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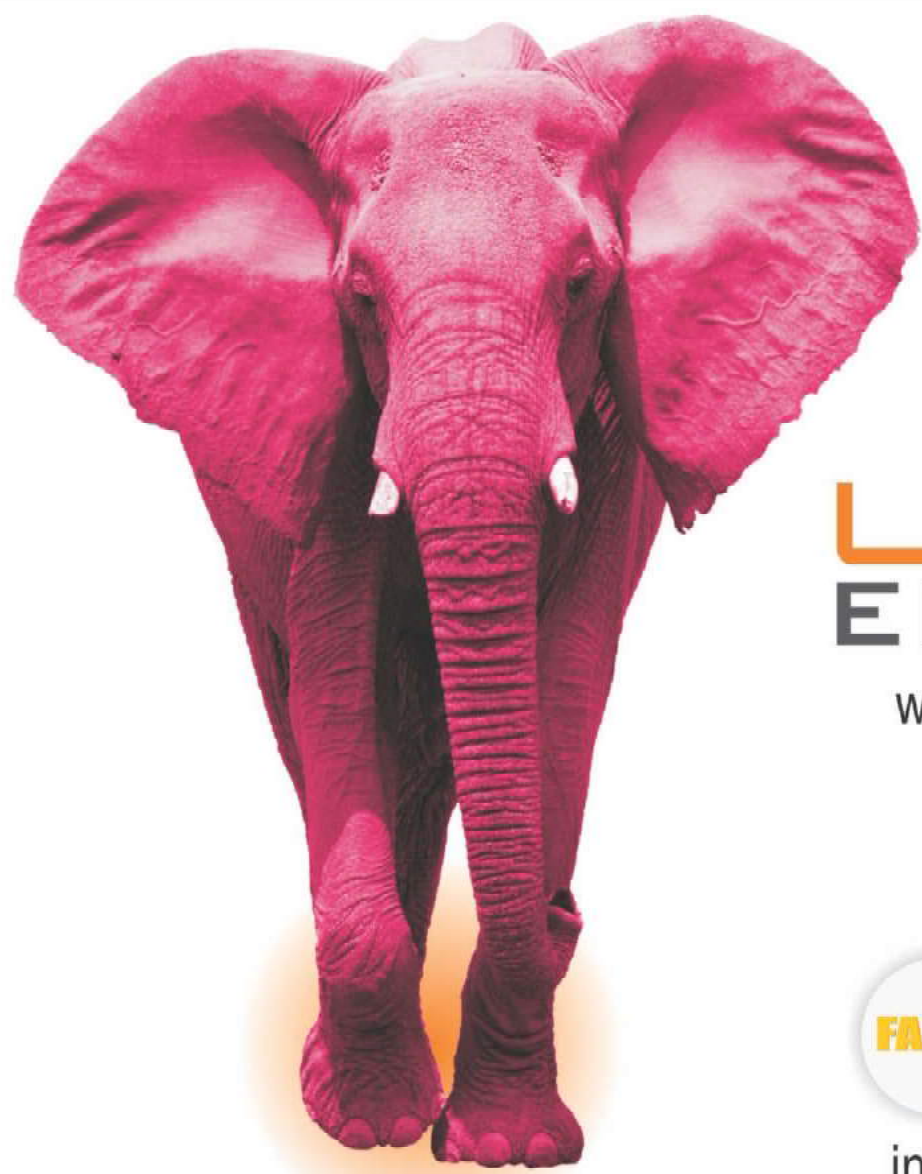
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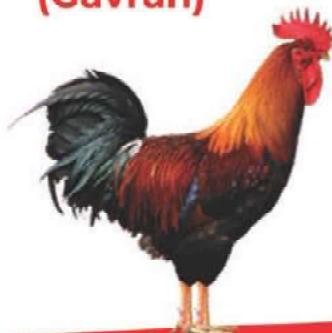


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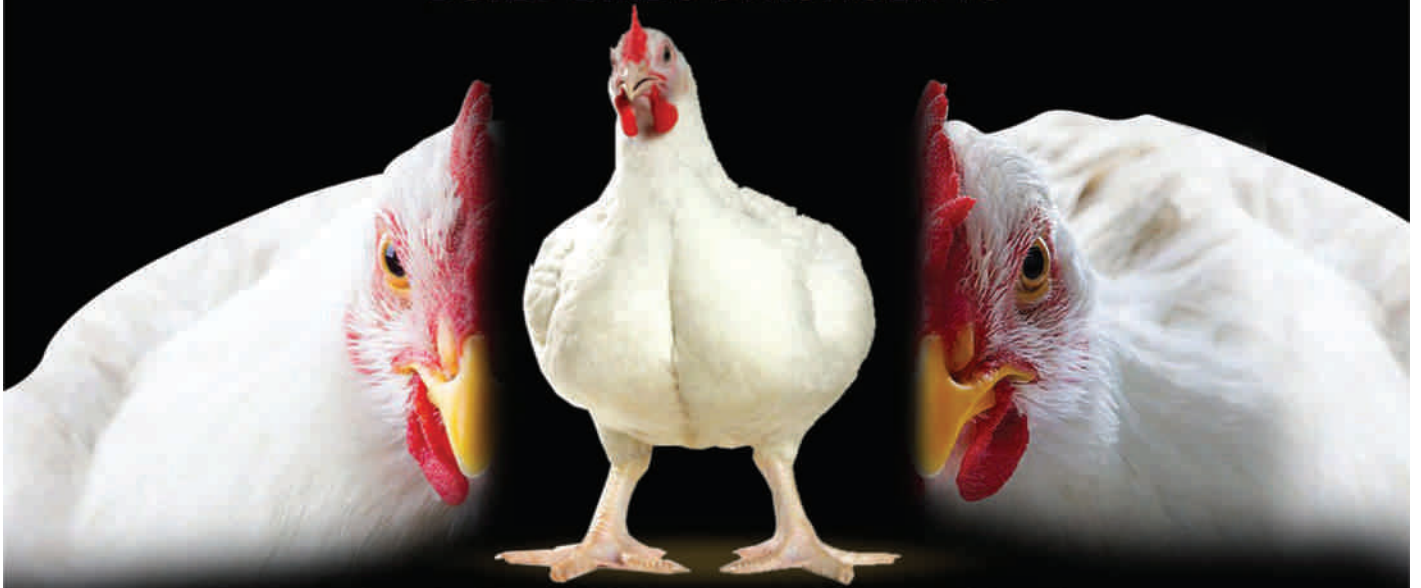
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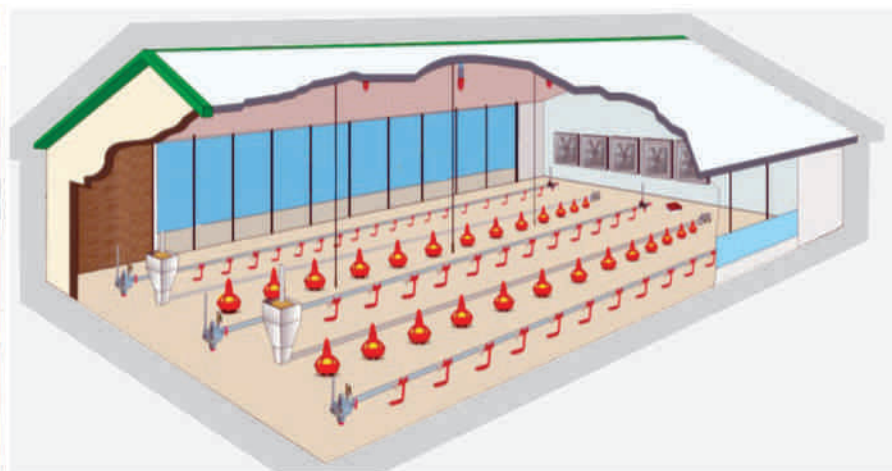
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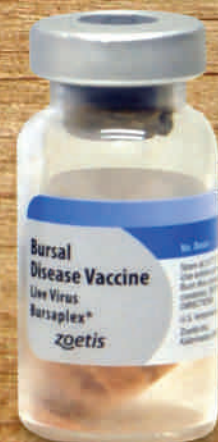


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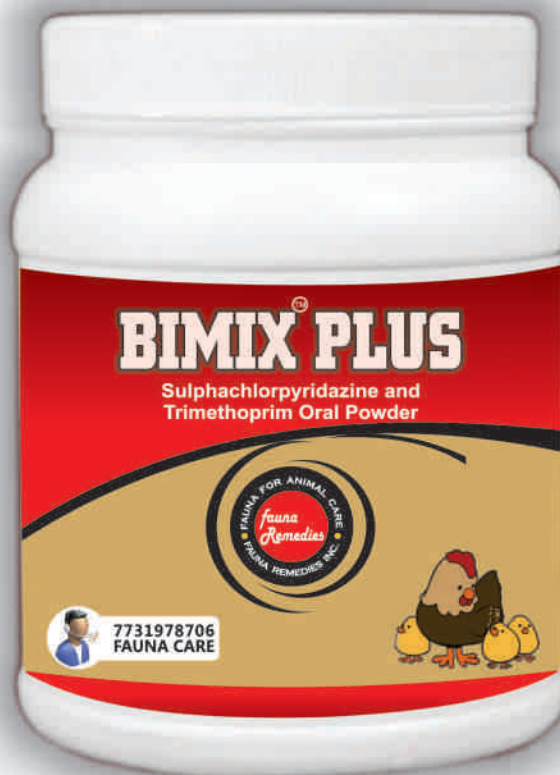
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Aviagen India Hosts Second Annual Leadership Summit

Company is committed to sharing knowledge to benefit customers and the industry at large



Back row from left: Dr. Bidgar – Vice President Poultry Operations – Baramati Agro; Gulrez Alam - Director – Indian Broilers; Dr. Chandrasekar - Managing Director – SKM Animal Feeds and Foods; Pradeep Krishna – Director SKM; Debaraj Das - Chief Operating Officer, Poultry – Baramati Agro; Dr. Vikas Dhull – Director – Skylark Hatcheries; Paul Gittins – Senior Advisor – Aviagen India; Kowshikraj - Operations Manager – Aviagen India; Dr. Jaiswal – President – Indian Broilers; Suresh Chitturi – Managing Director – Srinivasa Hatcheries; Ashish Gupta – Managing Director - Sampoorna Feeds; Jagbir Dhull – Managing Director - Skylark Hatcheries; Bahadur Ali - Managing Director – Indian Broilers; Marc Scott – Business Manager – Aviagen India; Putu Yashita – Vice President Poultry – Japfa Comfeed India

April 26th, 2021 – Udumalpet, India. – Aviagen® India was pleased to welcome customers from SKM Feeds, Indian Broiler Group, Baramati Agro, Srinivasa Farms, Japfa Comfeed, Skylark Hatcheries and Sampoorna Feeds to the Taj Palace Hotel in Mumbai during March 25-26 for its second Annual Leadership Summit.

