farming into organic poultry farming can create a big market for domestic use as well as export. This would contribute ultimately to the nation economy, improve the health of the consumers and would create a balanced ecology.

Poultry breeding

Breed should be chosen which are adaptable to local condition. Few breeds/ strains are suitable for organic poultry farming among large no. of poultry breeds/ strains. Local breeds or breeds developed with organic &free range system may be used for organic poultry farming. Breeds/ strains reared in intensive production and have some specific should be avoided from breeding purpose. Breeding should not be against poultry behavior and should be towards good health. Reproduction technique should be natural. Artificial insemination is allowed only upon veterinary necessity (Chander et al., 2006). Hormonal treatment due to the increased health awareness, for more egg production and growth should be prohibited.

Breeds & varieties

Indigenous breeds: Kadaknath ,Nicobarifowls, Aseel

Developed varieties: Vanaraja, Krishibro, Gramapriya, Giriraja, Vanaraja, Gramapriya, CARI-Gold, Swarnadhara, Hitcari, Upcari, CARI-Shyama, CARINirbheek, Rajashree.

Poultry housing and management

Housing and management standards are able to provide an opportunity for poultry bird to exhibit all its normal behavior patterns. A poultry house should have easy access to the main road. House should be well ventilated, solid walls and only raised 3ft. high from ground and chicken wire fitted up to the roping base to avoid direct wind draughts into poultry house. For organic poultry production birds should not be caged and reared under deep litter system. Debeaking and beak trimming are usually banned but some certifying agencies still allow debeaking if done more than 5mm of the upper beak should not be removed (Chander et al., 2006).

Maximum natural light should be provided in poultry house. Some open area with plant and grasses which provide the green forage to the birds should be developed near to poultry house. Green forage enhance the yellow egg yolk quality in the birds and

running during foraging in lawn area helps in controlling external parasites as well as acting as natural disinfectant for pathogens/ germs. A adult laying bird in organic system should be provided with 2ft/ bird in the confined and 3ft/ bird as foraging area i.e. 5 sq.ft./ bird. Remove wet and caked litter all the time. Sufficient feeding space (4-5 cm/ bird) and watering space (3-4 cm/ bird) should be provided to the birds.

Chicken behavior: For the normal behavior of bird, there should be proper space for wing flapping stretching and area for sand, dust and sun bathing. Sand and dust bathing are important to maintain proper hygiene and helps in removal of external parasite (Lampkin, 1997). There should be one cock for about 4-6 hens in flock like in wild birds. Major problem in poultry is pecking and cannibalism. Pecking and scratching are the part of normal feeding behavior and their housing system needs to provide appropriate space for these activities (Lampkin, 1997). Larger groups are unstable group and create a risk of serious pecking problems, so in such larger flock, subgroups should be formed.

Feeding: Birds should be given 100% organically grown good quality feed. All ingredients must be certified as organic, except vitamin and mineral supplements making up to 5 % of the diet. Not more than 20% feed should come from non-organic feed.

Organically produced concentrated balanced feed ration should be given. The largest component of any organic poultry diet is cereal (maize) and high quality roughages, particularly legumes can be added to the diet.



Home grown protein sources like beans, peas and rapeseed can also be supplemented. Since

sprouted pulses are a good source of vitamins so they can be used to replace synthetic amino acids. Limestone and rock phosphate in general and particularly for layers can be included as mineral source. Trace minerals incorporated in the diets should be organic or ayurvedic in nature. The quota of essential amino acids can be met through feeding organic soybean, skim milk powder, potato protein, maize gluten etc. Organically reared birds need 20-50% more feed per unit of weight gain than conventional reared birds, mainly because of increased activity in the run. Scattering grain & providing roughages is a good way of keeping the hens busy and healthy. The average feed consumption in organic production for layer and broiler are 130 gm and 85 gm respectively, which is 118 gm and 77 gm in conventional production system. In organic poultry production, birds should be reared only for one laying season.

A continuous access and ample supply of drinking standard quality water free from residues should be assured. Water should be regularly tested for ground water contamination.

Health Care: To maintain the flock healthy all the management practices should be followed. It provides the prevention to many diseases and increases the resistant towards some disease and provides a healthy environment. Use of antibiotics in any form for prevention or increase the productivity is not allowed in the organic production (Fanatico, 2009). Vaccination is allowed as per certain rules are given by organic farming committee (Anne Fanatico, 2008) that is when a disease is known or expected and endemic in the region where the farm is located and those diseases cannot be prevented by management. Cleanliness of the farm is the best form of defense in disease management. Alternative to the antibiotics are homeopathy, probiotics, herbs, hydrogen peroxide, vinegar in water, organic turmeric added to feed to increase the health of birds. Unavoidable conditions like high mortality in flock or disease outbreak farmer can use of antibiotics with the proper advice from the

registered veterinarian. But the antibiotic withdrawal time for meat is double the official conventional withdrawal time. Biosecurity of the farm is important to step to prevent the transfer of disease. Conceptual, operational and structural biosecurity should be followed in organic farms.

Record Keeping: Maintenance of records is used to preserve the identity of birds flock and also organic farming activities (Jim Riddle, 2013). Record keeping with respect to the overall management practices is the most important factor. It should be systematic documentation of activities, observations and inferences from time to time for future reference. Records include breeding records, registers indicating source of animals purchase, source of organic feed ingredients, feed supplements and feed additives purchased, organic poultry pasture record, organic feed formulation record, inventory of health care products, sanitation products, monthly flock records of organic egg layers, organic meat poultry, organic poultry slaughter/sales summary and monthly organic egg packing /sales record.

Constraints for organic poultry farming in India

- Lack of in-depth knowledge of farmers about organic poultry farming and hurdle in at the production and marketing level.
- Inadequate supporting structure, inadequate available certifying agencies and lack of marketing channels (Biradar, 2011).

- Strict measures followed mainly sanitary conditions, quality and traceability in developed countries is an obstacle for small and marginal Indian poultry farmers to enter into export of organic products.
- Inadequate Training facilities for poultry farmers.

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Commercial Poultry Management During Rainy Season

by Dr. Akshay Mote, Dr. Sunil Nadgauda & Dr. Sandeep Gavali



The Indian poultry sector is one of the most vibrant, fastest growing, agro-based, techno-commercial industry. There are several constraints affecting growth of the poultry industry, among which temperature associated environmental challenges (hot and cold climate, heavy rainfall) imposes severe stress on birds and leads to reduced performance. Thermal discomfort may result in improper expression of genetic potential in birds (Kataria et al., 2008) and production performance of broiler chicken are greatly affected due to adverse environmental conditions. At present, climatic variation is a key threat for poultry industry, especially for marginal poultry farmers in open-house systems (Osti et al., 2017).

In India during rainy season there is increase in the relative humidity and a reduction in temperature; rainfall affects both the quality and quantity of feeding, while wind speed has an impact on the outbreak of diseases.

With the arrival of monsoon, farmer needs to give a little bit more attention towards his crops along with the livestock and poultry. Monsoon comes as a challenging season for poultry farmers which could be very tormenting. As rainy and cold season brings changes in temperature and weather conditions, it leaves a deep impact on the poultry farm. Hence, as a poultry farmer, it is very important to learn how to operate poultry farm during rainy season.

Poultry birds and poultry production are generally affected by seasonal climatic or weather changes. For instance, in the wet or cold season bird eat more feed, drink less water and huddle together to generate heat and keep them warm. On the other hand, chickens and other livestock birds consume less feed and drink more water in the hot season or weather in order to cool their body. These changes affect the production of birds, especially laying birds, as the egg production is reduced in extremely cold or hot weather. This reduction in egg production occurs because when there are extreme cold or hot conditions, these birds are stressed,

and their ability to withstand diseases or immune system is seriously affected.

Managemental Practices During Rainy Season

- It is always better to repair the poultry sheds before the arrival of the rainy season and clear the drainage ditch around the shed.
- When it rains, close the doors and windows or let the curtains close to prevent rain from entering the shed thereby helps to prevent the chickens from getting cold or other problems.
- Poultry farmer should reserve enough dry litter material. Regular raking of the litter material helps to keep it dry. The wet agglomerated litter material should be removed out of the shed to reduce the ammonia concentration in the house.
- Prevent the feed ingredients from getting wet, and the amount of feed should not be too much. The compound feed in the house should be placed on the platform above the ground to prevent the feed from regaining moisture and mildew.
- In rainy season, the humidity in the poultry shed is increased and also there are more chances that litter get wet, feed is mildewed, and sometimes water get contaminated with pathogens which may lead to coccidiosis, E. coli outbreak, and elevated ammonia concentration.
- Birds usually increase their level of feed intake to generate heat and stay warm during rainy season. However, for a farmer increasing the level of feed raises the cost of production besides wastage of nutrients that are not needed for heat generation. To reduce costs and avoid wastage, energy rich sources like oil should be added to the feed or level of other nutrients may be reduced keeping the energy at same level.
- Provide warm water periodically during rainy season to encourage feed consumption and



help them keep warm without using up energy.

- Poultry shed should be designed in such a way that it provides all the comfort required by birds during rainy season while considering ventilation as well.
- In regions where it rains heavily, the floor should be raised with a generous roof overhang, particularly over the entrance.
- The raised floor can be a solid platform to prevent floods. Orientation of a building with respect to wind and sun consequently influence temperature and light on different external surfaces. With better management, your flock will remain healthy and productive throughout the rainy season.
- During rainy season birds need to be warm, especially chicks that haven't been able to

control their body temperature.

- In rainy season, the water can cause trouble in bird's health as the water from the rain might bring many worms and parasites. So, during rainy season it is important to give dewormers to avoid infection from intestinal worms.
- Rainy season leads to the immunosuppression, and birds can get easily infected by bacteria and viruses.
- Mosquitoes and other blood-sucking insects that multiply well during this season, thus can increase the possibility of transmitting viruses to chicken.
- Instead of waiting your birds to get sick and treat them, you can avoid the disease outbreak by vaccinating before monsoon.

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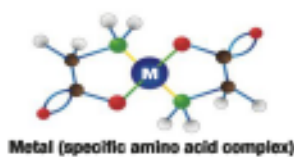
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WEBINAR
ON

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Nutritional Strategies to Improve Broiler Performance during the First Week

&

GUT HEALTH - The Key to Overall Health & Performance

The webinar was started by **Mr. Sumit Sipany**, Product & Marketing Executive – ABTL by welcoming all the participants & speakers on board & giving a brief introduction about the company ABTL.

ABOUT ADVANCED BIO-AGRO TECH LIMITED (ABTL)

- Advanced Bio-Agro Tech Ltd (ABTL) is a nutrition and enzyme technology company offering pioneering products and technical services to the global animal feed industry.
- We are one of the largest enzyme manufacturing company in India and South-East Asia.
- Feed is an integral part of the food chain, and its safety has been recognized as a shared value and a shared responsibility.
- ABTL being a nutrition and fermentation technology company aims to bring a broader knowledge base to the global feed industry through close collaboration with customers and academics, identifying new and exciting opportunities for improved feed and animal performance.
- ABTL Managing Director **Mr. O. P. Singh** Sir always aims for providing an innovative solution, offering a broad product portfolio to help our customers turn challenges into high value business opportunities.



Being a moderator, **Mr. Sumit Sipany** has given an introduction for the first speaker **Dr. Ariel B. Carlos**, Animal Nutritionist from Philippines.

Dr. Ariel B. Carlos is an Animal Nutritionist & a Livestock Consultant having 36+ years of experience & serving in Philippines & Bangladesh market. He gives his consultancy to more than 25 commercial feed mills & farms.

Dr. Ariel B. Carlos started his presentation on the topic - **Nutritional Strategies to Improve Broiler Performance during the First Week.**



During his presentation he covered the following: Challenges the newly hatched chick must deal with, Importance of Feed intake in young chicks, Benefits & Issues raised with In-Ovo feeding, Development of key digestive organs, what amino acid levels should be used for the young chick, Consider the use of some specific feed additives like – Probiotics, Enzymes, Bioavailable protein etc.



Some of the questions raised during the webinar:

Q. Is there any significance of exogenous lipase enzyme during first week or in pre-starter feed to improve digestibility of fat?

A. Based on the data from the paper quoted (Ravindran, 2019) lipase activity during the 1st week was not limiting. What the authors were saying was that there were insufficient amounts of bile secretion for adequate emulsification. However, I believe exogenous lipase may help if exogenous fat/oil is added in the diet during the 1st week. This is evidenced by the very low lipase secretion during the 1st to 3 days of the chick's life.

Q. Which probiotics are better, single strain, or multi-strain?

A. I have seen good results using probiotics with both a single strain (mainly *Bacillus subtilis* spp) and multi-strains. Several factors aside from the strain of microorganisms can affect the efficacy of the probiotic preparation. Some of these would include:

- i Differences in microbial species or strains used
- ii Probiotic preparation method
- iii Survival of the colonizing micro-organisms to the GIT conditions
- iv Environmental conditions of the birds
- v Application time & route of the probiotic
- vi Immunological status of the birds
- vii Genetics
- viii Age
- ix Use of antibiotics
- x Feed processing

Q. Can we use Water soluble probiotics in chlorinated water?

A. Chlorine is use as a disinfectant in water. Chlorinated water should be avoided when feeding probiotics via

the drinking water. Chlorine will non-selectively kill both harmful and beneficial microorganisms.

Q. Is there any significance of hydrolysed protein or bioactive peptide during early life of chicks?

A. The use of hydrolysed proteins and/or bioactive peptides during the first few days of the chick's life may be very good sources of highly digestible proteins and amino acids. There is no doubt both products will improve digestibility of the protein source significantly which will lead to a better start for the chicks. But the question is the practicality of using these high-priced ingredients. Maybe the nutritionist and owner should evaluate the use of these products on a cost-benefit basis first.



Further moving ahead, **Mr. Sumit Sipany** introduced the second speaker **Dr. Jayaraman**, Poultry Consultant from Coimbatore in the ongoing webinar.

Dr. Jayaraman is a well-known popular face in poultry industry, having 30+ years of experience with serving in South East & Middle East Asian Countries. **Dr. Jayaraman** is having a vast experience in various fields which includes Broiler, Breeder, Layer, Hatchery, Integration etc. He has also received National award on Best Veterinarian Service from Indian Poultry Journalist Association in 2006, at Pune.