Full agenda of beneficial topics

Aviagen customers benefited from speaker knowledge on current hot topics such as genetic progress, world poultry trends, and the increasing influence of social media and branding in the commodity market. To ensure a safe and secure environment for all, Aviagen India took necessary safety precautions and adhered to the social distancing guidelines surrounding the pandemic. Due to ongoing travel restrictions, speakers addressed attendees virtually.

Keynote speaker Dr. Santiago Avendano, Aviagen Genetics Director, shared his insight on future genetic progress for the Ross 308 AP®, and explained how the merging of genetics and technology has produced a powerful tool of rapid progress in bird performance.

Rupert Claxton, Meat Director, GIRA Foods, was upbeat about the prospects for the global market and its growth

in poultry meat production and consumption. Despite concerns about imports, the development of processing and the reoccurring challenges posed by avian diseases, he predicted that the industry is robust enough to withstand the headwinds and continue to become a significant player in the global poultry market.

“There are challenges to any event taking place under the current circumstances. However, Aviagen is committed to its customers and the team ensured that we all were well taken care,” commented Dr. R.K.Jaiswal, President, Indian Broiler Group. “Aviagen’s supremacy in broiler genetics speaks volume through Ross 308 AP performance. Aviagen has become successful through a robust and diligent R&D process based on the consumer market. This day-by-day progress as shown by Dr. Santiago has built our confidence in the Ross 308 AP product and service provided by the team.”

The two-day meeting wrapped up with a presentation from Bob Dobbie, former President of International Business for Aviagen, who shared experience from his 45 years in the poultry industry. Bob gave insights for managing diverse markets, different cultures and growing markets in various stages of development. He emphasised the



Dr.Chandrasekar and son Pradeep from SKM Animal Feeds and Foods



Mr. Bahadur Ali, Managing Director, Indian Broiler Group

importance of succession planning and the need to focus on building the next generation of industry leaders.

Positive response to event

“I am extremely happy with the outcome of our second leadership summit. The level of engagement by attendees, exchanging of brilliant ideas, and strengthening of our common bonds were inspiring to the team and me. I look forward to our next summit and each and every opportunity to meet with Aviagen’s valued customers throughout the country,” remarked Dobbie.

“The genetic potential of the Ross 380 AP continues to improve, and we are committed to providing our producers with knowledge and advice to maximize this

potential, as well as strengthen their success in an ever-evolving market,” added Marc Scott, Aviagen India Business Manager.

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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Mr. Gulrez Alam, Indian Broilers, addresses virtual speaker Rupert Claxton



Marc Scott thanks Mr. Debaraj Das and Dr. Shivaji Bidgar from Baramati Agro for attending the event.

Rabbit Farming: to Double the Income of Farmers

Suraj Amrutkar¹, Suhaz Amrutkar², Bharti Deshmukh³, Vinod Gupta⁴ and S. K. Gupta⁵

1. Scientist, Poultry Science, SKUAST-J, Jammu.

2. SMS, Animal Nutrition, Parbhani Veterinary College, Parbhani, MAFSU, Maharashtra

3. Assistant Professor, GADVASU, Punjab

4. Senior Scientist & Head, KVK Samba, SKUAST-J, Jammu

5. Professor & Librarian, Medicine Division, SKUAST-J, Jammu

Introduction: Rabbits are being domesticated in our country from a long time. Rabbit rearing is a profitable business. Rabbits are looking cute and small sized animal also. Some peoples can raise the rabbit as pet also. It can be reared in small land without much investment. They are a cute and soft and therefore are the good source of meat. There is very high demand of rabbit meat in the market. It is such as business where investment is low and profit is so high. There is high demand for fur obtained from Angora rabbits in India as well as from foreign. Rabbit meat is consumed by special population in India in which it further adds income from fur marketing. Good shed is necessary for keeping the rabbits to keep save from adverse weather condition, heavy rain, hot sun and various types of predators like dogs and cats etc. Rabbits adapt to a broad range of environmental conditions and are found in the wild and domestic state in all parts of the world. Rabbit has a good potential to produce meat, fur and wool. That's why; rabbit is a good source of raising the income of farmers.

Advantage of rabbit farming:

Forage convertor: Rabbit can produced meat from the feedstuffs which are unfit for human consumption which is cannot utilized efficiently by other livestock species. Rabbits can conveniently be reared high forage low cereal diets with low grain diets.

Easy to rear in Urban and Rural area: Rabbits are suited to both commercial and backyard farming rearing. It can be reared in both rural as well as urban environments.



Suraj Amrutkar

Docile nature:

Rabbit is a docile animal and pleasurable to look at and as such it attracts a large variety of people viz. small/marginal farmers and urban breeders.

Better feed convertor:

Rabbit can utilize plant protein more efficiently as compared to other livestock. The digestibility of protein in forage is more due to direct

utilization of amino acids. Quality forages like Lucern, Berseem, Cow peas, clovers, rye grasses and oats in appropriate proportion are more efficiently converted into meat and wool by the rabbits than that by other livestock.

Fast growth:

Rabbit have faster growth rate and better feed conversion ratio with feed: weight gain ratio as good as 1: 2-3 on dry matter basis. They are more efficient than poultry and pig because of consuming roughages than concentrates.

Low nutrient requirement:

The female rabbit with 16 offspring per year required less than 1/3 the feed energy than a cow with 0.9 calves and less than 1/2 consumed by a ewe with 1.2 lamb for each kilogram of market weight.

Stable reproduction:

The rabbit can be bred anytime of the year unlike any other type of livestock. Rabbit has peculiarity that a doe can be bred even at the day of parturition. Rabbit can lay 20-40 young ones per year. Rabbit maturing 30% faster than the other animals because of three main factors i.e. short gestation (30 days), faster weight gains and early sexual maturity rate. The rabbits also show higher biological

productivity by producing 10-25 times her weight in offspring as compared to cow producing about 0.6 times and the ewe 0.8 times her weight during one year period.

Meat features: There is no religious limitation for the consumption of rabbit meat like pork. It is highly delicious and high in protein value with comparatively low in fat and calories. Young rabbits can attain about 2.0 kg live weight in 12-14 weeks on high concentrate diet. The dressing percentage of rabbit is about 50%.

Expenditure in rearing: The rearing of rabbits is comparatively cheaper as compared to livestock. The cost of rabbits, house, feed *etc.* are comparatively less expensive.

Adaptation: Rabbits are very flexible in adapting to varied climatic conditions and do not produce any serious problem.

Genetic variability: There is a high degree of genetic diversity in rabbits. These differences are seen in growth rate, reproductive efficiency, disease resistance, survival, material qualities and productive traits (milk, meat, fur and wool). This wide variability in productive/ reproductive traits is very useful in breeding and selection programme.

Different Breeds of Rabbits:

In the world, there are many breeds of domestic rabbits and all have different qualities. Out of the number of breed and varieties; about 38 breeds and 87 varieties are well hair coat and other characteristics.

For wool production:

Angora rabbit is reared for wool production. It usually white and albino but some coloured varieties also developed for the utilization of colour wool. Normally the main demand of Angora wool is of white colour and long staple for uniform dyeing and processing.

- i) **German Angora:** Origin Germany, wool yield 700-1000 g/year, white fine quality, 2-4 % guard hair, adult body weight 3-5 kg.
- ii) **British Angora:** Origin U.K., wool yield 400-600 gm per annum, white lustrous fine quality,

guard hair 2-4 %, adult body weight 2.5 to 4.5 kg.

- iii) **Russian Angora:** Origin Russia, 300-400 gm/annum. White, medium fine wool, 10-20% guard hair, adult body weight 3.5 to 5.5 kg.
- iv) **Crossbred Angora:** Origin (2 breed -3 breed cross) India, well adapted to Indian conditions, wool yield 500-600 gm/year, wool white, medium fine, guard hair 4-8%, adult body weight 3-4 kg.

For Meat/ Furskin production:

The most common breeds for this purpose are New Zealand White, White California, Soviet Chinchilla, Grey Giant, White Giant, Black brown, Dutch, Flemish Giant, Argente Champagne, Havana *etc.* The body weight of these breeds range between 3 to 6 kg in females and 2.5 to 5.5 kg in males. In developed countries, the rabbit raising for meat and furskin production is very common as the requirement of furskin and meat is quite high in these countries. Rex and Satin breeds of rabbit are mainly raised for quality furskins and the meat production is secondary characters. In our country, at the CSWRI Research Station, Garsa (Kullu), the following meat breeds were experienced for meat and furskin production.

New Zealand White	Imported from UK
Soviet Chinchilla	Imported from Russia
White Giant	Imported from Russia
Grey Giant	Imported from Russia
Black brown	Evolved at NTRS Garsa

For biological research and laboratory purposes:

New Zealand White, Californian, Dutch and black brown breeds are primarily being used for the research and laboratory purpose.

For Fancy/Hobby purpose:

The most important breed under this class is Polish, Palmino, Havana, Beveran, New Zealand Red, English spot White, Dutch *etc.* These animals are lighter in body weight and very fancy to look at. In

developed countries, hobby and fancy shows are common, but in our country it is not up to date. Some isolated shows are arranged for marketing of fancy rabbits.

Nutrition and Feeding management:

Rabbit is a herbivorous animal and its digestive system. The alimentary canal of the digestive tract is quite long and capacious. Rabbit eats hay leaves. The peculiarity in the rabbit digestion is the process called “Coprophagy” or the pseudo-rumination. Rabbit produces two types of faecal pellets (droppings); one is the normal hard dry pellet and the other is a softer and wet pellet which is passed at night and eaten by the rabbit direct from the anus. These soft pellets of partially digested food contain proteins, energy and vitamins etc. Coprophagy has thus a special importance in the physiology of digestion in rabbits. This process starts in young rabbits of 3-4 weeks of age when they start eating solid feed in addition to mother milk.