Dr. Jayaraman started his presentation on the topic - **GUT HEALTH – The Key to Overall Health & Performance.**

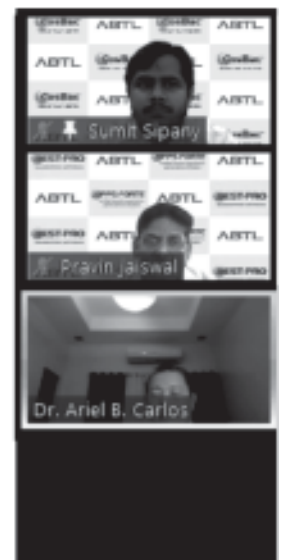
During his presentation he covered the following: Gastro Intestinal Tract, Challenges to Gastro Intestinal Tract, Intestinal Health Management, Effect of Heat Stress on the Gut Health of Poultry, Effects of Dietary Fiber on Nutrient Utilization, Viral Enteritis in Poultry etc.

Impact of higher levels of digestible AA levels on GIT development and growth in young chicks

- Both the GIT and microflora have high demands for proteins & amino acids.
- The gut responds to a high protein diet.
- In terms of growth, there is a carry-over effect of early chick growth on harvest weight.

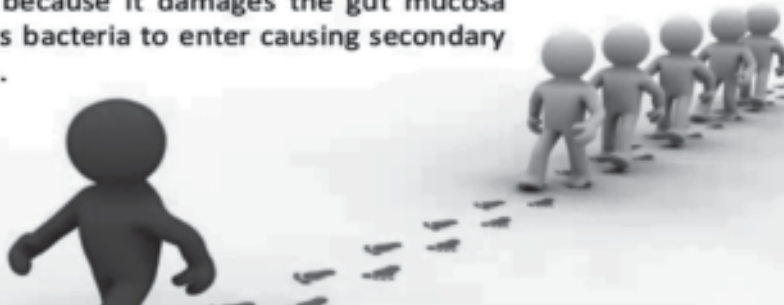
| Dig. Lys (g/kg) | Pancreas (g) | Protease Secretion (mg/g min) | S. Intestine (cm) | BWt @10 days (g) | BWt @39 days (g) | F C R @ 39 days |
|-------------------|-------------------|-------------------------------|-------------------|------------------|-------------------|-----------------|
| 11.9 ^a | 0.97 ^b | 139 ^b | 101 ^b | 157 ^c | 1956 ^b | 1.80 |
| 12.8 | 1.02 ^b | 147 ^{ab} | 103 ^{ab} | 169 ^b | 1985 ^b | 1.79 |
| 13.7 | 1.16 ^a | 160 ^a | 107 ^a | 190 ^a | 2094 ^a | 1.74 |

(Ivanovich et al., 2017)

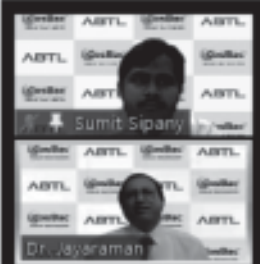


Coccidia ... Does Not Come Alone

Coccidiosis goes hand-in-hand with other gut diseases, because it damages the gut mucosa and allows bacteria to enter causing secondary infections.



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Some of the questions raised during the webinar:

- Q.** Does poor Gut Health affects egg shell quality?
- A.** The Calcium carbonate which is vital for egg shell formation is getting transported via intestine only. When gut health is hampered , the calcium carbonate absorption also is hampered & hence the egg shell quality is being affected.
- Q.** What is the correlation between Immunity and Gut Health ?
- A.** The Gut has largest presence of Lymphoid organ namely Gut Associated Lymphoid Tissue(GALT). When Gut Health is compromised the immune response to various pathogens will be compromised & that is why it is stated that better Gut Health is necessary for better immunity.
- Q.** Could you explain how to differentiate Necrotic Enteritis and Coccidiosis as it seems very confusing ?
- A.** In case of coccidiosis , the litter droppings will have reddish tinge fecal droppings . In case of necrotic enteritis, the dropping will be more of orange colour . while at post mortem , the breast muscle will be pale in case of coccidiosis and in necrotic enteritis it is dark red in colour.
- Q.** Why Gut Health issues are high during monsoon season? And how to handle it ?
- A.** In general, during monsoon season the humidity will be high. The stress the birds undergo , will be high because birds can't dissipate heat during high humidity time; so, there will be spurt in clostridial population . more so it complicated by presence of more challenges of

coccidiosis. In this season litter moisture is high which leads to high cocci challenge which in turn leads to necrotic enteritis .

- Q.** How to handle Non-specific Enteritis?
- A.** For non-specific enteritis, it is advisable to use probiotics either in feed or in water . Many times, the balance of gut microbiota gets disturbed, and it leads to enteritis . Additional supplementation of probiotics restores the balance of gut microbiota and brings down the enteritis.



The Question and Answer round was proceeded by **Mr. Pravin Jaiswal**, AVP Sales and Technical – ABTL as per the queried received in the chat box from the participants to both the speakers **Dr. Ariel B. Carlos & Dr. Jayaraman**, which helps the participants in making the topics clearer.

Dr. Yogesh Jadhav, Export Manager-ABTL concluded the webinar with his warm regards & vote of thanks to all panelists, speakers & the wonderful participants and concluded the webinar by saying that, this session might have added value to our current understanding of the subject.



Thank You once again!!

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ABTL took an initiative & organized an awareness activity at Maher Ashram in Pune. On the special occasion of World Egg Day, Team ABTL went to Maher Ashram & celebrated the World Egg Day along with the children & the staff present there by distributing eggs and the pamphlets - showing the benefits of egg, also educated them the importance of having an egg in their diet.

Mr. Sumit Sipany

Dr. Yogesh Jadhav



★ Glimpse from the 25 Years of World Egg Day Celebration

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CLFMA OF INDIA's 54th AGM 62nd National Symposium 2021



The Compound Livestock Feed Manufacturers of India (CLFMA) conducted its 54th Annual General Meeting and 62nd National Symposium in Hyderabad on 24th and 25th September 2021 at Hotel Taj Deccan. The theme of the event was **'Feeding The Growing Livestock Population: Current And Future Challenges'** that was very relevant considering the recent surge in prices of soymeal, which is an important component of the animal feed.

The event was graced by the presence of Hon'ble Minister of Fisheries, Animal Husbandry & Dairying,

Shri. Parshottam Rupala as a Chief Guest along with various other eminent policymakers and industry leaders. The event received an overwhelming response from the audience and witnessed the presence of more than 300 delegates from various parts of India.

The inaugural event started with the lamp lighting ceremony.

Opening the event, Mr. Vijay D. Bhandare, Convenor, CLFMA presented the welcome note, followed by the address by Mr. Divya Kumar Gulati, Deputy Chairman, CLFMA. Both the presenters





thanked the policymakers for allowing the import of Soybean meal when the industry was facing a crisis of increased production cost. Afterwards the Guest of Honour, Hon'ble Minister of Animal Husbandry, Dairying and Fisheries, Telangana; Shri Talasani Srinivas Yadav addressed the audience and said that livestock sector plays an important role in the state's economy and improvement in production can only happen with proper supply of nutrients from animal feed. He assured the industry for all possible government's support for benefiting the livestock producers. This was followed by CLFMA Chairman's Mr. Neeraj Kumar Srivastava's speech; he spoke about increasing human population and importance of livestock products in meeting protein demand while also highlighting the need of protecting the environment. Mr. Vivek Deshpande, CMD of Rudrani infrastructure Ltd., talked about importance of livestock industry and role of CLFMA in augmenting the industry welfare and livestock sector. Thereafter, Hon'ble Member of Parliament (Lok Sabha), Telangana, Dr. Ranjeeth



Reddy spoke about the challenges specific to poultry farmers and urged the policymakers to give equal importance to the sector as Dairying and Fisheries while making policies. Mr. B.B. Patil, Hon'ble Member of Parliament, (Lok Sabha), Zahirabad also spoke about the importance of the livestock industry in augmenting farmer's income. Dr. O.P. Chaudhary, Joint Secretary (NLM/PC), Dept. Animal Husbandry & Dairying said that the government is committed to support the livestock industry including poultry and cited the recent Govt. Permission for soybean meal import at the time of crisis, he also said that there's a provision for poultry entrepreneurs as well in the Animal Husbandry Infrastructure Fund of worth 15,000 Crores INR to boost the poultry production in India.

In his long-awaited speech, Hon'ble Minister of Fisheries, Animal Husbandry & Dairying, Shri. Parshottam Rupala emphasized upon the importance of the livestock sector in doubling the farmer's income in accordance with the PM's vision





with constraints of limited land holding with small and marginal farmers of India. He also urged the industry leaders to spread awareness about the importance of nutrition for increasing livestock productivity and invited ideas to make animal fodder from agricultural waste and bring the concept of ready to eat processed feed. He urged all the support to industry and emphasized on the need for contract farming for increasing the bargaining power of small and medium scale farmers for the further development of industry.

Talking about the event, CLFMA Chairman Mr. Neeraj Kumar Srivastava said, "India's livestock industry is growing at a CAGR of 7%. With increasing disposable income, the demand for animal protein is also witnessing a huge growth. The domestic grain production will not be able to keep pace with the growing energy and protein demand for animal feed unless some immediate steps are being taken to increase per acre productivity and total production of grains like maize and soybean. Considering these challenges, we

had very fruitful discussions during these 2 days involving the industry and policy makers."

This was followed by the CLFMA Award Ceremony. The famous CLFMA awards were given to five leaders who had diligently worked and contributed to the development of the livestock sector. The Life Time Achievement awards were presented to Dr. Subhash V. Vaidya, Chairman, Noble VetScience LLP & Mr. Bharat Tandon, Founder / Chairman of Fibroheal Woundcare (P) Ltd. (FWPL) & MD, Healthline Pvt. Ltd. (Sericare Division). CLFMA Awards were presented to Dr. A. Natarajan, MVSc., Ph.D is Prof. & Head, Tamilnadu Veterinary Animal Sciences University, Dr. V. Sridhar, General Manager, National Dairy Development Board (NDDB) & Prof. V. Ramasubba Reddy Retd. Professor (LPM Avian), Agricultural University, Rajendranagar, Hyderabad – 500030, Telangana State for their marvellous contribution to the Indian Livestock Sector. CLFMA Chairman congratulated all the CLFMA award winners.





CLFMA also had a meeting with Hon'ble Minister of Fisheries, Animal Husbandry & Dairying, Shri.Parshottam Rupala, Mr. B.B. Patil, Hon'ble Member of Parliament & Dr. O. P. Chaudhary, Joint Secretary (NLM/PC), Dept. Animal Husbandry & Dairying, myself, Mr. Divya Kumar Gulati, Dy. Chairman, Mr.Suresh Deora, Hon. Secretary, Mr. P. S. Nandakumar, Past Chairman were on dais. A number of renowned Industry Stakeholders viz. Mr. B. S. Yadav from Godrej Agrovvet Ltd., Mr. Naveen Pasuparth, Treasurer, Dr. Jeetendra Verma from INFAH, Mr. C. Vasanthkumar PF&BA, Mr. Suresh Chitturi, Chairman International Egg Commission, Mr. Praveen Lunkad, Past Chairman, Dr. P.S. Mahesh, Director (I/C), CPDO, Mr. B. Soundararajan, Past Chairman, Mr. S. V. Bhave, Past Chairman, Mr. Amit Saraogi, Past Chairman, Mr. Sandeep Karkhanis, CLFMA Member, Mr. Sumit Sureka, Dy. Chairman, Mr.Vijay Bhandare, Dy. Chairman, Mr. C.V. Rao, Past Chairman, Mr. B. S. Rana, Poultry Punch Publications, Dr. Devender Hooda, CLFMA Zonal President - North, Mr.Pawan

Kumar Agarwal, CLFMA Member, Shri.Ramesh Chander Khatri, President, PFI & Mr. Ranpal Dhanda, Poultry Federation of India, Dr.Sujit Kulkarni, CLFMA Member, Mr.Abhay Shah, CLFMA Zonal President – West & Mr. Nityam Shah from Spectoms, Mr. Chakradhar Rao, President, IPEMA, Mr. Dinesh Kumar, S. R. Publications & Dr.Sushant Rai, President, KPFBA, Mr. Amit Saraogi, Past Chairman, Mr.Gulrez Alam, IB Group were some of the renowned Industry Stakeholders, who very well interacted with Hon'ble Minister and other Government Officials. Hon'ble Minister listened to all the problems patiently and understood the overall Industry condition. Hon'ble Minister of Fisheries, Animal Husbandry & Dairying, Shri.Parshottam Rupala was the Chief Guest along with various other eminent policymakers and industry leaders who had a fruitful meeting. Mr. B. S. Yadav, Past Chairman put forth all the problems which, Livestock Industry is facing in front of the Hon'ble Minister.





The Second day Symposium started with the Welcome Address by Mr. Neeraj Kumar Srivastava, Chairman CLFMA OF INDIA.

The symposium had 3 sessions and a round table discussion.

In the First Session was titled Demand Supply Outlook of Corn & Soybean, Ms. Prerana Desai, Head of Research, Samunnati Agri, spoke on the topic Have Corn Dynamics Changed in Recent Years? Mr. Unupom Kausik, President, NCML, spoke on the topic "Market Driving Factors: Soybean & Soybean Meal. Overall speakers spoke about the demand-supply commodity outlook for corn & soymeal- the two most important commodities, that contribute significantly to the compound feed production.

The Second session was titled "Special Address" which covered the Sustainability & Future of Online sales of Poultry products by Mr. Balram Singh Yadav, MD of Godrej Agrovet Ltd.



From Government of India Dr. Lipi Sairiwal, Assistant Commissioner AH, Department of Animal Husbandry, Dairying gave the presentation on the AHIDF Fund Central Sector Scheme under the Prime Minister's AtmaNirbhar Bharat Abhiyan stimulus package of INR 15000 Crore in detail. Dr. Gagan Garg, Assistant Commissioner, Department of Animal Husbandry, Dairying & Dr. Sujit K. Dutta, Joint Commissioner NLM, Department of Animal Husbandry, Dairying were present on the dias.

The Third session touched upon the topic of Strategies for Sustainable Animal Agriculture viz. Contours of Sustainable Animal Feed Market by Mr. G. Chandrashekhar, Economist, Senior Editor, Policy Commentator and Market Linkages: Derivatives, Spot for Animal Feed products by Mr. Mrugank Paranjape, Managing Director & CEO of NCDEX e-Markets Ltd. In this session, the Industry Pain Points were discussed in detail.

We had a round table discussion around the same theme.





Valedictory Session was proposed by Shri.S. V. Bhave, Past Chairman, CLFMA OF INDIA followed by Felicitation to all Sponsors, Media, Guests and Invitees.

The event ended with a thank you note by Mr. Suresh Deora, Hon. Secretary, CLFMA. He thanked the speakers, industry leaders, policymakers and delegates for their overwhelming response and making the event a huge success.

Overall the CLFMA interacted with various stakeholders in the industry and government on policy making related to the livestock sector. 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.

Videos of all presentations and detailed Session Summary posted on the Association's website www.clfma.org





'Poultry Sector suffered Rs.22,000-Cr loss due to Covid-19' - Neeraj Kumar Srivastava in his exclusive interview with Business Line

The Covid-19 pandemic has hit the livestock sector in the country hard, with lockdowns impacting demand. In an interview to *BusinessLine*, Neeraj Kumar Srivastava, Chairman of CLFMA of India, speaks on the key challenges that the sector faces and how to overcome them to increase revenues for the industry and profitability for farmers. Excerpts:

How has the pandemic impacted the livestock sector?

Even before India reported the first case of Covid-19, the rumours of poultry birds as the likely carrier of the virus started circulating in social media significantly reducing the demand for chicken meat in several parts of country in February-March 2020 and the poultry prices crashed to ₹4.5 a kg.

Government interventions and awareness campaigns by the industry had helped the situation. Even as it was settling, the market crashed again due to the bird flu scare in January. This was followed by sharp increase in soyameal prices by over 175 per cent, severely im-

acting the profitability of farmers. The estimated loss of the poultry industry alone due to impact of Covid-19 and associated lockdowns is more than ₹22,000 crore.

Due to the pandemic, the poultry industry registered a growth of only 2-3 per cent in FY20 (against an average annual growth rate of 7-8 per cent), and a decline of 4-5 per cent in FY21.

The industry is expected to touch pre-Covid level demand only by the end of FY22 provided the Covid-related curbs are relaxed and institutional demand rebounds. Institutional consumption contributes more than 50 per cent of the total demand.

The \$14-billion dairy industry also suffered a 25-30 per cent dip in demand. Bulk segment used to contribute about 15 per cent to the overall milk consumption.

With regard to aquaculture sector, the pandemic had caused a dip of 7.4 per cent in quantity and exports got badly hit.

What's the demand outlook for the animal feed sector in the next 2-3 years?

The demand outlook looks



The industry is expected to touch the pre-Covid level demand only by the end of FY22 provided curbs are relaxed and institutional demand rebounds

NEERAJ KUMAR SRIVASTAVA
Chairman, CLFMA of India

great for the next 2-3 years. A recent survey by the Indian Market Research Bureau suggests that protein deficiency in people in the country is over 80 per cent. Over 135 crore people require about 25-30 million tonnes of protein. Livestock contributes 47-56 per cent of the protein and 20 per cent of the energy requirement and plays an important role in meeting protein and energy demands.

There seems to be a shift in the buying and consumption

behaviours of poultry products? What are the contours of the change?

Currently, about 92 per cent of poultry products are sold through unorganised wet market and retail outlets. After Covid-19, the eating habits of urban consumers are changing dramatically and by 2025 we may see a ratio of 70:30 between conventional shops and branded shops.

Online retailing of livestock products like meat, eggs and milk for home delivery will rise significantly.

What are the major challenges that the sector is facing?

The demand-supply gap of feed, fodder and concentrates is a major challenge. The deficit of green fodder, dry fodder and concentrates is expected to reach 40 million tonnes (mt), 21 mt, and 38 mt by 2025, respectively.

The other challenge is the occurrence of diseases. We expect the occurrence of diseases will be more frequent, and biosecurity and management will be a key focus. The shortage in skilled manpower and low productivity in dairy sector, too, are a cause for concern.

Courtesy: **Business Line**





KCPL completed **50 years** in manufacturing and export of Livestock feed additives, this auspicious occasion celebrated at Mumbai with sales and manufacturing team. We thank you all for your kind support and blessings during this journey. Management also thanks to team members those involved in various activities in manufacturing from formulating, analysis of the products, R & D department till logistics. We will keep continuing our excellence in manufacturing for serving livestock industry.

Team Nutridian & KCPL



Golden Jubilee Year Celebration



Awards & Felicitation



Activities



Lamba's

New Ray in Poultry Nutrition...

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World Class 7.5% and 10% Concentrates

Broiler Concentrates:

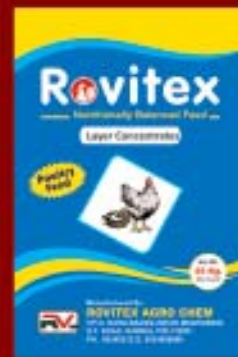
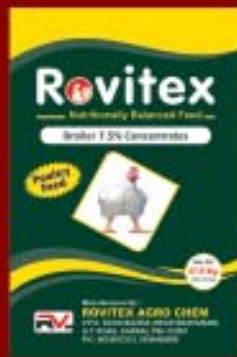
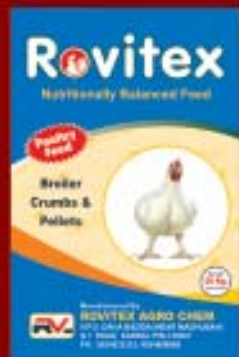
- ❖ Broiler 10% Concentrates
- ❖ Broiler 7.5% Concentrates
- ❖ Broiler 5.5% Concentrates
- ❖ Broiler 3.5% Concentrates
- ❖ Broiler 2.5% Concentrates
- ❖ Broiler 1.5% Concentrates

Layer Concentrates:

- ❖ Layer 5% Concentrates
- ❖ Layer 10% Concentrates
- ❖ Layer 25% Concentrates
- ❖ Layer 35% Concentrates

Broiler Crumbs/Pellets:

- ❖ Broiler Pre-Starter Crumbs
- ❖ Broiler Starter Crumbs
- ❖ Broiler Finisher Pellets



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Indian Herbs Celebrates '20th BioCholine Anniversary'



Established in 1951, INDIAN HERBS is the market leader and no.1 company and is the originator of the concept of Veterinary Ayurveda. With more than seven decades of experience moulded into world-class research expertise, Indian Herbs is having a global footprint in over 50 countries. Indian Herbs is having a steadfast commitment to

providing efficient, cost-effective, environment-friendly and sustainable phyto-genic solutions for animal healthcare. Innovation is what always keeps us at the forefront of discoveries in phyto-genics. Indian Herbs pioneered concept of natural alternates in segments of liver tonics, essential vitamins (C, E), amino acids, metabolic stimulant, respiratory tonic, anti-stress, adaptogen, immune-potentiator and Antimicrobial Growth Promoters (AGPs).

In the year 2001, Indian Herbs pioneered the concept of natural choline and launched 'BioCholine'. Year 2021 marks successful twenty years of BioCholine launch. Today BioCholine is a millennial brand that has spanned the world across 7 continents and is having legacy of two decades of global presence across more than 50 countries worldwide.



'Leader and Legend' come together to celebrate '20th BioCholine Anniversary'

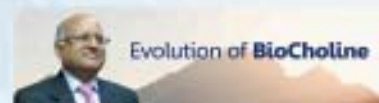
On the occasion of 20th BioCholine Anniversary, team INDIAN HERBS hosted manager's meeting at Chandigarh, India, dated 5th September, 2021. Those present on the occasion were Mr. Gaurav Agrawal, Director, Mr. Balaram Bhattacharya, Exec. Vice President (Mktg. & Sales), Dr. Angan Roy, National Sales Head, Dr. Shivi Maini, GM-Technical and all India zonal managers.

Resilient leaders stay focused on the horizon, anticipating the new business models that are likely to emerge and sparking the innovations that will define tomorrow. On the occasion of 20th BioCholine Anniversary celebration, Mr. Gaurav Agrawal addressed the gathering and shared BioCholine success story and global journey 2001-2021. Innovation stems from the great leaders of the world.



BioCholine 20th Anniversary is celebrated with the release of Booklet 'BioCholine success story 2001-2021'. A global webinar and MasterClass with Dr. Steve Leeson, Professor Emeritus, Department of Animal & Poultry Science University of Guelph, Canada about 'Role of choline in sustainable poultry production' was organized on virtual platform. More than 500 delegates across the country converged to attend the MasterClass with Dr. Steve Leeson.

Global Webinar commenced with the welcome address by Mr. Balaram Bhattacharya, Executive Vice President (Mktg. & Sales), INDIAN HERBS. Dr. Steve Leeson, gave a comprehensive overview of advantages of natural choline supplement and elaborated efficacy of BioCholine in prevention of FLS, additional advantage of energy repartitioning effect and potentiating overall zootechnical performance of birds. Dr. Shivi Maini, GM-Technical, appraised the delegates about IH-global research initiatives to unravel mechanism of action of BioCholine on basis of advanced molecular sequencing technology of Nutrigenomics and transcriptomics, a research undertaken at Dept. of Poultry Science, University of Georgia USA.



Indian Herbs laid the foundation of natural choline supplement and a great success was achieved by innovating BioCholine. Chairman, Sh. Sushil Agrawal realized the challenges and threats of animal industry that have been posed due to usage of synthetics, chemicals and antibiotics in livestock farming. With his visionary guidance, Indian Herbs fostered safety and sustainability in animal production with development of phyto-genic supplements.

Originality Matters – Being Original

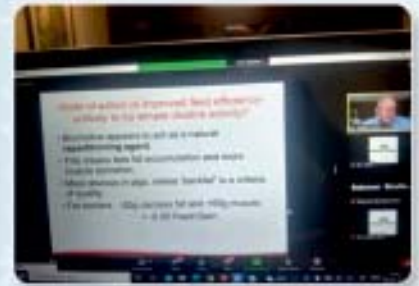
Indian Herbs has been continuously striving to provide innovative phyto-genic feed supplements (IH-PFS) and healthcare products. IH-PFS are unique since there is an advantage of combination of several plant-derived biomarkers and phyto-ingredients. As compared to single plant ingredient products, synergistic combination of phyto-bioactives empowers IH-PFS products to exploit the animals full genetic potential, promote growth, immunity and for control of diseases.

This mega event of BioCholine 20th Anniversary celebration was a grand success of INDIAN HERBS to once again showcase organizations commitment to provide the best natural and phyto-genics solutions to the industry for sustainable poultry production and profitability.

To address the demand of animal protein raised under high animal standards, Indian herbs pioneered natural, non-antibiotics feed additive supplements. Usage of synthetic vitamins such as choline chloride in livestock and poultry feed is associated with many serious concerns. Indian Herbs team of scientists innovated natural vitamins and amino acids for complete replacement of synthetic additives in livestock and poultry feed. Indian herbs is the originator of concept of natural choline as an alternate to synthetic choline chloride.

BioCholine®

Natural, stable and high strength conjugated choline



Indian herbs Launches

Minera-P

Blend of glycinated trace minerals fortified with phyto-molecules



Advantages of minerals

- ▶ Essential for rapid growth, high meat yield and egg production
- ▶ Optimizes skeletal and reproductive development
- ▶ Essential for cellular respiration, iron transport and pigmentation
- ▶ Important role in immune system regulation and redox-balance maintenance
- ▶ Essential for thyroid metabolism, maturation of spermatozoan and fertility

- ▶ Highly stable at acidic pH gut
- ▶ Ensures optimal mineral absorption

Advantage of herbs

- ▶ Essential for mineral absorption (Hadijod)
- ▶ Anti-stress adaptogen and immunomodulator (Amalaki & Ashwagandha)
- ▶ Helps improve body weight gain (Shatavari)
- ▶ Essential for fertility and

hatchability (Shatavari & Lasana)

Advantages of glycinales

- ▶ Strong bonding capacity of minerals
- ▶ Specific site of absorption
- ▶ Homogeneous dispersion in the gut
- ▶ Highly stable at acidic pH gut
- ▶ Ensures optimal mineral absorption



Cissus quadrangularis
(Hadijod)
Improves absorption of calcium and phosphorus



Asparagus racemosus
(Shatavari)
Improves egg production



Withania somnifera
(Ashwagandha)
Antistress & Adaplogenic



Alum sativum
(Lasana)
Improves digestion



Emblica officinalis
(Amalaki)
Antistress & Immunomodulator





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your
Hidden Performance

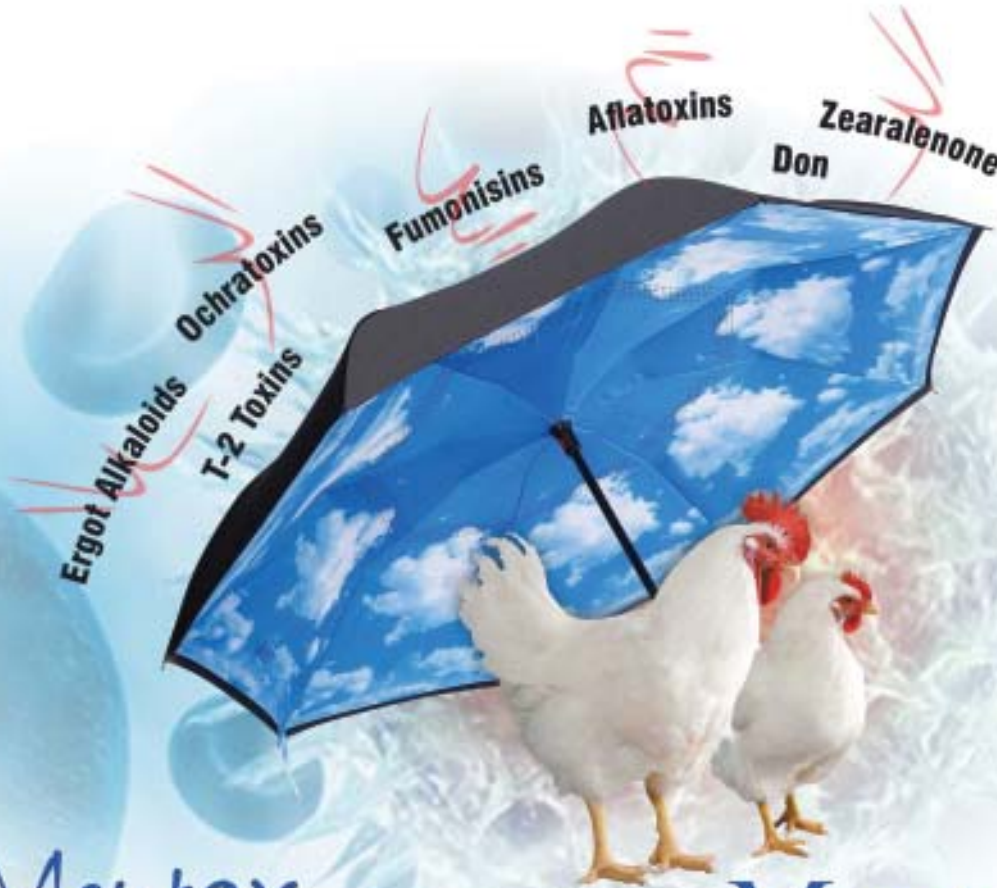


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Reducing Predisposing Factors Key in Campylobacter Control

Addressing the predisposing factors that allow Campylobacter to flourish can offer broiler producers an additional strategy to improve poultry's food safety profile.

by Lorran Baeumle Gabardo

In Brief

- Campylobacter is difficult to control, and prevalence may be increasing.
- Mycotoxin contamination can predispose birds to Campylobacter.
- Controlling predisposing factors is an important tool for Campylobacter control.

campylobacteriosis is on the rise. Given the difficulties in directly reducing Campylobacter incidence, limiting predisposing factors, such as mycotoxins, can form part of a Campylobacter control strategy.