Reproductive traits of Rabbit:

Rabbits mature at diverse ages depending upon breed, phase of nutrition, climatic conditions and other environmental factors. Small breeds mature earlier than larger breeds and females mature earlier than male. Rabbits of smaller breeds reach breeding age at 5-6 months; medium breeds 6-7 months and large breeds at 8-10 months. Female rabbits do not exhibit oestrus cycle as is observed in many other mammals; as such these can be mated anytime of the year. Female rabbit is always taken to male rabbits cage for mating purposes as the breeding does do always taken to male rabbits cages and become agitated and aggressive. Mating is got done either early in the morning or in the evening. The doe which is ready for breeding will allow the buck to nuzzle and mount. It will allow mating raising her rump a little to facilitate penetration of penis in the vagina. The breeding buck after mounting gives quick thrusts and after ejaculation and successful mating it falls to one side or backwards emitting a typical sound. The gestation period in rabbit is about 30 days. The process of giving birth is called “kindling”. The breeding should be planned in such a manner that

about 4 litters /doe are obtained in a year. The nest box with adequate nesting materials i.e. coir, rice straw, or dry grass should be placed in the female cage around 25th day of the pregnancy to facilitate the doe to prepare for normal kindling or parturition. The doe will also pull wool from her chest, legs and paws to prepare the cozy nest for the kits.

Kindling:

The new born babies of rabbit are born naked, hairless and with closed eyes. The colour of the skin of newborn is pink. The newborn’s hairy coat starts growing after 5th day and they open eyes between 10-14th days. If the nest box of rabbit is soiled then it should be replaced by fresh and dry bedding. The doe with kits should not be disturbed often. The lactating doe nurses the kits from her eight teats once in the morning/ evening and that too for 5-10 minutes only. If there is more than teat litter size, some of the kits may be fostered to another doe with a lesser number of litters of the same age.

Mortality of Infants:

Sometimes the female rabbit crushes or eats the infants. This is cannibalism occurred in female rabbit due to unbalanced feeding, inadequate watering and disturbances and or stress to the mother. Above measures have to be corrected to reduce this problem. In case the doe repeats the same for the second third time, it should be culled/ removed from the flock because it may be due to some deleterious genetic characters.

Meat quality:

Rabbit meat is highly nutritious which are rich in protein and low in fat and calorie value. This is the reason why meat is a well suited product for the human.

Nutritional value of rabbit meat:

Animals	Protein (%)	Fat (%)
Rabbit	20.8	10.2

Rabbit manure:

The rabbit manure is very useful as organic manure in the agricultural field and for horticulture purpose. The rabbit manure can be applied as raw animal

manure from rabbit sheds to the vegetable, agricultural plots or fruit plants. It does not cause any damage to the crop/plants as done by raw cattle manure. The rabbit manure is more affluent in nitrogen, phosphorus and potassium compared to cattle manure. The rabbit manure can also be used for the earthworms production. The production quantity of manure per year by rabbits depends upon the size, age and breeds of rabbits and the type of feed. However, on average an adult rabbit produces about 100-150 kg manure per year. Rabbit manure may be applied to the soil for feed crops @ 5-10 tonnes per Hectare.

Value of manure of rabbits:

Type of animal	Nitrogen (%)	Phosphorus (%)	Potassium (%)
Rabbit	3.7	1.3	3.5

Constraints in Rabbit production:

Poor thermal control mechanism: Rabbit can maintain their body temperatures and health in winter owing to their hair coats. During hot weather, rabbits show discomfort and poor thermo control mechanism due to lack functional sweat gland. Thus hotter/tropical climates are the major constraints in successful rabbit production.

High non-recurring cost: Although small scale and backyard rabbit rearing is economical but large scale and commercial rabbit farming requires quite costly infrastructure in shape of large sheds with electric, water and light management. In addition to the cost of housing, the initial cost of cages is another limiting factor for fast growth of commercial rabbit production.

Cost of feeds: As a backyard rabbit, it can be maintained on available forage, vegetables, fruits and other household food scraps, however for commercial rabbit production, a balanced, palatable and well acceptable ration is required. The availability of balanced feed in the country is limited and quite costly.

Need of better germplasm: Though, rabbit production in the country is only two decades or so

old, it has attained considerable popularity. The demand of better germplasm producing good meat/skins and angora wool is fast increasing; as such procure meat and rearing of good rabbit breeds by the state Government and other agencies is very desirable.

Need of well defined Market: At present there is no well defined market for rabbits and its products in the country. Marketing of angora wool, rabbit meat and fur, skins deserve due attention by the development agencies in order to popularized rabbit breeding.

Training, Research: For the planned and scientific rearing of domestic rabbit of wool, meat and fur skin production, strengthening of research, development, extension and training programs have to be done by the concerned agencies in the country.

Health management and Disease control:

Rabbit are suffering with a number of diseases but some of them are easily detected and measures are to be taken to reduce the incidence to others.

Respiratory diseases: Pasteurellosis: The causative organism of this disease is *Pasteurella multocida* which causes main respiratory diseases like snuffles and bronchopneumonia.

Snuffles, Wry neck, conjunctivitis and multiple abscesses are the some diseases of Rabbits.

Gastro Intestinal Diseases:

Coccidiosis: This disease is commonly observed in young animals and caused by *Eimeria* species of protozoa.

Gastro intestinal complex: These are the main fatal disease of rabbits affecting all ages and all breeds. These diseases may be manifested in four pathological conditions, viz. **Bloat, Mucoïd enteritis, Enterotoxaemia, Constipation/ Impaction.**

Other important diseases are **Mange, ear canker, sore hocks and paraplegia, heat prostration and cold shocks, hair balls.**



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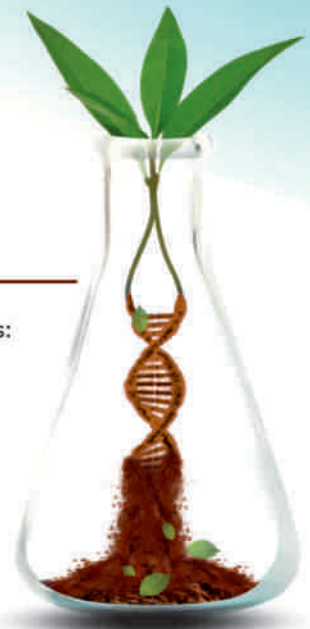
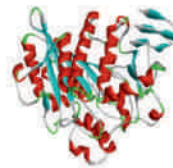
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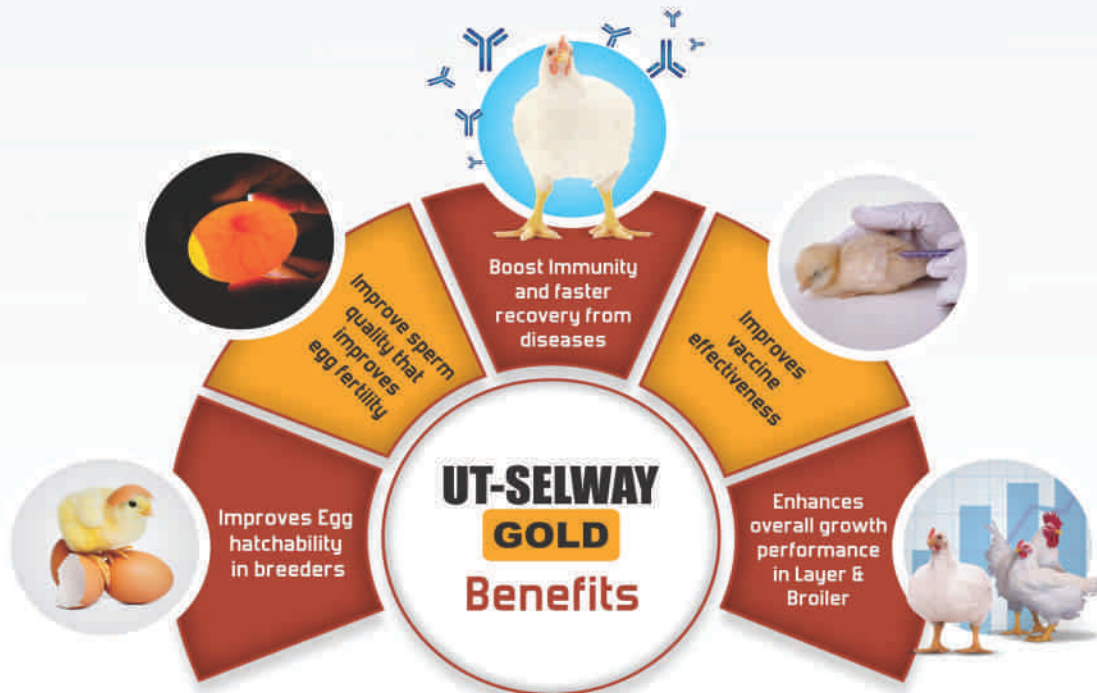
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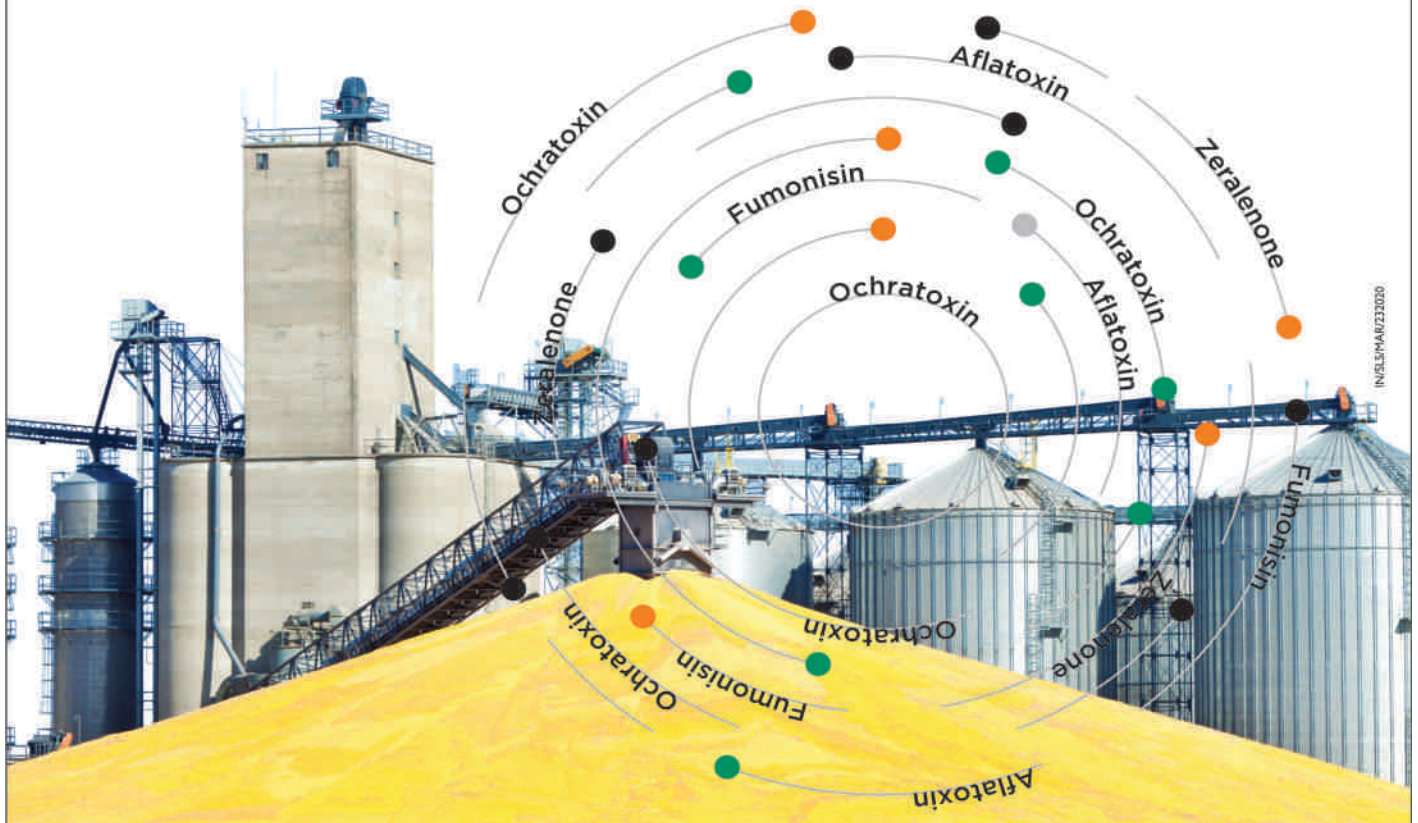
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IN/SE/MAR/23/2020