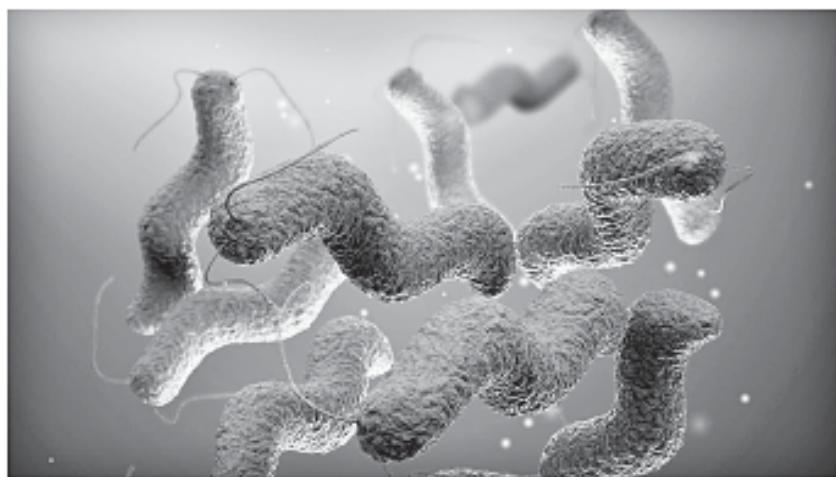
Worldwide DON contamination – 2020

It is well documented that DON can negatively impact common problems in animal production, such as increasing *Salmonella typhimurium* issues and facilitating the entrance of pathogenic *Escherichia coli* strains into the bloodstream in pigs, also predisposing broilers to necrotic enteritis.

Recent studies have also strengthened the hypothesis that DON can also influence the

Campylobacter has proved more difficult to control than other food borne pathogens leading to gastroenteritis and there is evidence to suggest that

infection profile of *Campylobacter jejuni* in broilers. The co-exposure of DON in poultry feed and *C. jejuni* showed a considerably increased presence



DON shows high prevalence and contamination levels worldwide

Source: Biomim World Mycotoxin Survey, 2020.

| | Contaminated samples (%) | Avg. of positives (ppb) | Max. (ppb) |
|-------------------------|--------------------------|-------------------------|------------|
| North America | 75 | 789 | 43,517 |
| Central & South America | 61 | 736 | 26,320 |
| Europe | 75 | 531 | 11,875 |
| MEA & North Africa | 78 | 497 | 5,170 |
| Africa | 78 | 592 | 7,254 |
| Asia | 81 | 546 | 17,550 |

of pathogen loads in the gut as well as an increase in gut permeability.

The study found that the co-exposure by *C. jejuni* or DON challenge negatively impacted the gut barrier function, reflecting impairment of the digestive and immune functions. Additionally, the synergistic effect between DON and *C. jejuni* was also found to enhance *C. jejuni* colonization of the broiler gut, as DON destroys the gut structure, providing favorable conditions for *Campylobacter* growth.

Three strategies are considered effective in mitigating the risk of mycotoxins on animals' immune status:

1

ADSORPTION

binding adsorbable mycotoxins, such as aflatoxins, in the gastrointestinal tract

2

BIOTRANSFORMATION

the irreversible degradation of non-adsorbable mycotoxins (including DON, zearalenone and fumonisins) into non-toxic compounds

3

BIOPROTECTION

supporting the functionality of the liver and gut, which are the main organs affected by mycotoxins

Establishing a strategic plan to correctly identify and counteract mycotoxins, specifically DON, can be key in reducing *Campylobacter* risk and improving the food safety profile of poultry meat.

Free Lance Poultry Consultant

DR.MANOJ SHUKLA, a renowned poultry Veterinarian, with 20 years of enriched field experience, now started Free Lance Poultry Consultancy. In the past 20 years have contributed to the development of the hatcheries in various capacities of leading companies across India - Maharashtra, Gujarat, Madhya Pradesh, Chhattisgarh, Orissa, Bihar, West Bengal, Jharkhand, North-East, Uttar Pradesh and neighbouring country of Nepal.



His areas of expertise include:

- Commercial Layer Management.
- Commercial Broiler Management
- Nutrition (Feed Formulations).
- Breeder Management.
- Sales & Marketing of Day-Old commercial Layer chicks, Broiler chicks & Poultry Feed.
- Sales & Marketing of Broiler Breeder.
- Integration.
- Training to Field staff.
- Field Trial of Drugs & Feed additives.
- Speaker in Technical Seminars.

He can be Contacted at:- **Dr. Manoj Shukla**

A-1, Gaytri Nagar, Phase-II, P.O. Shankar Nagar, Raipur, Chhattisgarh-492007

Mob.No : 09644233397, 07746013700, Res. 0771-4270230

Email : drmanu69@gmail.com

As a strategic partner, Poultry Line wishes Dr. Shukla every success in his new assignment

Use of Protected Benzoic Acid in Sustainable Poultry Production

Dr. Koushik De, Technical Services Director- SCA, Novus International

Feed efficiency is one of the main factors used for the improvement of chicken production. In addition, feed efficiency has an important economic impact on the competitiveness of the poultry sector. Another important feature in modern broiler farms is the correct management of diseases for maintaining productivity and economic viability. The challenge of increased feed efficiency and potential health risks becomes essential to the survival of the intensive broiler production. The ban or limited use of antibiotic growth promoter in some regions of the world has forced the investigation of alternative products which can modulate the intestinal flora beyond the stomach barrier, obtaining comparable growth performance in the animal. Organic acids as well as aromatic compounds have been widely used as antimicrobials in food safety and as feed additives. An important quantity of studies in which



Dr. Koushik De

the efficacy of organic acids in improving feed efficiency and growth have been clearly showed (Khan and Iqbal, 2016; Huyghebaert et al., 2011). The limiting factor in the use and efficacy of these compounds is the need to reach the intestine in order to exert their antibacterial activity, without being absorbed too rapidly after leaving the stomach.

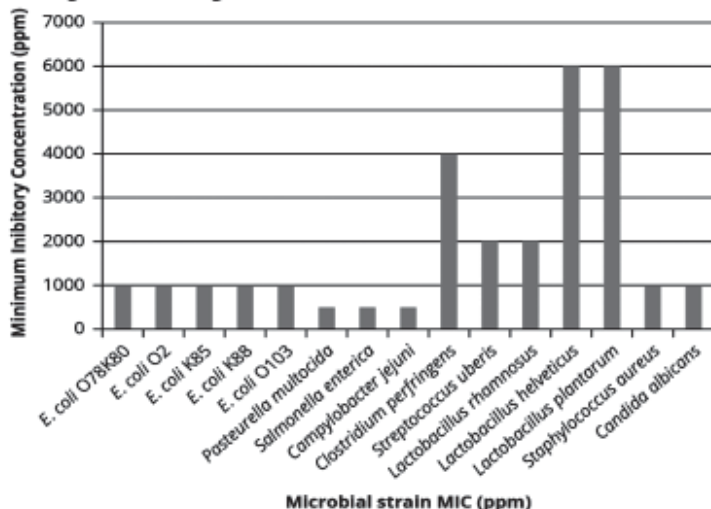
Which organic acid to choose?

For feed decontamination, formic acid is given as the best antimicrobial organic acid. It is not the best choice for an intestinal microorganism target. The pKa value of formic acid is lower than 4; it is a small molecule and quickly metabolised. Benzoic acid has a pKa value of 4.2 and the phenolic part is an efficient damaging agent for the bacteria cell. Benzoic acid is a solid molecule and also less corrosive and safer to handle compared to formic, propionic or lactic acids. Figure 1 shows the minimum inhibitory

concentrations of benzoic acid on different bacteria (not published data). As it is the general case for organic acids, gram-negative (i.e. *E. coli*, *Salmonella*) are much more inhibited than gram-positive bacteria.

Amongst the gram-positive bacteria, the “beneficial bacteria” (i.e. *Lactobacillus* spp.) is less sensitive to the antibacterial effects of benzoic acid. It has already been reported that benzoic acid plays an important role lowering numbers of many pathogenic bacteria as *Campylobacter jejuni*, *Escherichia coli*, *Listeria*

Figure 1 – Minimum inhibitory concentrations (MIC in ppm) of benzoic acid against microorganisms isolated from animals.



monocytogenes and Salmonella enterica (Giannenas et al., 2010).

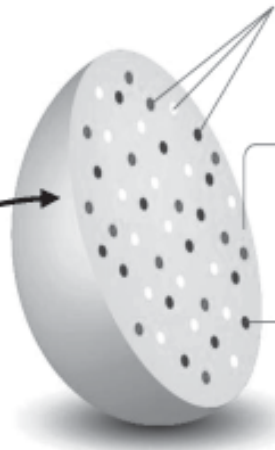
Typically Benzoic acid is an organic acid that modify the intracellular pH of gut bacteria and shifts gut bacterial profile by creating an environment that minimize the proliferation of pathogenic bacteria (Yousaf et al., 2016). Despite benefits of organic

patented technology called Novus Premium Blend consisting of a protective vegetable fat matrix embedding the active substances which allows benzoic acid to be released slowly throughout the intestinal tract and modulating the gut microbiota.

AVIMATRIX® is a blend of **nature identical** flavoring compounds and preservatives processed



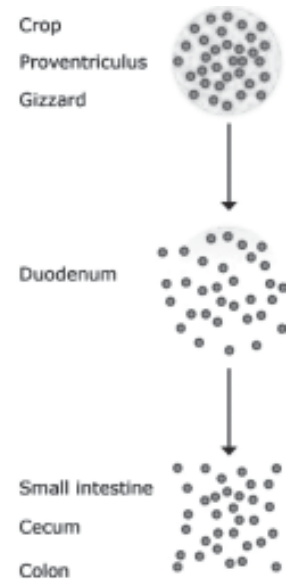
Avimatrix



A unique blend: effective in intestinal tract environments

Protection: targeted release of the active substances throughout the whole intestinal tract

Benzoic acid: highly effective against pathogenic bacteria

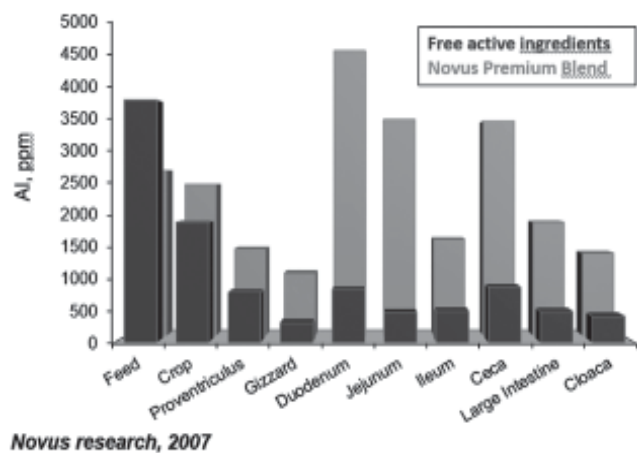


acids, a major constraint associated with organic acids is their rapid metabolism and absorption in the proximal parts of the gastrointestinal tract, which results in low concentrations in the distal parts. Thus, the mode of action for the bacteriostatic and bactericidal activities of free organic acids are questionable (Hume et al., 1993; Thompson and Hinton, 1997; Ricke, 2003; VanImmerseel et al., 2006; GoodarziBoroojeni et al., 2014b).

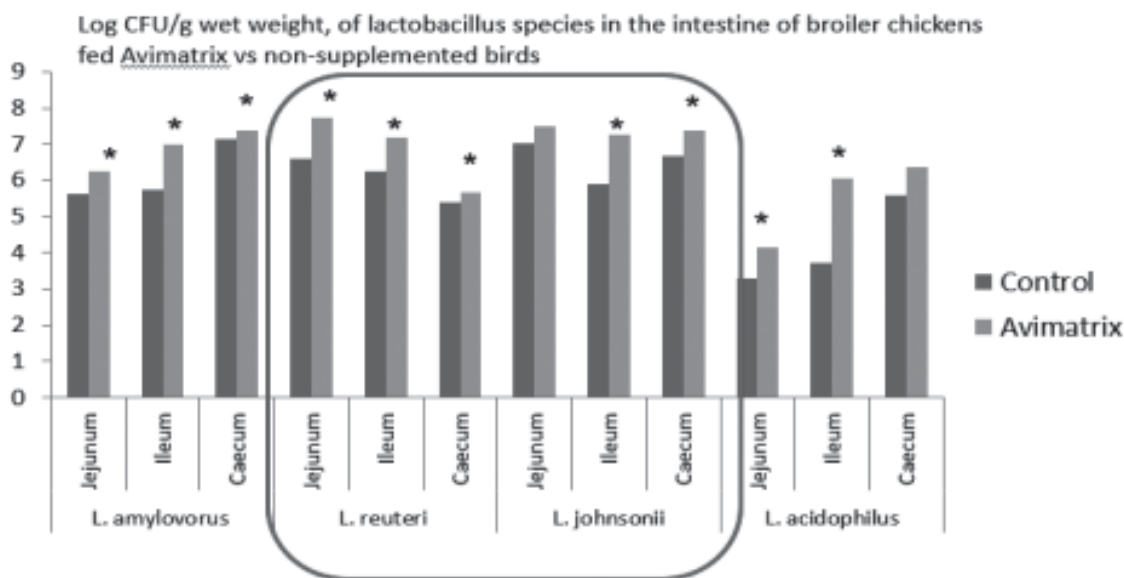
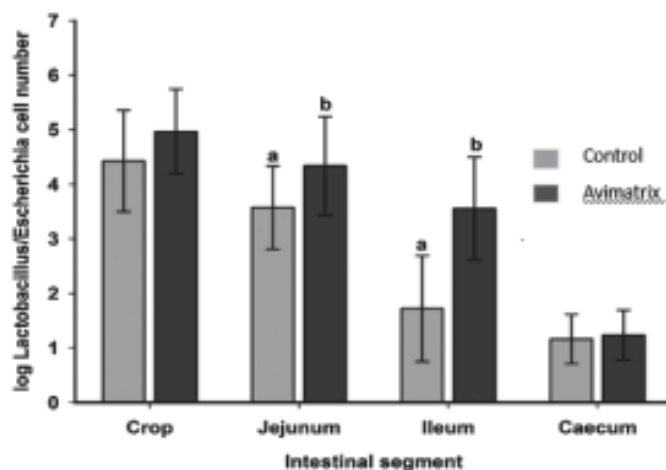
by Novus **Premium Blend Technology** with a high Benzoic acid concentration. It has a stabilizing effect on gut microflora which offers cost effective performance enhancement. This encapsulation through Premium Blend Technology has shown the control release of Active Ingredients (AI) in the intestinal tract when compare with free Benzoic acid.

Target release by encapsulation:

To reach antimicrobial concentrations in the distal intestine of poultry, it would be necessary to increase the level of organic acids dramatically in the feed, causing decreased feed intakes. Therefore different attempts have been made to protect organic acids from dissociation and absorption in the proximal intestine by microencapsulating the active compounds in a matrix which would lead to releasing the active compounds in the distal parts of the gut (Yousaf et al, 2016).Novus has used a



AVIMATRIX® has been shown to stimulate growth of *Lactobacillus* in the GIT, which increases lactate production. Lactate, as a substrate, promotes growth of *Clostridium* clusters XIVA and IV. *Clostridium* cluster XIVA includes many known butyrate-producing bacteria. Butyrate is a preferred energy source for colonic epithelial cells and is reported to improve growth performance, intestinal digestive and absorptive capacity. *Clostridium* cluster XIVA has been reported to down-regulate bacterial virulence and gut inflammation.



Berlin University, 2012

L. reuteri stimulates the development of longer villi and significantly deeper crypts, specifically in the ileal region of the gut of young chicks. This enhanced ileal mucosal development caused by *L. reuteri* occurred in turkeys as well, and the effect was retained until the birds reached market age. AVIMATRIX® also has been shown to increase the ratio of *Lactobacilli* vs *Escherichia* spp throughout the intestinal tract and thereby positively alters the microbial balance of the GIT.

Conclusion:

supplementing broiler diets with a protected benzoic acid (AVIMATRIX®) embedded in vegetable fat can positively impact the intestinal microflora by reducing coliform and clostridia counts in the gut

and subsequently improve footpad health and litter condition. Because of effectuating an overall better gut health condition, this protected benzoic acid increases final bird weight and feed efficiency resulting in a considerable return on investment. The efficacy and consistency of results showed by the application of this product are related to both the mode of action of the active compound (benzoic acid) against intestinal pathogenic bacteria and its protection technology, which allows the active substances to be released throughout the entire bird's intestinal tract. Thus, together with a proper farm management, this protected benzoic acid can be a powerful, cost-effective solution to manage intestinal health challenges and animal welfare ensuring a profitable poultry production.



World Egg Day 2021

Huvepharma SEA (Pune) Pvt. Ltd. celebrated World Egg Day on 8th October 2021 to promote and popularize egg consumption as part of a balanced diet. Considered a superfood, an egg is one of the most popular sources of protein. On this occasion of 25th anniversary of World Egg Day, Huvepharma SEA team distributed boiled eggs amongst people to spread awareness about the benefits of eating eggs daily & to make people aware of the nutrients present in eggs and informed them about the benefits of its consumption.

Malnutrition is a global problem and the consumption of eggs could prove to be a solution to the issue. Owing to their broad range of nutrients, eggs are a healthy, nutritious & affordable part of the diet for people at all stages of life, including growing teenagers, pregnant and lactating women, the elderly, and infants, particularly those in nutritionally vulnerable areas.

Along with their nutritional value, eggs are the most environmentally sustainable & affordable animal-source protein available, helping support families around the world as well as the planet itself. Thanks to new efficiencies and significant productivity gains, eggs have a low environmental footprint.

The egg industry is a significant source of income for rural populations around the world. In low & middle-income countries, women represent a large proportion of egg farmers & rely on their farms to feed their children.

Mr. O. P. Singh, Managing Director of Huvepharma SEA also acknowledged and thanked to all the egg producers for their valuable inputs in supporting the Health & Nutrition as well as encouraged the nation to celebrate the highly nutritious and brilliantly versatile egg.



Follow us at: [huvepharma SEA](https://www.huvepharma.com)





World Egg Day 2021

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TriSorb launch in Oct 2021

Avitech Nutrition recently launched TriSorb - a premium toxin binder for the animal nutrition feed industry. TriSorb is designed to combat mycotoxins using the distinctive ABC principles of Adsorption, Biotransformation and Colonisation. Avitech Nutrition's new multi-pronged mycotoxin strategy effectively deactivates, neutralizes and eliminates the common mycotoxins present.

Avitech Nutrition has been in the field of toxin binders since its inception in 1996 and the latest offering TriSorb represents its commitment to provide the feed milling industry a comprehensive mycotoxin management strategy.

TriSorb is available in 25 Kg HDPE bag

Dr. Sateesh Kumar Chauhan as Vice President- Research & Development - Avitech

Avitech Nutrition recently appointed Dr. Sateesh Kumar Chauhan as Vice President-Research & Development. Dr. Chauhan will be based in Gurgaon.

Dr. Chauhan holds Post graduate degree in Pharmacy Operations from Birla Institute of Technology & Science, Pilani and a Ph.D from CCS University, Meerut.

Dr. Chauhan will lead the R&D initiative of Avitech Nutrition with a



Dr. Sateesh Kumar Chauhan

strategic focus on the phytogetic sector. Dr. Chauhan has a rich experience of 30years in the Research and Development of pharmaceuticals and herbal products.

Dr. Chauhan's induction into Avitech's R&D will enable Avitech Nutrition greater focus on momentum in its effort to bring innovative solutions to the animal nutrition sector.

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New Ross App Puts Valuable Management Tools at the Fingertips of Aviagen India Customers

Useful app joins the company's growing catalogue of resources for chicken producers

September 10th, 2021 – Udumalpet, India. – Aviagen® India recently launched a new app, giving its valued Ross customers throughout the country instant and easy access to the latest Parent Stock (PS) and broiler management information, along with other beneficial reference and monitoring tools.

With the introduction of the new app, these helpful tools and capabilities are now just a click away:



- Ability to benchmark flocks against PS and broiler Performance Objectives
- Access to newly published PS Performance Objectives
- Broiler and PS Nutrition Specifications
- Date finder to match calendar dates with flock age for easy performance tracking
- Quick calculation of meat yield and Production Efficiency Factor (PEF)
- Scoring tool to count birds in up to five subgroups (expressed in %)
- Unit converter to switch between global measurement systems
- Users may tailor the app to their preferred languages, regions and measurement systems.

“We care about our customers, and are always looking for ways to better serve them,” commented Aviagen India Business Manager Marc Scott. “With this new Ross app, customers have convenient access to vital information to help improve the health, welfare and performance of their birds, anytime and from anywhere.”

Available in 16 languages (soon to be more), the handy tools can be downloaded to Android or Apple mobile phones or other devices from these links:

Android:

<https://play.google.com/store/apps/details?id=com.aviagen.ross>

iOS (Apple):

<https://apps.apple.com/us/app/ross/id1435785489#?platform=iphone>

About Aviagen

Since 1923, Aviagen® has been a preferred global poultry breeding company with a mission to help its customers -- the world's chicken meat producers -- supply

sustainable, affordable and nutritious protein to their growing communities. Putting into practice its corporate value of “Breeding Sustainability,” Aviagen implements efficiencies that make commercial chicken production environmentally and socially responsible and economically beneficial to producers, while at the same time promoting bird performance, health and welfare.

To meet varied market demands, Aviagen offers a full portfolio of breeding stock under the Arbor Acres®, Indian River® and Ross® brand names. The Rowan Range® and Specialty Males® target slower-growing and other niche market needs. Aviagen is based in Huntsville, Alabama, US., with operations across the UK, Europe, Turkey, Latin America, India, Australia, New Zealand, Africa and the US, and joint ventures in Asia. The company employs close to 8,000 people, and serves customers in 100 countries.

For more information, please visit Aviagen.com, or follow Aviagen on LinkedIn.

###

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Cargill Mycotoxin Survey: Mycotoxin Score Card for De Oiled Rice Bran (DORB)

De Oiled Rice Bran (DORB) Meal is the by product of rice milling industry. Unproc-essed rice grain has 4 parts. First is outer most woody covering called husk, under this covering there is fibrous covering called pericarp or aleurone layer. Under pericarp there is white rice and small germ. Pericarp layer is bran and when oil is extracted from bran it becomes DORB.

Therefore, De Oiled Rice Bran (DORB) Meal is the by product of the extraction of oil from Rice Bran. DORB is rich source of valuable amino acids like methionine, cystine & lysine and phosphorus.

DORB is generally considered excellent feed ingredient to balance energy in feed for poultry, fish & cattle due to its less cost, good nutritive value and relative absence of antinutritional factors. Quality of DORB can be determined on the basis of Crude Protein & C. Fibre content in this. Having high crude protein, less crude fibre & less moisture is considered as good quality DORB. Defatted rice bran can be fed to broilers at 15% to 20%.

DORB can pose serious threat & production issue due to fungi proliferation & high Mycotoxin contamination, If processing & storage conditions are not appropriate. We have observed high mycotoxin contamination in DORB in Indian scenario & can be attributed to high moisture in DORB & poor storage condition.

Aspergillus flavus is the most common specie found in DORB, which releases highly toxic group of mycotoxins. Hence, **Aflatoxin** would be major concern while using DORB, as it consists average of **41.8ppb** and maximum is **252 ppb**, which is more than permissible limit for poultry. **Fumonisin** is also present in considerable amount, Hence it is advisable to use DORB after analysis & with proper precaution.

Mycotoxin Score Card (MSC) for DORB has been drafted to show mycotoxin contamination pattern of last year (September'20 – August'21). It will provide insight to customers about mycotoxin load in DORB, so they can adopt right strategies to mitigate mycotoxin threat.

Mycotoxin Score Card for De Oiled Rice Bran (DORB) – (Sep'19 – Aug'21)

940

Total Samples

933

Total Contaminated Samples

%Contaminated Samples



99%

%Contaminated Samples Above Risk



84%

| Mycotoxin Analyzed | Samples | Contaminated Samples | Contaminated Samples Above Risk | Average Contaminated (ppb) | Max. Result (ppb) |
|--------------------|---------|----------------------|---------------------------------|----------------------------|-------------------|
| Aflatoxin (total) | 862 | 860 | 773 | 41.8 | 252 |
| Fumonisin | 24 | 23 | 9 | 1,375.6 | 5,880 |
| Ochratoxin | 30 | 30 | 3 | 8.6 | 43 |
| T2 Toxin (total) | 23 | 19 | 1 | 17.1 | 47 |

Risk Assessment by Species



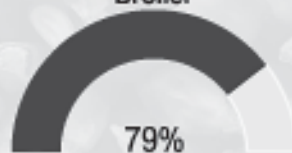
| Mycotoxin Analyzed | Broiler | Layer | Breeder |
|--------------------|---------|-------|---------|
| Aflatoxin (total) | 🚩 | 🚩 | 🚩 |
| Fumonisin | 🚩 | 🚩 | 🚩 |
| Ochratoxin | 🚩 | 🚩 | 🚩 |
| T2 Toxin (total) | 🚩 | 🚩 | 🚩 |

Minimum Risk 🚩 Low Risk 🚩 Medium Risk 🚩 High Risk 🚩

Percentage of samples above risk by species

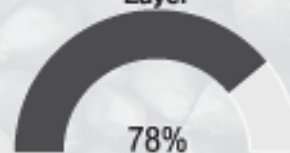


Broiler



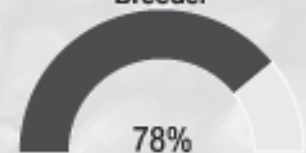
79%

Layer



78%

Breeder



78%

BROILER LIFTING RATES FOR THE MONTH OF SEPTEMBER 2021

| place | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Hyderabad | 125 | 116 | 116 | 118 | 121 | 121 | 121 | 121 | 123 | 123 | 123 | 123 | 123 | 125 | 125 | 115 | 115 | 117 | 122 | 124 | 127 | 129 | 131 | 133 | 135 | 135 | 135 | 135 | 126 | 126 |
| Karimnagar | 125 | 116 | 116 | 118 | 121 | 121 | 121 | 121 | 123 | 123 | 123 | 123 | 123 | 125 | 125 | 115 | 115 | 117 | 122 | 124 | 127 | 129 | 131 | 133 | 135 | 135 | 135 | 135 | 126 | 126 |
| Warangal | 125 | 116 | 116 | 118 | 121 | 121 | 121 | 121 | 123 | 123 | 123 | 123 | 123 | 125 | 125 | 115 | 115 | 117 | 122 | 124 | 127 | 129 | 131 | 133 | 135 | 135 | 135 | 135 | 126 | 126 |
| Mahaboobnagar | 125 | 116 | 116 | 118 | 121 | 121 | 121 | 121 | 123 | 123 | 123 | 123 | 123 | 125 | 125 | 115 | 115 | 117 | 122 | 124 | 127 | 129 | 131 | 133 | 135 | 135 | 135 | 135 | 126 | 126 |
| Kurnool | 125 | 116 | 116 | 118 | 121 | 121 | 121 | 121 | 123 | 123 | 123 | 123 | 123 | 125 | 125 | 115 | 115 | 117 | 122 | 124 | 127 | 129 | 131 | 133 | 135 | 135 | 135 | 135 | 126 | 126 |
| Vizag | 125 | 116 | 116 | 118 | 121 | 121 | 121 | 121 | 123 | 123 | 123 | 123 | 123 | 125 | 125 | 120 | 120 | 120 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 116 | 116 |
| Godavari | 131 | 122 | 122 | 124 | 127 | 127 | 127 | 127 | 130 | 130 | 130 | 130 | 130 | 132 | 132 | 122 | 122 | 122 | 127 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 120 | 120 |
| Vijayawada | 131 | 122 | 122 | 124 | 127 | 127 | 127 | 127 | 130 | 130 | 130 | 130 | 130 | 132 | 132 | 122 | 122 | 122 | 127 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 120 | 120 |
| Guntur | 130 | 121 | 121 | 123 | 126 | 126 | 126 | 126 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 121 | 121 | 121 | 126 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 123 | 123 |
| Ongole | 130 | 121 | 121 | 123 | 126 | 126 | 126 | 126 | 129 | 129 | 129 | 129 | 129 | 129 | 129 | 121 | 121 | 121 | 126 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 123 | 123 |
| Namakkal | 113 | 115 | 115 | 116 | 118 | 118 | 118 | 118 | 118 | 116 | 116 | 116 | 116 | 116 | 118 | 120 | 120 | 115 | 115 | 117 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 |

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Dr. Raina Raj

Natural Remedies is the number 1 veterinary herbal healthcare company in India with presence in more than 30 countries across the globe. Through its world-class Research and Development centre, Natural Remedies offers a category of science-based Phytogetic feed additives, called Standardised Botanical Powders (SBPs). In this series of articles, Dr. Raina Raj, Head of Marketing at Natural Remedies, provides in-depth knowledge of what SBPs are, and their benefits in the poultry diet.