Common vices of poultry and their management

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Introduction: Poultry may suffer from certain vices, which becomes quite extensive right from the beginning and their elimination becomes a big problem in poultry farming. It may be due to hereditary, behavioural, environmental and nutritional problem. The word vice comes from the Latin word *vitium*, meaning "falling or defect". It is common in horses, pigs, and chickens but may occur in any species if any animals are kept in confined spaces. Even by fulfilling all the requirements vices have been observed in different commercial farms. Once the birds get into these bad habits, it is difficult to stop them. These vices may incur a huge loss to the poultry farmer. Some of the important vices are:

- Cannibalism
- Egg eating
- Egg hiding
- Pica.

Cannibalism

Cannibalism is a condition in which birds of a flock attack their pen mate and eat its flesh, which may impose deep wounds and heavy mortality. Cannibalism usually occurs when the birds are stressed by a poor management practice. Once becoming stressed, one bird begins picking the feathers, comb, toes or vent of another bird. Once an open wound or blood is visible on the bird, the vicious habit of cannibalism can spread rapidly through the entire flock. If you notice the problem soon after it begins, cannibalism can be held in check. However, if the problem is allowed to get out of hand it can be very costly. Cannibalism will lower the bird's value due to torn and damaged flesh, poor feathering and can result in high death losses. Once this habit gets out of hand it is difficult to eliminate. Vent pecking is common in laying birds. Once the birds adopt this vice it spreads rapidly through the flock. Poultry farmer must remain vigilant to prevent cannibalism as it has got no direct treatment. Presence of wounded or dead birds which are showing wound but otherwise appear healthy are indicative of cannibalism.

Causes of Cannibalism:

Following are some of the causes responsible for cannibalism

- Supplementation of imbalanced diet causes cannibalism in poultry. Extremely high energy and low fiber diets cause the birds to be extra active and aggressive. Deficiency of protein and amino acids like arginine and methionine, salt, and minerals are responsible for the condition.
- Overcrowding in the poultry house which gives less opportunity for exercise and the less active birds pick up vices.
- Excessive bright light or longer period of light will cause birds to become hostile towards one another. Photoperiod more than 16 hours per day will cause adverse effects.
- If the brooding temperature is very high, they can become extremely cannibalistic.
- If the birds have to fight for food and water, or if the birds are always hungry they will increase cannibalism.
- Mixing of different ages and sizes of fowl or fowl with different traits encourage pecking due to curiosity by disrupting the flocks normal pecking order.
- Cannibalism tends to be more common in some breed of birds and may have genetic predisposition.
- Haemorrhages in the external genitalia due to laying of large eggs by new hens attracts other birds and once the birds develop taste for blood and meat they develop the habit of cannibalism.
- Loss of feathers from the body or haemorrhage from the skin due to parasitic infestation may predispose to cannibalism.
- Wounds inflicted by fighting between the birds may also serve as a stimulus for cannibalistic activity.

Prevention:

- The most recent and cheapest way to avoid cannibalism is debeaking which can be done right from the day old chicks to any age. It can be done either manually or mechanically. Mechanical way of debeaking has an advantage that it does not require second cutting of beak which is sometimes required in case of manual debeaking. One-third of the upper beak and tip of the lower beak is to be trimmed. To stop bleeding, hot iron rod is touched at the site of cut.
- Quantity of methionine, vitamin, mineral mixture and salt may be marginally increased in poultry ration.
- Overcrowding of the birds must be immediately corrected.
- Birds involved in cannibalism must be isolated.
- Wounded birds should also be segregated and given proper treatment.
- Margosa oil is effective for wound healing in poultry.
- Feed must be available in sufficient quantity at all the times.
- Laying nests must be built at peaceful, isolated places, because the congested external genitalia of layers, following laying, attracts other birds for cannibalism.
- Provision of red bulbs near laying nests may help during the period of the problem.

Egg Eating

- Laying eggs on the floor instead of the nesting is a common problem that is particularly found in young hens. Sometimes, if there are no older hens to teach them the right habits, the young hens will lay their eggs in inappropriate places. In some cases, birds develop the tendency to eat their own eggs. It becomes quite difficult to prevent this vice. It may start due to the presence of cracked eggs or accidental breaking of eggs and once the birds develop taste for it they start breaking their own eggs.

Causes of Egg eating:

- Presence of eggs for longer period in the pens may also encourage the birds to start egg eating.

- Breaking of egg or cracking of egg due to thin or soft egg shell or lack of sufficient bedding material in the laying area.

Prevention:

- The quantity of lime stone and protein should be increased in the diet.
- Isolate the birds which have developed this habit.
- Birds which developed of eating egg, should be kept in a cage in which egg rolls away, beyond the reach of the bird after laying of the eggs due to slope.
- Egg collection interval should be reduced.
- Debeaking is also an effective tool for reducing this tendency.
- Darkness in the laying area may prevent his habit.

Egg Hiding

- Egg hiding is a maternal instinct of jungle fowl and is not encountered in domestic fowl. But sometimes this habit may develop in the domestic fowl which are allowed freedom of movement.
- They hide the eggs in the field, bushes etc.

Prevention:

- Restrict freedom of movement of the birds.
- Laying area should be built inside poultry house and made comfortable by providing sawdust, straw etc.

Pica

- Birds start eating materials which are not fit for consumption, such as feathers, litter material, threads, etc.
- It is less commonly found in modern poultry farm.
- Phosphorus deficiency, parasitic infestation, new litter material etc. may predispose the birds to pica.
- Good managerial care and balanced diet are recommended for the prevention of pica.

Fightiness:

Fightiness is a vice in poultry and it is common in some light breeds like Leghorn, Ancona, Araucana. The etiology of the condition is unknown but the causes may be due to overcrowding and imbalance diet. Control measures may include trimming of flight

feathers of one wing and brailing i.e. binding the wing with a soft cord so the wing can't be opened up for flight.

Hysteria:

Hysteria has been reported in birds reared in both deep litter and cage system of poultry production. The etiology of this condition is unknown. However, severe hysteria results in decrease in egg production and mortality probable causes of hysteria may be overcrowding and injuries due to cannibalism. Changes in light intensity, supplementation of niacin and removal of claws have been tried with limited success. However high level of dietary tryptophan may be useful in alleviating hysteria in Poultry.

Scratching of litter- It is an ancestral character from wild fowl. Now it is also observed in farm

condition which creates dust problem and polluted the feed and drinkers.

Vent pecking-In this condition the birds pulled out a part of cloaca. The cause is still unknown.

Toe pecking- pulled out of nail causes bleeding

Feather pecking- pecking of feathers among birds

Conclusion:

Vices of poultry is a major problem in the commercial poultry production system. Birds which develop abnormal behaviour should be immediately isolated and proper care should be taken. There should be supply of balanced diet which contains all the required nutrients in appropriate amount. Regular debeaking of birds is an essential managemental practice.

PRESS RELEASE

Obituary of Sheik Imam

by Gurdip Singh

I was very sad to hear the news that Covid-19 pandemic had claimed a stalwart of poultry industry and a very dear friend – Sheik Imam, who was an intrinsic part of my life.

As I recollect Sheik Imam was running Hy-Fed Feeds in Hyderabad. He was the first distributor to be appointed by Dr. T.W.Millen, Chairman of Hi-Bred India Pvt. Ltd. to receive Hy-Line Parent Stock in 1966. After which, there was no looking back.

Sheik Imam and we grew together to become 18 Associate Hatheries in India & Nepal. We had our annual Associate Hatcheries meeting at different places viz. New Delhi, Poona, Kathmandu, Srinager, Bangalore etc., where Sheik Imam was a key contributor. We engaged Alyque Padamsee to coin a jingle for promoting eggs which was relayed from 18 stations of All India Radio at 08:00 a.m. sharp for years.