Environmentally conscious consumers place a premium on global sustainability, animal welfare, and obtaining better food for their families, driving them to solely purchase organic items. This segment of the population has grown at an exponential rate over the last decade, and their numbers are continuing to rise. According to reports published by BusinessWire, the global organic meat products market is expected to grow from \$14.38 billion in 2019 to \$20.39 billion in 2023. To meet this market demand, manufacturers

must take on the task of producing higher-quality, consistently efficient, value delivering sustainable herbal products.

We explored what standardised botanical powders (SBPs) are, their value, and the benefits they give to the poultry farming community in prior articles in this series. SBPs are herbal powders whose specific phytochemical active concentrations are standardized with minimal variation, to ensure efficient Phyto active function in the animal's body. Through standardization of botanical powders, the

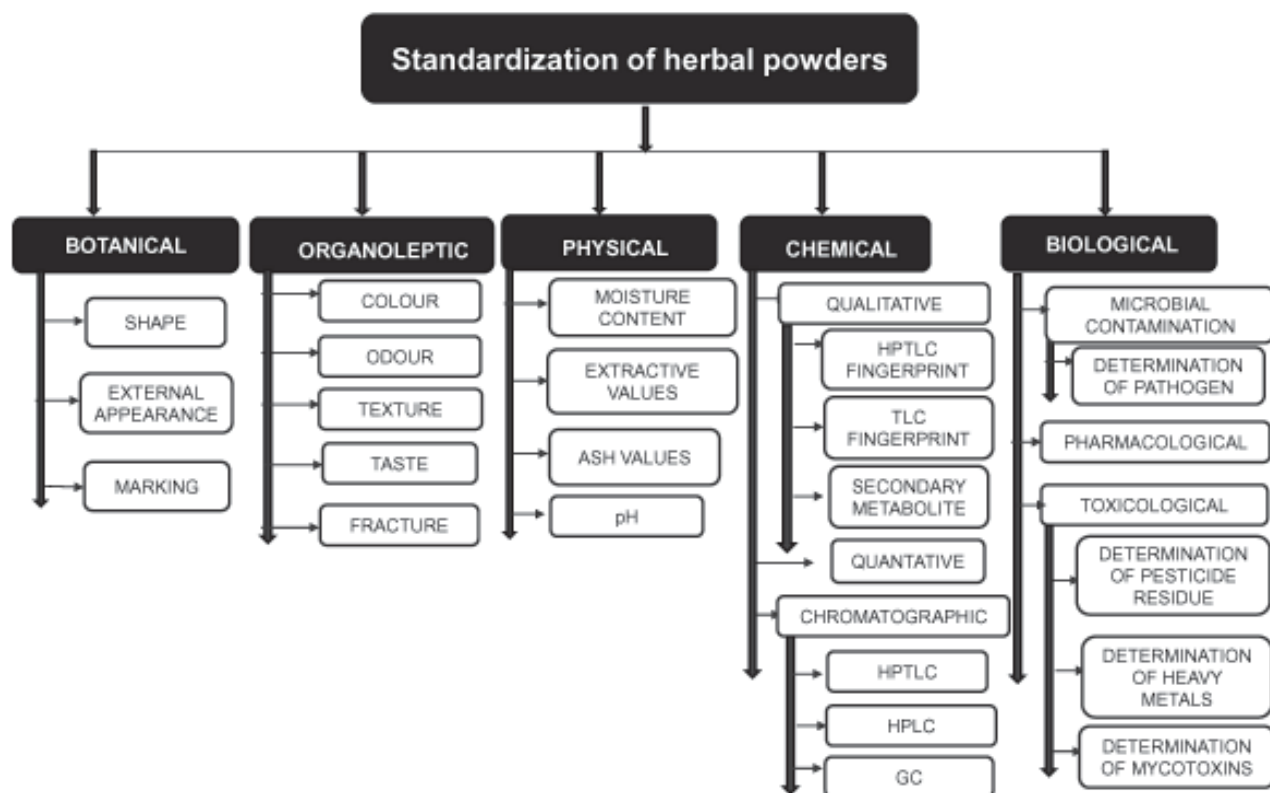


Figure 1: The many assessments that an SBP must go through are depicted in this schematic representation

product can be monitored for consistency, and it provides the expected and desired results for the animals.

Consistency in efficacy is crucial in today's poultry sector, and the usage of SBPs will help with that. In previous articles, we discussed the scientific foundation to produce SBPs as well as the protocols that must be followed to ensure that the active phytoconstituents remain of high quality. It's crucial to keep the herbal constituents stable in a poly-herbal composition. Environmental factors such as humidity, air, light, and temperature can affect stability. Stability is further affected by factors such as particle size, pH, the characteristics of water and other solvents used during manufacturing, the nature of the container, and the presence of other chemicals resulting from contamination. Maintaining an SBP's stability ensures that the product's strength, quality, and purity remain consistent as per specifications. In the current article, we shall shed light on the desired botanical, organoleptic, physical, chemical, and biological properties of SBPs that make them stable and maintain high quality.

SBPs should be assessed and documented for their properties

SBPs should be thoroughly studied for their inherent properties as shown in Figure 1.

Botanical properties such as physical shape, external appearance, and markings should be documented.

Organoleptic properties are properties that create an individual experience through the senses of the consumer. These properties are colour, odour, texture, taste, and fracture.

Physical attributes such as pH, moisture content, ash value, which is the inorganic residues obtained after complete combustion of a compound, and extractive values are used to assess quality, purity, and to detect adulteration.

Chemical properties should be assessed through high-performance liquid chromatography (HPLC), high-performance thin-layer chromatography (HPTLC), thin-layer chromatography (TLC), and

gas chromatography (GC). The SBPs should be analysed both qualitatively and quantitatively for their chemical properties.

Biological properties should be studied for microbial contamination, toxicological and pharmacological residues.

The next sections go through some of the key attributes that contribute to the making of an efficient SBP.

Assessment of the particle size of the SBPs

Poultry are simple stomached animals largely dependent on the repertoire of endogenous enzymes for their nourishment. One of the most critical aspects that determine feed utilisation in these animals is particle size distribution. Finer particle size provides for better contact with digestive enzymes, which results in optimal nutrient absorption and improved animal performance. However, the fineness of the particle size has limitations. Increased incidences of gizzard dysfunction are seen in the flock when the particle size is very fine. Hence, during the manufacture of SBPs, the particle size of the product plays an integral role. Particle size can be assessed using a particle size analyser, as in Figure 2, which works on the principle of laser diffraction. Large particles scatter light at small angles as compared to that of the laser beam, whereas small particles scatter light at a much larger angle. The angular scattering intensity is used to determine particle size. The flow of the SBP particles should be assessed for parameters such as the **angle of repose**, which is a characteristic related to inter-particulate friction or resistance to movement between particles, the **compressibility index**, and **Hausner ratio**. In Figure 3, the particle sizes of three products, A, B, and C, are compared. While they are all in powder form, higher magnification reveals that product A has the best particle size when compared to B and C. The ability of a product to be homogeneously blended into the feed mixture is also influenced by particle size. Hence, as indicated in Figure 4, an SBP must be examined for its capacity to be uniformly mixed.

Thermostability assessment

It has been observed that, under higher temperatures, many of the constituents present in poly-herbal

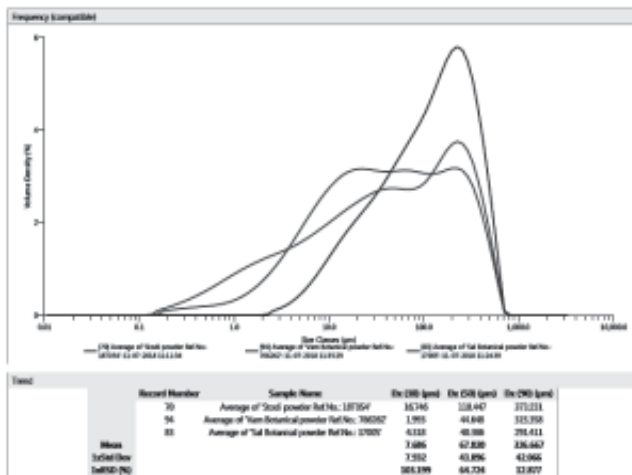


Figure 2: Particle size analyser results

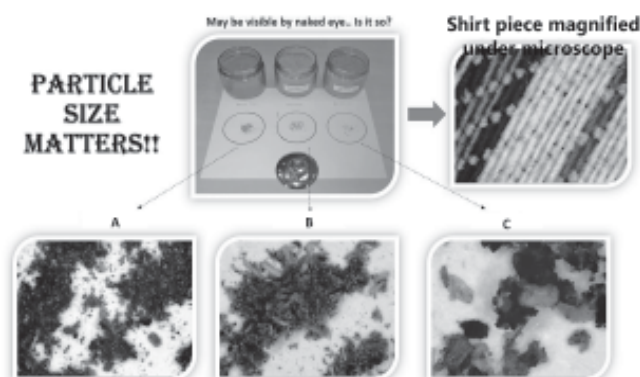


Figure 3: Particle size of different products shown at higher magnification.

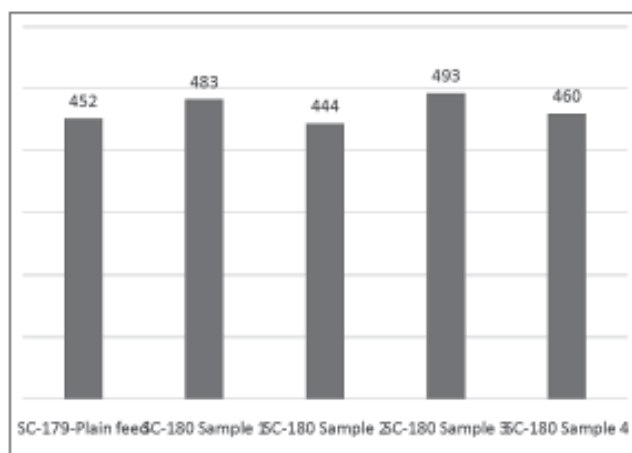


Figure 4: Assessment of uniform mixing of the SBP with other feed ingredients.

formulations may react with each other, raising serious concern about the stability and efficiency of the formulation. Natural products are often susceptible to deterioration, especially during storage, leading to the production of metabolites with no activity, loss of active phytoconstituents, and, in extreme cases, the production of toxic metabolites. Hence, qualitative, and quantitative evaluation of SBP stability at higher temperatures is essential. In Figure 5, the product under test doesn't show any change in the active ingredient composition before and after being autoclaved at 121R C, indicating that the compound is thermostable. These results ensure that the SBP is stable and will have the desired biological activity in the target animal.

Microbial Load assessment

Herbal plants may be associated with a broad variety of microbial contaminants transmitted through soil or air as illustrated in Figure 6. They could be bacteria, fungi, or viruses. Multiple environmental conditions influence the microbial load, which has a significant impact on the overall quality of herbal goods and preparations. According to study reports, the most found pathogens are enterobacteria such as *E. coli* and *Salmonella*. Hence, microbial assessment of medicinal plants on procurement and SBPs after manufacturing is essential. ISO guidance suggests standardized protocols for aerobic mesophilic bacteria, yeasts, and moulds, *E. coli*, and *Salmonella* in herbal medicines as shown in Figure 7.

Assessment for toxic contaminants

Contaminants such as heavy metals, pesticides, and mycotoxins, if not maintained below safe levels, can lead to life-threatening toxicity in animals. To ensure the SBPs are safe, they should be tested for these contaminants. The samples can be tested for pesticide residues with Gas Chromatography – Electron Capture Detector (GC-ECD) and Gas Chromatography-Tandem Mass Spectrometry (GC-MS/MS). Heavy metal contamination can be detected using an inductively coupled plasma mass spectrophotometer (ICP-MS). Aflatoxin and mycotoxins can be detected using high-

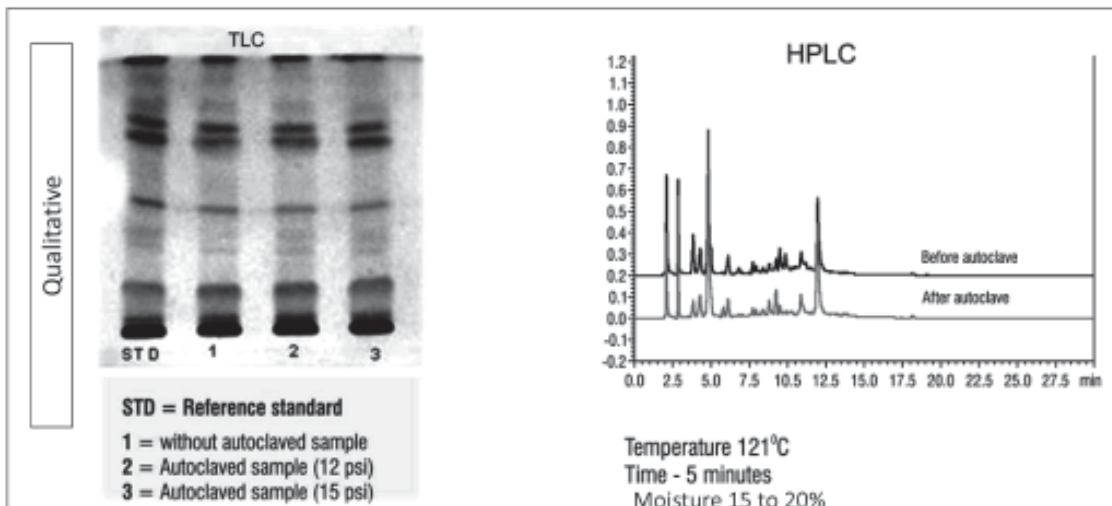


Figure 5: Thermo stability assessment for the SBP both qualitatively and quantitatively. SBPs should be thermostable.