Hi-Bred sponsored his cousin Syed Mahmood to Hy-Line International, USA for 3 months

training. One year, Sheik Imam was awarded the coveted Hy-Line Challenge Trophy for best Associate Hatchery performance.

While travelling to Hyderabad, I was often taken to his home as Jameela had specially prepared Haleem for me.

Sheik Imam was the one who initially supplied 5,000 Hy-Line chicks to C.Jagpati Rao in Vijaywada to get him started.

After leaving Hy-Line, Sheik Imam ran very successful Kasila Farms.

I am sorry to lose my friend. May his soul rest in peace.

We have noted the sad demise of Mr Sheik Imam, one of the stalwarts of Poultry Industry through Mr Gurdip Singh and the team of Tezasvi Publications pays homage to the dynamic leader and pray the almighty to rest the departed soul in peace.

Global animal nutrition leader Alltech launches human health company Acutia

Backed by research from Alltech Life Sciences, Acutia was cultivated by an internal incubator



The selenium found in Acutia Selenium and Acutia Brain Health is made from a specialized, high-quality strain of brewer’s yeast to optimize the quality, absorption, safety and efficacy of the products.

Rounding out the initial launch of supplements is **Acutia Digestive Health**, which will be available later this year.

[LEXINGTON, Ky.] –Alltech, a global leader in the animal health industry, is applying its more than 40 years of scientific innovation and proven nutrition expertise to human health. Launching on March 24, Acutia, a wholly owned subsidiary of Alltech, combines science and sustainability to provide high-quality supplements that enhance everyday nutrition and improve long-term wellness.

“This is an exciting and pivotal moment in Alltech’s long history of improving nutrient value throughout the food supply chain,” said Dr. Mark Lyons, president and CEO of Alltech. “Acutia is a natural extension of our business, allowing us to directly support people in their pursuit of improved wellness. In a time when we are all deeply aware of the importance of our health, this launch is particularly meaningful.”

Acutia’s initial line of products will be rolled out in phases, beginning with **Acutia Selenium**. This supplement provides immune system support, antioxidant benefits and essential nutrition and helps maintain healthy thyroid function.

Acutia Brain Health, which will follow later this spring, provides support for cognitive health and brain function, as well as antioxidant benefits and essential nutrients, by combining selenium, vitamin C and plant-based omega-3 DHA.

Acutia products are backed by the Alltech Life Sciences division, which conducts research on digestive health, cognitive health, brain function and cellular health. In 2019, researchers with Alltech Life Sciences achieved a breakthrough that offers a possible alternative to current insulin treatments for those living with diabetes.

“While people associate Alltech with the provision of products and solutions for the agricultural sector, we have been studying the potential benefits of a number of our products for human health for many years,” said Dr. Ronan Power, vice president and chief scientific officer at Alltech. “Acutia supplements have arisen from part of that work. They have been extensively tested to ensure safety, quality and efficacy. We firmly believe that consumers will come to value these supplements as a key part of their overall health regimens.”

Acutia’s focus on sustainable wellness extends to its unique packaging and refill system. Upon their first order, customers receive a starter kit, which is packaged in a recyclable box and includes a reusable glass storage jar and a travel container. Subsequent orders are provided in compostable refill packs. To offset carbon emissions from shipping, Acutia partners with Nori to support

farming practices that sequester CO₂ from the atmosphere.

“Acutia combines nutrition science with a sustainable packaging system that helps reduce waste,” said Nikki Putnam Badding, registered dietitian nutritionist and director of Acutia. “This allows us to support a healthy future for people and the planet we share.”

Acutia represents the continuation of a legacy of innovation that was established by Dr. Pearse Lyons, the late founder of Alltech and father of Dr. Mark Lyons. An avid runner who understood the benefits of proper nutrition, Dr. Lyons sought to create dietary supplements for humans based on Sel-Plex® and Bio-Mos® — two of Alltech’s flagship organic nutrition solutions.

Enlisted by Dr. Lyons for her vast experience as a dietitian, Putnam Badding played an integral role in building the business from its inception through today’s launch. In 2018, Putnam Badding led the project through the first cohort of Alltech’s internal incubator program. Reflecting the culture of innovation at Alltech, the incubator provides a pathway to test and develop new business ideas while allowing a diverse group of team members to showcase their talents. As Acutia continued to evolve, it was later selected for The Pearse Lyons Accelerator (now The Pearse Lyons Cultivator) — a program that provided entrepreneurs with mentorship and resources to help bring their startup companies to market.

What began as a small group project grew to include Dr. Mark Lyons; Dr. Power; Becky Timmons, chief product officer at Alltech; and a team of advisors. After several iterations, revised business plans and re-namings, Acutia emerged.

“As a startup that is supported by years of scientific research and dedicated experts within Alltech Life Sciences, we are uniquely positioned to provide high-quality, effective supplements to consumers,” said Putnam Badding.

Dr. Mark Lyons, who has a passion for nutrition and physical health, will continue to work closely with the Acutia business.

“It is incredible to see my father’s vision come to fruition,” said Dr. Mark Lyons. “We carry forward his legacy of innovation and his entrepreneurial spirit by connecting science, sustainability and wellness. This is a significant moment for us as we continue Working Together for a Planet of Plenty™.”

-Ends-

Media Contact:

Dr. Manish Chaurasia
Marketing Manager – South Asia
Email: mchaurasia@alltech.com
Mob: 8130890989

About Alltech: Founded in 1980 by Irish entrepreneur and scientist Dr. Pearse Lyons, Alltech delivers smarter, more sustainable solutions for agriculture. Our products improve the health and performance of plants and animals, resulting in better nutrition for consumers and a decreased environmental impact.

We are a global leader in the animal health industry, producing additives, premix supplements, feed and complete feed. Strengthened by more than 40 years of scientific research, we carry forward a legacy of innovation and a unique culture that views challenges through an entrepreneurial lens.

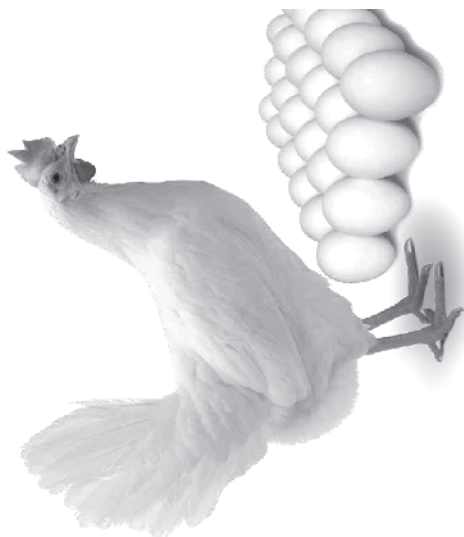
Our more than 5,000 talented team members worldwide share our vision for a Planet of Plenty™. We believe agriculture has the greatest potential to shape the future of our planet, but it will take all of us working together, led by science, technology and a shared will to make a difference.

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

Farm Name	Madhuri Poultry Farm. West Godavari Dist - Andhra Pradesh	Sree Lakshmi Poultry Farm. Vizag - Andhra Pradesh	Pillaiipalli Farm. (Shed -6) Hyderabad-Telangana.	Srinivasa Poultry Farm. Krishna Dist - Andhra Pradesh	Pillaiipalli Farm. (Shed -5) Hyderabad-Telangana
Batch Size	25483	10998	34823	7905	35784
Hatch Date	06-08-2020	11-08-2020	24-07-2020	14-07-2020	25-06-2020
Age in Weeks	Actual Performance				
STD WEEKLY AVG H.D PRODUCTION%					
19	17.63	0.04	13.48	3.32	3.93
20	42.73	0.74	42.64	21.56	37.27
21	69.32	6.60	69.22	55.14	56.07
22	83.60	34.26	83.66	78.60	79.11
23	89.34	69.52	88.69	89.32	89.72
24	91.53	84.65	90.67	92.72	93.17
25	92.25	89.84	91.46	94.24	93.9
26	92.65	91.94	91.44	94.98	94.43
27	92.80	94.34	91.43	94.45	94.64
28	92.08	95.11	92.32	94.58	94.62
29	95.30	95.09	92.50	94.35	94.67
30	95.60		91.77	94.34	94.97
31	95.60			94.33	95.19
32	96.00			94.29	94.99
33	96.00			94.43	95.34
34	96.00				95.63
35	96.00				95.00
36	96.00				94.13
37	95.00				
38	95.00				
39	95.00				
40	95.00				
No of weeks above 90% production	5	4	7	10	13
Cum.H.H.Eggs	53.05 / 50.95 STD (+2.1)	46.15 / 57.45 STD (-11.3)	64.67 / 64.50 STD (+0.17)	82.28 / 83.70 STD (-1.42)	103.1 / 104.95 STD (-1.85)
CUM.FEED PER EGG in gms	122.24		121.4	121.15	114.2

* Note : Figures highlighted in yellow have achieved more production than the standards.

* Note : Numbers highlighted in green colour exceeded 90% egg production.



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Srinivasa  **Hy-Line.**

Farm Name	Geetha Poultry Farms Jogi Peta - Telangana	Uddanam Agro Farms & Feeds. Srikakulam Dist - Andhra Pradesh	Maduri Poultry Farm, Kommara. West Godavari Dist- Andhra Pradesh	Sree Poultries Krishna Dist - Andhra Pradesh
Batch Size	20032	10431	48625	57950
Hatch Date	12-06-2020	10-05-2020	16-05-2020	23-05-2020
Age in Weeks	Actual Performance			
STD WEEKLY AVG H.D PRODUCTION%				
19	0.00	6.07	2.35	1.69
20	0.65	26.41	17.35	12.32
21	12.00	54.78	45.17	39.37
22	50.08	78.92	66.08	67.02
23	79.92	89.93	84.06	82.10
24	90.78	91.55	87.22	88.30
25	94.49	96.19	91.27	90.39
26	95.21	96.91	91.16	91.77
27	96.64	97.06	91.19	90.98
28	97.33	95.09	91.33	91.23
29	96.10	95.49	90.87	89.20
30	96.33	95.75	91.12	92.07
31	96.13	96.02	90.98	94.38
32	96.07	96.76	90.92	93.83
33	96.27	97.38	91.29	91.18
34	95.95	97.64	91.22	90.03
35	95.67	98.10	91.37	90.27
36	95.07	98.27	90.44	89.2
37	95.15	98.51	90.07	91.65
38	95.22	95.06	90.68	91.74
39	93.32	95.28	91.36	91.15
40	95.00	94.86	91.34	90.55
No of weeks above 90% production	16	17	16	14
Cum.H.I.Eggs	114.65 / 124.1 STD (-9.45)	130.77 / 129.20 STD (+1.5)	120.7 / 129.20 STD (-8.5)	121.0 / 129.20 STD (-8.2)
CUM.FEED PER EGG in gms	128.3	125.84	125.22	125.68

* Note : Figures highlighted in yellow have achieved more production than the standards.