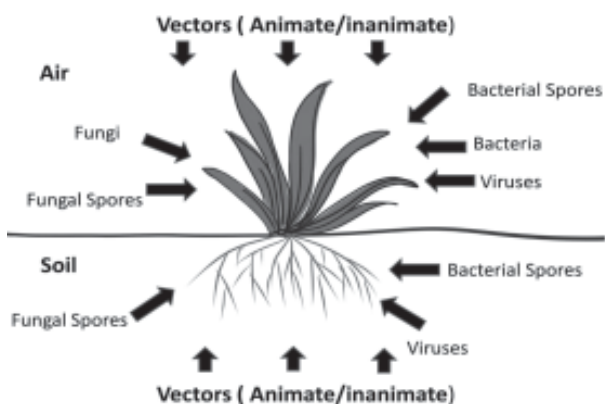


Figure 6: Schematic representation of the possible pathways of microbial contamination of medicinal plants

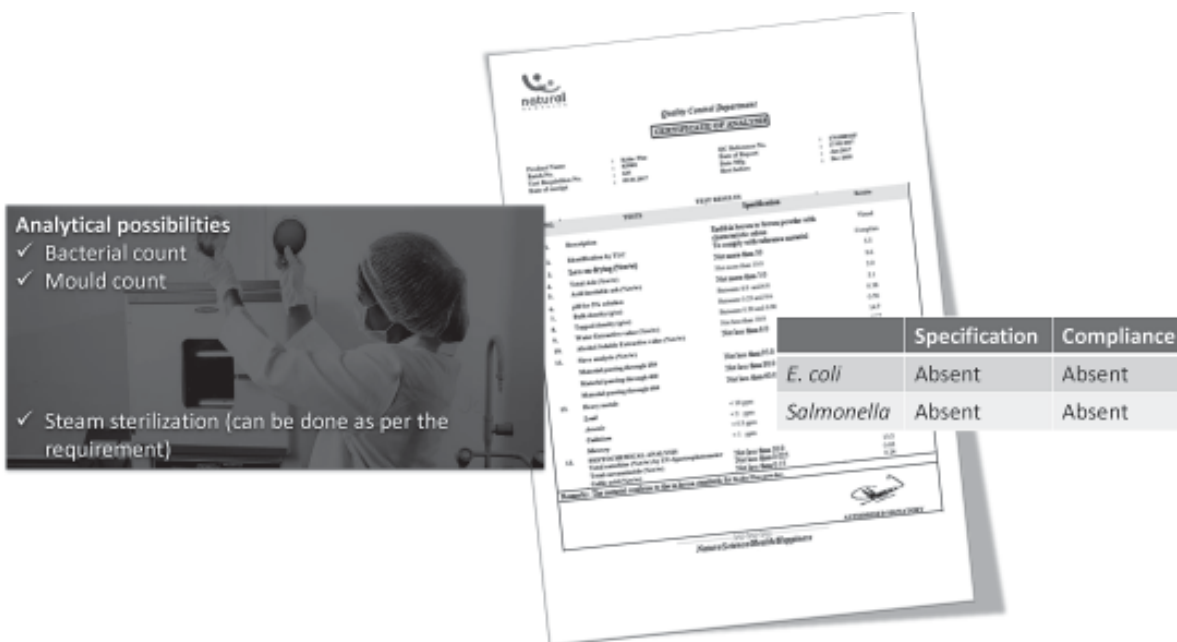


Figure 7: Microbial analysis of herbal products

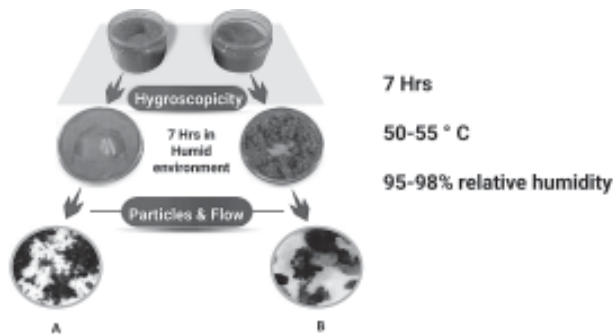


Figure 8: A test for the hygroscopicity of products A and B after 7 hours of storage under high humidity.

performance liquid chromatography with fluorescence detection (HPLC-FLD).

Assessment of Hygroscopicity

The SBPs should be non-hygroscopic, among other physical qualities. The ability of a substance to absorb moisture from its surroundings is known

as hygroscopicity. It's an unfavourable feature since it might cause lumps and prevent correct mixing with other feed ingredients. As a result, the SBPs must be designed to be non-hygroscopic. Figure 8 depicts a method for determining hygroscopicity. Product A is less hygroscopic as compared to B since it doesn't form lumps.

The efficiency of a feed supplement can be attributed to its physical properties as well as its functional efficacy based on the performance of the birds. Here we elaborately provided evidence of the physical attributes necessary to be tested in an SBP, which would keep the product stable and efficient for a prolonged period as well as make management of the product easy. In our next article, **Productivity Check of SBPs in the Field**, we shall elaborate on the scientific assessment of functional efficiency through their biological effects.

WANTED

Zeus Biotech requires experienced candidates to market and sell Biotechnologically derived Fermentation based animal feed supplements for the positions of

National Sales Manager,
Regional Sales Manager / Techno Sales Manager (West),
Area Sales Managers (Maharashtra, Andhra Pradesh and Telangana),
Area Sales Officers (Pune, Bangalore, Vijayawada / Rajahmundry and Hyderabad).

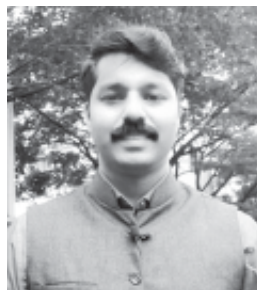
Experienced candidates having good communication skills and good customer relationships may send their resume to zbl@zeusindia.net with photograph and copy of testimonials.

ZEUS BIOTECH

Dietary Modulations for better feed efficiency

Dr Raina Raj, Head of Marketing, Natural Remedies Pvt. Ltd

Natural Remedies Pvt. Ltd. is Indian's number one herbal veterinary health care company growing globally in 30 countries under leadership of Mr. R. K. Agarwal, Chairman and Mr. Anurg Agarwal, MD & CEO. It brings solutions in terms of the health products for all species like ruminant, poultry, aqua and pets. We have world class R&D



Dr. Raina Raj

laboratory located in Bangalore where more than 40 scientists are working hard and have contributed in isolation of over 220 phytocompounds and published more than 100 monographs, 120 scientific articles in peer reviewed journals and over 15 patents. We have GLP certified *in vitro* laboratory for safety studies and we maintain the consistency of our product batch after batch.

The company organizes the webinar series Natural is future 2.0, where national and international renowned speakers deliver their speech related to animal and poultry health.

In the month of September, we hosted a webinar moderated by Dr. Chandan Chatterjee, Group Product Manager at Natural Remedies Pvt. Ltd. where eminent poultry scientist, Dr. S. V. Rama Rao conveyed his valuable speech on the topic "Dietary modulation for better feed efficiency".

Dr. S. V. Rama Rao focused on the importance of diet of poultry birds to improve their feed efficiency. He begins his talk with briefing the chicken intestine and its functions. He discussed that the gut of the poultry birds has the vital role in conversion of feed to egg as well as body mass. The layer birds can convert 110 gm of feed into 48 gm of egg mass. Whereas, the broilers consume 3.5 to 4 kg feed in 40 to 42 days to gain body weight of around 2.5 to 2.7 kg. Anatomically the digestive system of poultry bird consists of esophagus, proventriculus, gizzard, duodenum, jejunum, cecum, colon, rectum and vent. The gut has dual role in digestion as well

as in preventing entry of pathogens by acting as a protective barrier. The complex food materials are digested, dissimilated and absorbed into simple substances like glucose, amino acids, and fatty acids. The immune-components of the gut system of chicken consist of bursa of fabricius, caecal tonsils, meckel's diverticulum,

payer's patches and epithelial lymphocytes which have major role in protection barrier. Hence, it can be inferred that the birds with healthy intestine exert good immune system and superior health condition. He pointed out that the lower feed efficiency is due to the imbalanced diet, contaminated feed with mycotoxins and pesticides, pathogens and also the poor water quality and environmental stress. The typical poultry diet consists of maize & cereals of 50 to 65%, SBM & oilseed cakes of 25 to 40% and additives of 5 to 12%. The non-starch polysaccharide (NSP) is considered as anti-nutritional factor for poultry birds causing detrimental effect on nutrient digestion and absorption, increasing energy requirement for maintenance of gut and developing necrotic enteritis.

After narrating the gut anatomy and physiology of poultry birds, he initiated his elaborative discussion on the focused area like easy food, gut potentiates, inert fibre, enzymes and various stressors.

Easy food

Easily digestible food is also called baby food. It is known that hydrolysable protein is having higher digestibility than conventional protein. Hence, feed supplemented with 5 or 10% of hydrolysable protein from soyabean meal improves the feed efficiency among the birds.

Emulsifier

Most of the studies show that addition of emulsifier to the poultry feed has a positive impact. In one of

the studies, emulsifier showed progressive increase in feed efficiency as compared to control. It was found that addition of emulsifier at the level of 300 gm per ton of feed develop 1.668 food conversion ratio (FCR) whereas, the birds of control group show FCR of 1.697.

Effect of bile salt on FCR of birds

Bile salt has an important role in increasing the feed efficiency in poultry birds. One study showed that each ton poultry feed supplemented with 10 kg of bile salt improved the feed efficiency significantly. The study data revealed the FCR of 1.56 in test group in comparison of the control group showing FCR of 1.5888.

Marygold phenols and leutein can be used as an alternative to antibiotic growth promoter (AGP). They reveal significant improvement of feed efficiency as compared to the positive and negative control groups where feed supplemented with or without AGP.

Gut potentiates

Probiotics: Probiotics are live organisms which are beneficial for the gut of the birds and helps in maintaining healthy gut system with higher feed digestibility. In one of the study it was found that the addition of probiotics at the rate of 600, 1200 and 1600 million CFU per kg of feed revealed the FCR of 1.693, 1.705 and 1.654 respectively.

Now a days bacteriophage treatment in feed is gaining popularity in poultry industry as it has beneficial effect in digestibility. The dose rate at 1×10^6 PFU/ bird in drinking water showed better feed efficiency among the birds.

Na-butyrate as alternative to antibiotic growth promoter

Na butyrate has a potential impact in improving feed efficiency among birds. Na butyrate is dissociated into butyric acid at the lower intestine which promotes acid environment and prevents the growth of the harmful bacteria. Some studies showed that the use of betaine could increase the feed efficiency in birds.

Inert fibre: There are some oligosaccharides helpful for the growth of beneficial microorganisms

in the gut. It was observed that addition of 250 gm/ ton of GOS in broiler feed led to lower FCR of 1.56 as compared to the birds of control group. However, the optimum dose of the inert fibre is the most important to gain maximum feed efficiency in broilers.

Pure fibre supplementation

The supplementation of pure fibre in poultry diet is essential when the dietary fibre level is below 3% to improve the feed efficiency in birds.

Natural fibre

Supplementation of natural fibre like rice husk, soya husk or groundnut husk shows consistent improvement of feed efficiency in broiler birds.

Enzymes

Dr. Rama Rao narrated that there are 3 types of enzymes viz. phytase, NSP enzymes and protease having potential impact in poultry diet. Phytase superdosing has a significant effect on body weight leading to >6.5 unit of feed efficiency. Although, it should be performed in a neutral pH environment of 6.5 to 7.0 for obtaining optimum result. Moreover, combination of phytase with inositol improves the feed efficiency among birds. Cocktail enzymes as well as enzymes in combination of probiotics significantly improve the feed efficiency and body weight in broiler birds. We can remarkably reduce the FCR after using the cocktail enzymes. In case of layer birds cocktail enzymes help to save around 4.5g feed per egg. Supplementation of xylanase enzyme is also important in improving the feed efficiency, however, higher levels of xylanase i.e. more than 600 unit/kg is also detrimental. Supplementation of alpha-galactosidase in feed improves FCR by 6 units.

Papain

Supplementation of papain at a rate of 1000 gm per ton of feed had shown improvement in body weight gain of the broiler birds as well as feed efficiency as compare to the control group.

Summer stress management

Dr. Rama Rao elaborated that in summer season the feed intake as well as feed efficiency fall

drastically. Addition of guanidinoacetic acid (GAA) during summer season at the rate of 600g and 800g per ton of feed improves the FCR of the birds and shows positive impact in reducing heat stress. Betaine is another feed additive which helps to increase the feed efficiency by approximately 6 units per bird in the summer season. It regulates the osmolaritic tension of the cells and retains the minimum water level required for normal functioning of the cells.

Dr. Rama Rao concluded that supplementation of poultry diet with feed additives like emulsifiers, bile salts, enzymes and probiotics helps to improve the FCR and ultimately save the feeding cost which is beneficial to the poultry farmers. The questions addressed during the session are as follows:

Explain the synergistic effect of various supplements in increasing feed efficiency?

Dr. Rama Rao: There are feed supplements which show synergistic response at gut level and improve feed efficiency e.g. NSP enzymes and probiotics. However, not all substance will show the synergistic effect at gut level.

How to enhance caecal microbial fermentation and what will be its direct impact?

Dr. Rama Rao: Strategic targeted delivery of butyric acid, essential oil and probiotics directly at the posterior part of the intestine or caecum helps to reduce the pathogenic bacteria population like *Clostridium spp.* and enhances feed efficiency.

Does betaine hydrochloride show similar effect like anhydrous betaine in osmoregulation and thermoregulation?

Dr. Rama Rao: Betaine is naturally better adapted in the cellular level of biological system. However, higher concentration of betaine hydrochloride or sulphate may have some negative impact. Betaine anhydrous is adapted well by the cells.

How beneficial are the phytogetic compounds in improving feed efficiency?

Dr. Rama Rao: Marygold phenols and leutein show good results as compared to AGP in chickens. So the phytogetic additive can be beneficially used without any side effect as these are derived from natural sources.

High energy low protein or high protein low energy which diet is recommended?

Dr. Rama Rao: We need to provide a balanced energy and protein diet to the birds. They should not be less than the recommended level in diet.

Are there any incompatibilities among the feed ingredients to be considered while formulating the feed? Does any ingredient show antagonist effect with choline chloride present in feed?

Dr. Rama Rao: The choline is very much hygroscopic material. It may interfere with some nutrients like amino acids, vitamins and trace minerals antagonistically. So, choline chloride should be added separately to protect the food ingredients which are oxidative in nature.

Can we use higher dose of Na-butyrate or enzyme to improve absorption of multiple ingredient diet used for commercial layer?

Dr. Rama Rao: All macro or micro nutrients should be provided only at optimum recommended doses. However, super dosing of Na-butyrate may have beneficial effect.

Can feed additives with immunomodulating property enhance feed efficiency?

Dr. Rama Rao: The compounds which help to improve gut development and function, can definitely improve the feed efficiency. However, the feed efficiency can be improved upto the genetic potential of bird not beyond that.

Is there any way to improve feed efficiency at the cellular level?

Dr. Rama Rao: There are many literatures available regarding this topic, but more trails and investigations are required.

Is it possible to have 1:1 FCR in case of present breed?

Dr. Rama Rao: Theoretically it may be possible when there is 100% digestibility and assimilation of the feed achieved in genetically modified birds with improved feed efficiency. However, in reality there are some physiological limitations which prevent to achieve this goal.