* Note : Numbers highlighted in green colour exceeded 90% egg production.

Hy-Line W-80 a Robust, Strong and Consistent Performer!

Hy-Line genetically selected special version of the Hy-Line W-80 is continuing to excel under India's unique conditions. The elite birds in the India genetics program are evaluated on their ability to achieve the preferred local egg size, ever-increasing egg numbers, long persistency of lay and ideal onset of lay, with a continued commitment to superior shell quality late into lay.

In the tough climate conditions and environment challenges of India, the Hy-Line W-80 has the lowest feed-per-egg ratio of competing breeds. Plus, flocks are demonstrating a speedy return to production and excellent performance after disease challenges.

Hyline W80 commercial layers are more efficient compared to their competitors, as they produce more eggs with less feed. The Impeccable record of consistency, week on week with high performance across the regions bears the testimony. Hyline W80 delivers high value and profits to the egg producers. The layer commercial farmers are reporting the best performances resulting in more profits with no pullet eggs adding to more saleable eggs with good strong shell quality.

Nutritional strategies for poultry gut health in antibiotic-free production

Anjan Mondal, Senior Technical Manager, Novus International, Inc.



Anjan Mondal

A healthy chicken gut is essential for optimum digestibility, maximum nutrient absorption, immunity development and disease resistance. Disruption of gut integrity and imbalance of gut microbiota may have negative effects on feed conversion, productivity, and health of chicken.

For the last few decades in poultry production, antibiotic growth promoters (AGPs) have been widely used in poultry diets to promote growth, improve feed efficiency and control dysbacteriosis and enteric diseases. Unfortunately, the extensive use of antibiotic growth promoters at subtherapeutic doses in poultry diets has the possibility to generate antibiotic resistant pathogens in animal products. Antibiotic-free poultry production is a common trend worldwide because the use of antibiotics has been banned by governments in many countries and due to increasing concerns about antibiotic resistance. These circumstances have ensured a search for alternative strategies to modulate gut development and health in poultry.

Strategies to modulate gut health in antibiotic-free poultry production

Feed quality :

- Optimum nutrient digestion and absorption depends on high quality feed ingredients.

- Feed particle size is very important for gizzard development. A well-developed gizzard is essential to enhance grinding activity, leading to not only increased gut motility and greater digestion of nutrients, but also to greater reduction in particle size entering the small intestine, ultimately increasing the accessibility of the feed to digestive enzymes. Poor pellet quality and excess fine particles can reduce gizzard function which can increase the incidence of feed passage (undigested feed in the animal's waste) and dysbacteriosis or microbial imbalance.
- High levels of antinutritional factors in the feed could lead to poor digestibility, resulting in more undigested protein in the intestinal lumen. The presence of undigested protein in the lumen favors the proliferation of pathogenic bacteria, such as *Clostridium perfringens*. Supplementing the diet with good quality exogenous protease enzyme has been shown to considerably improve protein digestibility.
- High concentrations of trypsin inhibitors in diets have a negative effect on nutrient digestibility and gut health. Trypsin inhibitors are directly correlated with rapid feed passage and dysbacteriosis. Thermal processing of soybean meal is critical because negative effects from undercooked and overcooked soybean meal on digestion have been cited. Undercooked soybean meal has higher concentrations of trypsin inhibitors whereas overcooking decreases digestibility of the proteins. Inclusion of a good quality protease in the diet can reduce the impact of trypsin inhibitors on digestion.

- Coarser particle size of soybean meal, close to 700-900 μm , favors higher digestion of soybean protein and minimizes the negative effects of antitrypsin factors.
- A high content of soluble non-starch polysaccharides (NSPs) in the feed can increase viscosity in the gut, decreasing the passage rate of feed in the stomach (digesta). This leads to decreased absorption of digesta and increased incidence of wet droppings. The addition of an exogenous NSP enzyme in feed can considerably decrease NSP levels and reduce the risk of bacterial enteritis.
- Mycotoxins can alter the normal gut functions, such as barrier function and nutrient absorption. Where feed storage is concerned, control measures need to be implemented to minimize grain damage and conditions that could increase mold and insect spoilage. Adding a broad-spectrum mycotoxin binder to the diet can reduce the adverse effect of mycotoxins on poultry health.
- Rancid oils and fats should be rejected since they have been shown as a path to enteric diseases. Proper storage conditions in tanks and transportation lines should be evaluated frequently to control rancidity development within the feed mill. Additionally, the use of antioxidants in feed can reduce oxidation and thereby reduce rancidity.
- Certain feed ingredients and additives have been shown to modulate gut microbiota and the immune system in poultry. Those dietary factors should be considered when formulating broiler diets (**Figs 1&2**). Several classes of feed additives have been proposed and evaluated in poultry preproduction, including organic acids, essential oils, probiotics, prebiotics, enzymes, and trace minerals. These feed supplements are used as an alternative to antibiotic growth promoters to modulate gut microbiota and enhance gut integrity for better growth, feed efficiency and improved bird health (**Fig 2**).