PRESS RELEASE

Annual General Body Meeting of Poultry Federation of India

Poultry Federation of India (PFI) an apex and renowned association of poultry farmers, breeders, equipment manufacturers, pharmaceutical companies and all allied industries, is organizing its 32nd Annual General Body Meeting (AGM) at Hotel Pullman, Aero City, New Delhi on December 23, 2021. The Delegates registration fee is Rs.3,000 per person till December 15, 2021 and Rs.4,000 for on Spot Registration at the AGM Venue. This includes Lunch, High Tea, Cocktail, Networking Dinner and attending Musical Entertainment Program on December 23, 2021.

For more details on sponsorship you may kindly contact:

- Mr. Ramesh Chander, President, Mobile Number: 9215944454 and 9416015834
- Mr. Sanjeev Gupta, Vice President (HQ), Mobile Number: 9810016290 and 8860631632
- Mr. Ranpal Dhanda alias Bittu, Secretary, Mobile Number: 9215700133 and 9416035827
- Mr. Ricky Thaper, Treasurer, Mobile Number: 9810016293 and 9910016293

The details of sponsorship at PFI 32nd Annual General Body Meeting:

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The Sponsor, companies can display their advertisements in form of standees/ banners on the prominent locations inside the conference hall. Table space will also be provided to the sponsors near the hall entrance. The logos of all the sponsors shall be printed on PFI Invitation cards, welcome banners, main backdrop banner and on all PFI promotional banners. All sponsoring companies will be honoured by presenting them mementos during the AGM. The Bank Account details are mentioned hereunder:

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A/C Number: 67211011 0006234

Bank Name: Bank of India

Branch Address: Rai, Sonipat (Haryana)

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PAN Number: AATP0444K

Kindly note that PFI has blocked 80 rooms at Hotel Pullman, Aero city, New Delhi at special rate of Rs.6000 (Single / Double Occupancy < Inclusive of Taxes & Complimentary Breakfast). If any requirement for the room reservation at Hotel Pullman, Aero city, New Delhi is there, kindly send the confirmation email at the earliest.

Looking forward to welcoming you all 32nd Poultry Federation of India AGM on December 23, 2021. With everybody's support and cooperation, we all will make this AGM a grand success.



Team - PFI

Email: info@poultryfederation.org & poultryfederation@gmail.com

Website: www.poultryfederation.org

"Adisseo" family employ the occasion of the 25th anniversary of world egg day 2021 with the social responsibility to overcome the protein deficiency and hunger in Indian subcontinent.

Adisseo Animal Nutrition Pvt Ltd, explored the opportunity of 25th anniversary of world egg day across the country, contributing a social responsibility to fight against protein deficiency and hunger.

Besides Adisseo team actively used this occasion to present scientific facts for the social awareness to overcome the myths and misbeliefs about eggs in the society.

The message was mediated across the country via different well-planned events for the same purpose viz, bicycle rallies, food camps and webinar. The egg and food distribution camps were arranged by team Adisseo at different locations all over India in cities like Nagpur, Hyderabad, Mumbai, Coimbatore, Karnal & Pune.

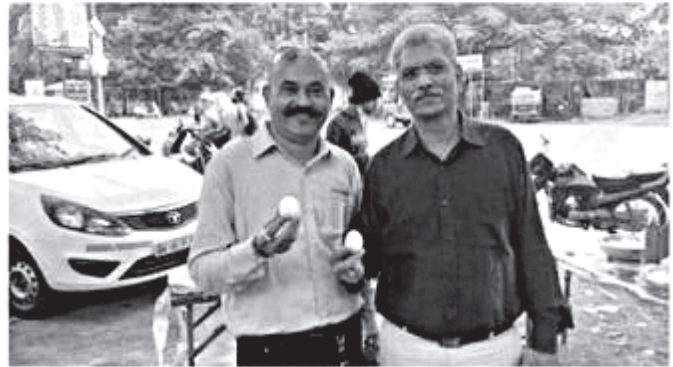
This helped distribution of meals and eggs in hospital, orphanages, leprosy rehabilitation centers, schools for the specially abled children, old age homes as well and for the needy population as well. Not only the meals, eggs were distributed but at centers like Nagpur, different egg recipes were publicly demonstrated.

1) Egg and meal distribution camps-

The event in Nagpur attracted people from all strata and visited by kids to young budding veterinarians to Retd. Professor and working professors from Nagpur Veterinary College, to the President of Vidharbha Poultry Farmers Association.



Dr Sachin Ingewar & Dr Pritish Ramteke driving the road show for demonstrating various egg recipes at Nagpur and distributing eggs for the needy people.



Dr Sachin Ingewar, with Dr Raja Dudhbade, President Vidharbha Poultry farmers Association, Nagpur.

In Mumbai, Adisseo celebrated World Egg Day celebration with Mulanchi Balwadi, Kolegaon, Dombivili, Thane (An initiative of Eashan Shreeya Foundation).



Dr. Masood Ahmed from Adisseo made a humble attempt to contribute for the children's well-being by distributing Yojana Power Eggs on the occasion of "World Egg Day" on 8th of October 2021.

In Hyderabad, Dr. Sriharsha planned the egg day celebration with residential school for the hearing-impaired children. He also explained the staff and founder members the importance egg consumption in young kids especially for the deaf and dumb kids.



Dr. Sriharsha from Adisseo exploring the egg day event responsibly exhibiting social responsibility arranging event with specially abled kids.



In North India, the Team Adisseo identified the neediest center of leprosy rehabilitation for recommending and providing the eggs. The team also distributed the eggs in nearby needy population with awareness campaigns for the egg consumption.



Dr Vikas Shukla along with Mr.Niraj Gupta and Mr.Arvind Chakshu Sharma from team Adisseo, arranged the egg camp at various location in and around Karnal distributing eggs in leprosy rehabilitation centres as well.



In tamilnadu It was planned to distribute the egg-meal in the hospitals for the needy people at Coimbatore. The hygienically prepped egg-meal is distributed amongst the needy population coming in the hospital for the treatment.

Team Adisseo in the southern India, Mr. Ponnambalarajan Nagarathinam, Mr. Thirumudirajan Sukumar and Dr Chandramohan Sivanandan executed the well planned event distributing the meals at different locations across the city of Coimbatore.

1) The Bicycle Rally-

Adisseo also contributed the multi-stage event for egg promotion joining hands with the Srinivasa harcheries at Hyderabad where bicycle riders campaigned for week spreading awareness about health and nutrition especially emphasising the importance of eggs in human nutrition.



Mr. Rajkumar Nangunoori and Mr. Shaik Jilani with the Srininasa team during the bicycle rally on egg day event at Hyderabad.

1) Awareness webinar & myth-breaking session by the technocrats-

Adisseo being a science speaking entity arranged this event exploring scientific facts about eggs, to overcome misbeliefs about egg consumption in the society.

Assuming the exhaustive morning activity by the team a short session webinar was planned inviting the critical technocrats from poultry and food industry.

The short sessions from the food technologist Dr Devashree Vaidya deshpande was exploring the golden elements in the egg. She discussed about the presence of immunity booster selenium in the eggs that helps the immunity and recovery from various viral diseases including COVID 19. She also explain the nutritional significance of including the eggs in the diet. The eminent technocrat Dr.Ajit Ranade, Dean Bombay veterinary college explained the scientific facts about the eggs through his mythbusters season. Common misconceptions about eggs in the society were scientifically explained by Dr.Ranade with his lovable story in short session of half an hour. The first Asian Chairman of International egg committee, Mr.Suresh Chitturi Rayudu was the special guest for the session. He shortly narrated the role of egg, layer industry for the social reforms.Dr. Prasad Kulkarni has moderated the webinar on behalf of Adisseo. The webinar was viewed by more than 115 delegated and was well appreciated for its meaningful content.



Dr Devashree vaidya-deshpande, Dr Ajit Ranade, Mr.Suresh Chitturi Rayudu & Dr Prasad Kulkarni in discussion during the webinar on "Nutritional Biosecurity".

The series of events conducted by Adisseo were very successful. As intended to bring the awareness in society about the misbeliefs about egg consumption by the scientific facts. The opportunity on 25th anniversary of world egg day was well explored by team Adisseo in Indian subcontinent team being socially responsible to fight against hunger and protein deficiency.



Biogas Specialist WELTEC BIOPOWER Takes Over Operations of AD AGRO Reinforced Market Position, Continued Growth



With immediate effect, the operations of the biogas plant manufacturer AD AGRO have continued under the umbrella of the WELTEC Group in Germany. left to right: Jens Albartus, Franz-Josef Sextro (WELTEC-Group); Uwe Heider (AD AGRO).

With immediate effect, the operations of the biogas plant manufacturer AD AGRO have continued under the umbrella of the WELTEC Group in Germany. „Through the merger of the business fields of AD AGRO and WELTEC, we establish promising synergies in the entire value chain of biogas and biomethane“, explains Jens Albartus, Director of the biogas specialist WELTEC BIOPOWER.

AD AGRO was faced with the decision of implementing a suitable succession strategy. The goal was to perpetuate the successful use of the expertise and experience gained in almost 200 biogas projects. The profile of AD AGRO fitted snugly in WELTEC BIOPOWER's spectrum of products and

services“, explains Uwe Heider, Managing Partner of AD AGRO.

Both companies are specialised in custom-tailored, technically mature plants. Thus, this step drives the expansion of our market position and our growth“, underlines Albartus. He continues: „In this connection, we are happy to join forces with Mr Heider, a market expert who will henceforth perform sales activities for WELTEC.“

AD AGRO had been established as BD Agro Renewables by the Big Dutchman Group in May 2006. In the context of a management buy-out, the business was taken over by its Director Uwe Heider as of 1 October 2012 and continued to operate under the name „AD AGRO systems GmbH & Co. KG“.

We guarantee AD AGRO customers continuity in the business relationship, and with our WELTEC



Director Jens Albartus: „Through the merger of the business fields of AD AGRO and WELTEC, we establish promising synergies in the entire value chain of biogas and biomethane.“

Group, we will be able to offer an even broader range of products and services. Our team of process engineers, biologists, service engineers and other specialists boasts a wealth of experience gained in more than 350 biogas plants that we have planned and built", says Albartus, drawing attention to the benefits of bundling the businesses.

Expressing his confidence that by means of the takeover, WELTEC will further expand its international market position, he adds: „In the coming years, the biogas landscape will change and play an even more important role in reducing carbon emissions. Our positioning enables us to effectively take part in this process.“

Company Portrait

The WELTEC Group from Vechta, Germany, has developed into a globally leading specialist for the construction and operation of biogas and biomethane plants since it was founded back in 2001. The Group designs, plans and sets up energy plants, operates them on a permanent or temporary basis, provides 24/7 service and delivers sustainable usage concepts for output flows, thereby covering the entire biogas value chain.

The establishment of individual, technically mature solutions up to a plant size of 10 MW is one of the strengths of WELTEC BIOPOWER. The high proportion of custom-developed components is a key success factor. Moreover, the use of stainless-steel technologies ensures flexible substrate input, quick and inexpensive assembly and a consistently high quality standard, regardless of the location. Follow-

ing the commissioning, WELTEC's mechanical and biological service plays a significant role in ensuring the plant efficiency.

The company also boasts a wealth of experience in the field of biogas generation and utilisation. The company's nine decentralised plants generate 96 million standard m³ of biogas a year. Most of it is processed to biomethane and made available to energy suppliers and petrol station operators via the public gas network. Additionally, at 16 locations in Germany— e.g. in the field of horticulture, housing construction and healthcare as well as communities – the biomethane is used for generating heat within the framework of WELTEC energy contracting.

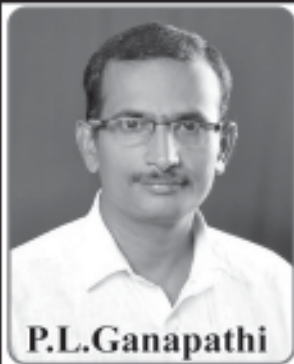
The biogas specialist is well aware of the importance of customer and investor proximity. Accordingly, the Group's sales and service network spans the entire globe. The range of customers includes businesses from industries such as agriculture, food, waste and wastewater. So far, the 120 employees of the WELTEC Group have implemented more than 350 energy plants in 25 countries on five continents. These plants save about 485.000 tons of CO₂eq a year.

If you publish the press release please forward a copy to us:

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Chick Feed Tray



Chick Drinker



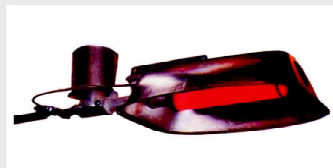
Drinker
(Assemble Valve System)



Deluxe Drinker
(Standard & Large)



Feeder



Gas Brooder



Chain Link Mesh



Jumbo Drinker



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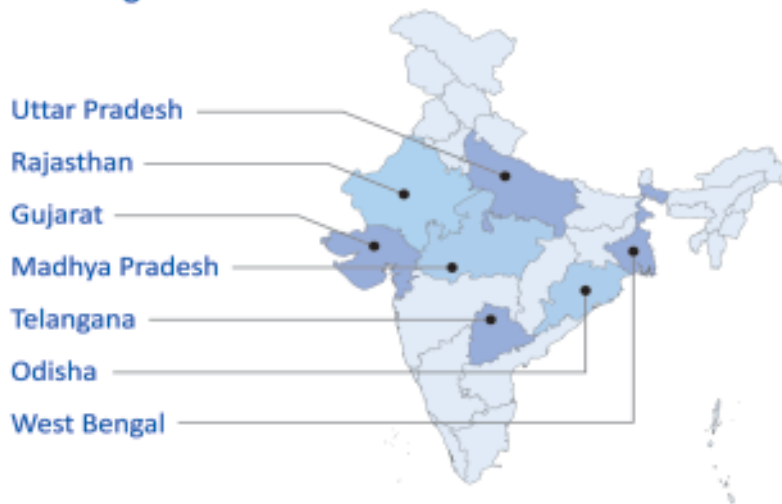


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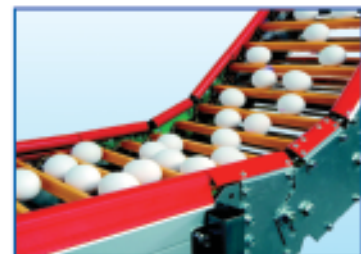
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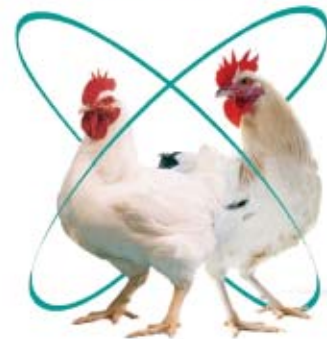


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