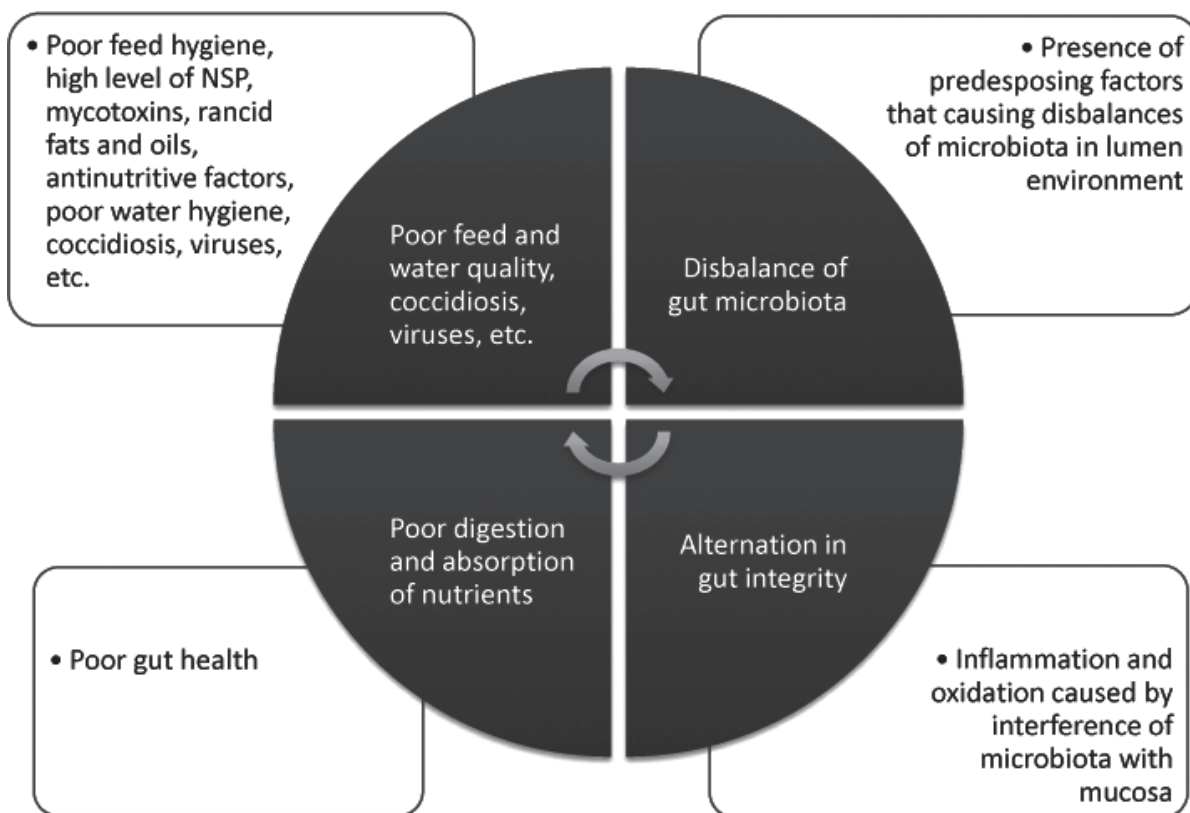


Fig.1 The vicious cycle of poor gut health

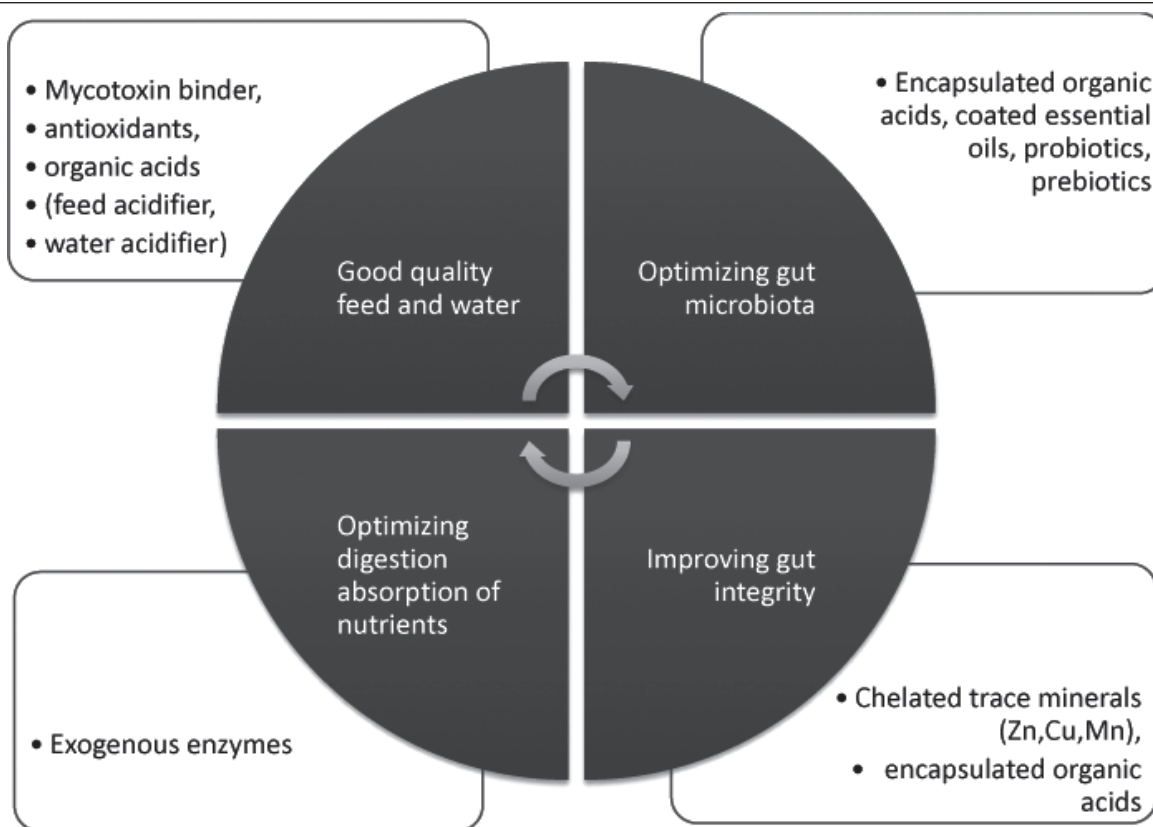


Fig.2 Nutritional strategies to improve gut health in antibiotic free production

Water quality

Water is the most important nutrient for poultry and is involved in every physiological process of a bird. Water is also a medium that can transport bacterial, viral and protozoan infections in poultry houses. Unfortunately, the importance of water quality is usually overlooked. Water quality is essential for proper digestion, so its physicochemical characteristics should be measured, controlled and improved on the farm.

The water's pH is an important factor that can influence microbial populations in water and in the animal's gut, thus maintaining microbiota balance in the lumen environment. The ideal water pH for poultry should be between 5 and 7, because alkaline pH (that above 7) is shown to reduce the activity of digestive enzymes. Studies show that birds can tolerate a low pH of 3.5. Drinking water with carbonates and other salts that increase the alkalinity and hardness can cause problems. Hardness and alkaline pH of water create an

environment for biofilm and endotoxins to thrive in the water tank, pipeline, and drinker due to the proliferation of algae and microbes.

Conclusion

To better optimize poultry digestibility and performance in antibiotic-free production, there is a need to develop cost effective alternative strategies that manipulate gut microbiota. Several feed additives including organic acids, essential oils, probiotics, prebiotics, exogenous enzymes, and trace minerals have been successfully used for better gut health and efficient production performance in poultry. Combinations of these various alternatives with proper farm management and biosecurity measures are the key to maximizing poultry performance in this antibiotic free era.

References available upon request.

This article has been originally published by FeedNavigator.com, for more details contact : reena.rani@novusint.com

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A Natural Solution to Coccidiosis Control

Use of anticoccidial drugs and vaccines has long been effective in protecting in broilers, broiler-breeders and non-caged layers against *Eimeria* infection. But with antibiotic resistance and vaccinal reaction on the rise, many are turning to natural solutions to control coccidiosis in poultry.

In Brief

Vaccine- and antibiotic-based methods of controlling coccidiosis have several disadvantages.

Consumers and governments are increasingly demanding a reduction in antibiotic use in poultry.

Three natural products—phytogenic feed additives, probiotics and synbiotics—can control coccidiosis without the use of antibiotics.



Traditional Approaches to Coccidiosis Control

The traditional approach to controlling **coccidiosis**, using either anticoccidial drugs in broilers or vaccinating broiler-breeders and non-caged layers, has shown good protective efficacy against *Eimeria* infection for several decades. However, these traditional approaches have disadvantages including resistance acquisition from long-term use of single-class anticoccidial drugs and vaccinal reaction from poor vaccination practice. Moreover, rising consumer demand for **antibiotic-free chicken** makes traditional programs less effective as many governments classify ionophores and anti-coccidial drugs as antibiotics.

Alternative Solutions to Controlling Coccidiosis

Given the limitations of traditional coccidiosis control programs, alternative solutions to replace or reinforce traditional programs are being sought. As *Eimeria* species multiply in the bird's intestinal tract, causing tissue damage at specific lifecycle stages, any compounds which inhibit the lifecycle of *Eimeria* show protective efficacy against coccidiosis. Coccidiosis vaccination can confer immunity to minimize the population of *Eimeria* in the intestinal tract, and chemical anticoccidial drugs can inhibit a certain stage of the lifecycle in the infected enterocyte. In addition to the traditional approaches, scientific research has found that some phytochemicals can also interrupt the lifecycle of *Eimeria* species (Thangarasu et al., 2016).

One of the key properties of a **phytogenic feed additive** (PFA) is its inhibitory effect on a certain lifecycle stage of *Eimeria* species. Some essential oils also minimize the replication of *Eimeria* species by the upregulation of epithelial turnover. Induction of epithelial cell death has been characterized as a defensive mechanism used by the host to limit infection by enteric pathogens. Cell death allows the elimination of damaged cells and limits persistent pathogen colonization. The upregulation of epithelial turnover by supplementation with a



PFA furthermore facilitates the repair of epithelial injuries and decreases the intestinal permeability induced by pathogens including *Eimeria* species.

Another alternative solution to coccidiosis is the use of probiotics which introduces healthy microbiota into the gastrointestinal tract. Probiotic supplementation has been shown to improve protective efficacy against several pathogenic bacteria and parasites. Although the role of probiotics and prebiotics for the prevention of *Eimeria* species is not clearly determined, the immune modulation effect of a healthy microbiota, competitive exclusion to *Eimeria* invasion and the production of short chain fatty acids with global upregulation of enterocyte turnover all contribute to the prevention of coccidiosis.

Using Synbiotics to Reduce Coccidiosis Challenges

Trial group	Additives	Challenge
Negative control	-	No challenge
Positive control	-	Challenge
Salinomycin	66 mg Salinomycin / kg of feed	Challenge
Synbiotic	1 kg of Synbiotic / kg of feed	Challenge

A 42-day trial was designed to evaluate the efficacy of a synbiotic product (PoultryStar®) to prevent the clinical signs of coccidiosis and minimize economic losses in a challenge model compared to treatment with Salinomycin. In this trial, four groups were assigned (Table 1).

On day 15, all birds except those in the negative control group were challenged with approximately 75,000, 25,000, and 75,000 counts of *Eimeria acervulina*, *E. maxima*, and *E. tenella* oocysts, respectively. Performance parameters including feed intake, live body weight and feed conversion ratio (FCR) were measured. On days 21 and 42, three birds from each pen were selected, euthanized and examined for the presence and degree of coccidiosis lesions. The upper, middle and cecal regions of the intestinal tract were scored, using the Johnson and Reid (1970) system, where 0 is normal and 1, 2, 3, or 4 indicate increasing severity of infection. On days 21, 28, 35 and 42, 10 fresh fecal samples were collected per pen for oocyst counting.

Performance parameter	Negative control	Positive control	Salinomycin	Synbiotic
Feed intake	4.07 ± 0.08	3.91 ± 0.08	3.93 ± 0.12	3.65 ± 0.05
Final body weight	2.31 ± 0.08	1.91 ± 0.03	2.19 ± 0.03	2.01 ± 0.01
FCR	1.76 ± 0.03	2.04 ± 0.01	1.79 ± 0.02	1.81 ± 0.02

Table 2. Feed intake (kg/bird), final body weight (kg/bird) and feed conversion ratio (FCR) values on day 42

Performance parameters in the synbiotic group were significantly improved compared to the positive and negative control groups, but were similar to the Salinomycin group (Table 2). Cumulative oocyst shedding in the synbiotic group did not differ from the Salinomycin group (Figure 1). Intestinal lesion scores at day 21 were similar in the synbiotic and Salinomycin groups (Figure 2).

Feeding a synbiotic or Salinomycin to birds gave similar effects, where birds in both groups shed less oocysts and had fewer intestinal lesions, indicative of a healthier intestine. Broilers that received the multi-species, host-specific synbiotic (PoultryStar®) in their diet performed at a similar level to broilers that received Salinomycin in terms of overall FCR, oocyst shedding, and intestinal lesions.

Figure 1. Oocyst count per gram of fecal material

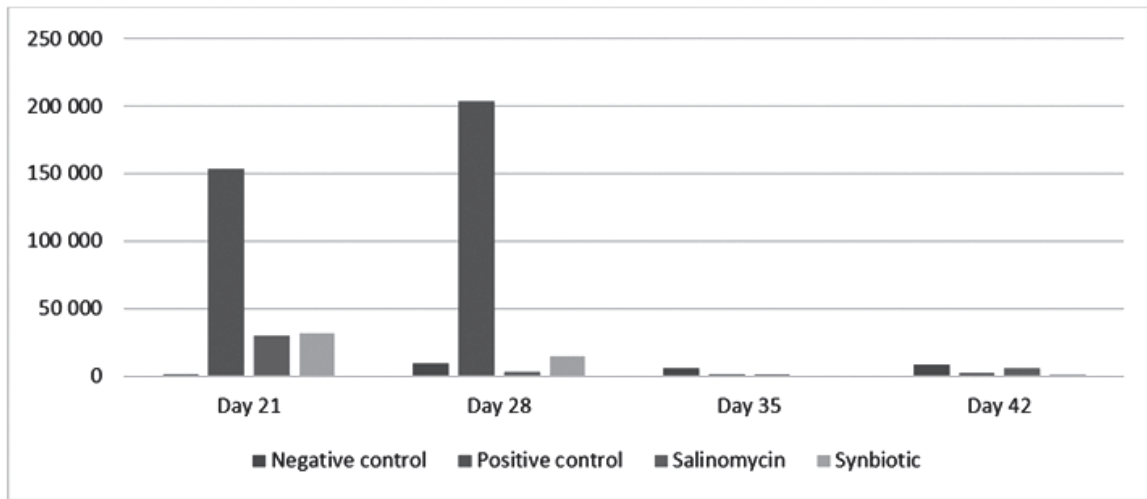
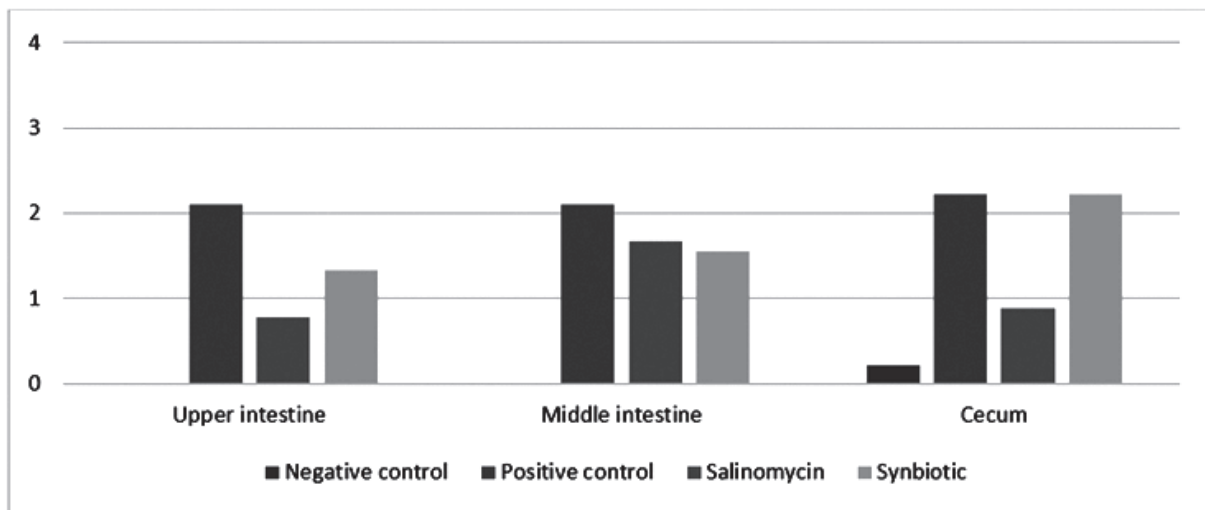


Figure 2. Lesion scores



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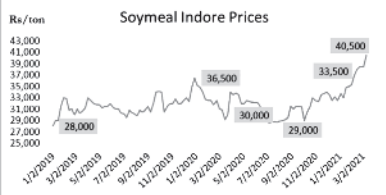
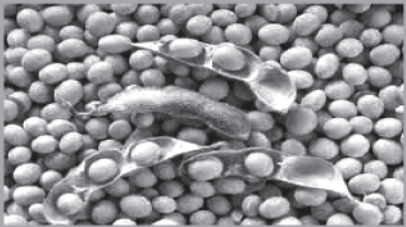


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Online Registration Link :

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April 12, 2021 - Time : 5 pm to 6.30 pm

**Online Panel Discussion
on
“Soybean and other Oilmeals
Demand and Supply Outlook -
Present & Future”**



Industry Expert

Dr. Davish Jain
Chairman, SOPA



Industry Expert

Dr. B. V. Mehta
ED, SEA



Industry Expert

Mr. Bahadur Ali
Chairman, AIPBA



Industry Expert

Mr. B. Soundarajan
MD, Suguna Holdings



Industry Expert

Dr. B.M. Masthan Rao
Chairman, BMR Group



Industry Expert

Dr. P. Krishnaiah
IAS retd., advisor, Shrimp
Feed Manufacturers Association



Moderator

Mr. Neeraj Kumar Srivastava
Chairman, CLFMA OF INDIA



Industry Expert

Dr. Dinesh Bhosale
RSD, AB Vista, SA



Vote of Thanks

Mr. Suresh Deora
Hon. Secretary, CLFMA OF INDIA

Host :
Ms. Chandrika Venkatesh,
ED, CLFMA OF INDIA

Press Release Report

CLFMA OF INDIA, the apex organization and the voice of the country's dynamic livestock sector conducted an "Online Panel Discussion with the objective to discuss the Present Raw Material Situation (Demand & Supply) of Soybean and other Oil meals in India and to enable all industry players to come together and show solidarity for representing the government in all matters, as an expert opinion about this burning topic was the need of the hour.

The online panel discussion started with a welcome address by Mr. Neeraj Kumar Srivastava, Chairman, CLFMA OF INDIA, who moderated the session, he started by introducing CLFMA OF INDIA to the panellists and participants,

The panellists were Dr. Davish Jain, Chairman, Soybean Processors' Association of India (SOPA), Dr. B. V. Mehta, Executive Director, Solvent Extractors' Association of India, Mr. Bahadur Ali – IB Group and President of All India Poultry Breeders Association (AIPBA), Mr. B. Soundararajan - MD, Suguna Holdings and Former Chairman of CLFMA OF INDIA, Dr. B. M. Masthan Rao, Chairman, BMR Group, Dr. P. Krishnaiah, IAS (Retd.), Advisor, Shrimp Feed Manufacturers Association and Dr. Dinesh Bhosale – Regional Sales Director, AB Vista South Asia and Former Chairman of CLFMA OF INDIA.

Dr. Davish Jain, Chairman, Soybean Processors' Association of India (SOPA), thanked CLFMA OF INDIA for inviting him as the panellist and appreciated CLFMA OF INDIA to organize the panel discussion at the relevant time and gave an update of the demand and supply outlook of Soybean and meal keeping in mind the backdrop of covid crisis. He said that, the poultry and aquaculture put together requires 5 million tons of soya meal annually and to produce this a processor requires 6.5 MT/65 lakh tonnes of soya seeds, he said that, though the soya bean crop has been good the prices of the meal have gone up by 50% from Rs. 35/- to Rs. 58/- per kg. the demand from the poultry industry for soymeal has declined, He also said that, the soymeal consumption for feed industry has declined to 27 lakh tonnes as against 29 lakh tons during the same period last year in the period October 2020 to March 2021.

He said that, during the covid crisis year, most of the people invested in the commodity markets and real estates. With the huge stimulus packages introduced by all the countries all over the world lot of funds are seen pouring around in the commodity markets and in physical markets and in stock and real estate markets. There was a loss in the soyabean market of Argentina also, which is the largest exporters of soya bean oil in the world.

This year 104 MT of soyabean has been produced as per SOPA estimates. There will be 93.5 lakh tons available for crushing and sowing needs and other direct consumption ,hence the

residual meal after taking care of 18 lakh ton of exports should suffice i.e. 16 lakh tons has already been exported in first six months and for the remaining period exports should not be more than 2-3 lakh tons and the reason is that, the Indian exports contract has already been completed and as mentioned earlier the consumption of 27 lakh tons was estimated for the first 6 months and next 6 months the estimates of the consumption from feed industry is 23 lakh tons and the residual soya bean crop as per the SOPA's estimates at the end of March 2021 is 36.64 lakh tons of soya, which accounts roughly about 3 MT of soymeal or 30 lakh tons of soymeal for exports.

INDIA SOYBEAN: SUPPLY/USAGE/STOCK									
MTH	PRDN 2020-21 : 104.55 LT OPENING STOCK: 5.16 LT MP 41.72/MAH 45.44/RAJ 8.58/TELANGH 1.64/KTK 3.72/IMPORT 3.00 LT TOTAL SUPPLY 100.71 LT			PRDN 2019-20 : 93.06 LT OPENING STOCK: 1.70 LT MP 40.10/MAH 36.29/RAJ 6.56/AP 1.50/ CG 0.53/ GUJ 0.86 LT/IMPORT 3.00 LT TOTAL SUPPLY 97.76 LT			PRDN 2018-19 : 109.33 LT OPENING STOCK: 1.50 LT MP 59/MAH 35/RAJ 9.45/AP 1.57/ CG 1.10/ GUJ 1.2 LT/IMPORT LIKELY 1.80 LT/TOTAL SUPPLY 112.63 LT		
	ARRIVAL	CRUSH	STOCK FARMER +MILL	ARRIVAL	CRUSH	STOCK FARMER +MILL	ARRIVAL	CRUSH	STOCK FARMER +MILL
OCT	18.00	9.00	87.48	12.00	7.20	82.32	21.00	9.50	88.74
NOV	19.00	11.00	76.22	18.50	9.00	73.01	20.00	10.50	77.86
DEC	15.00	12.00	63.75	15.00	9.80	62.96	15.00	11.50	65.82
JAN	12.00	12.50	51.19	9.00	8.40	54.36	11.50	10.00	55.45
FEB	6.00	7.50	43.44	4.50	6.50	47.61	5.50	7.50	47.69
MAR	4.75	6.50	36.64	1.25	4.00	43.35	4.00	9.00	38.42
APR				0.20	3.70	39.41	4.00	6.00	32.18
MAY				2.00	6.50	32.65	3.75	5.50	26.46
JUNE				5.00	7.20	25.16	4.50	5.50	20.74
JULY				5.00	7.20	17.74	5.00	6.50	14.04
AUG				3.00	6.00	11.65	3.00	5.00	7.85
SEP				4.00	5.50	5.36	3.00	5.50	2.20
TOTAL	74.75	58.50	36.64	79.45	87.50	11.70	100.25	93.50	2.20
LAST YEAR	60.25	44.90	43.65	100.25	93.50	2.20	STOCK EXCLUDE FOR SOWING 12.00 LT NEW CROP ARRIVED IN SEP 2 LT. EXPORT 1.68 LT		

SOURCE : SOYBEAN PROCESSORS ASSN. OF INDIA, INDORE

Mr. B. Soundararajan gave the consumer perspective of the reason for spurt in the prices of soymeal even though there is availability. As per his overall estimation in India the broiler feed production is 14.5 MT, Breeder Feed accounts for about 3.3MT and Layer Feed is 10.22MT.

Poultry alone will require the total consumption of estimated soymeal of 56 lakh tones excluding aqua and dairy feed and is estimated based on the prices which may go up or down by another 10%. if prices are lower than the consumption will be 60 lakh tons and if high it will be around 50 lakh tons.

Currently 4.5 MT of meal is required in the country and overall, we are paying around Rs 20,000 to Rs 25,000/- more than the normal market prices. This is the excess price premium presently paid by the poultry industry.

Mr. Bahadur Ali said, that the poultry industry has reacted late and the poultry industry has asked for import of 12 MT and the govt has to consider this or not was questionable. He added that the price hike is due to the NCDEX commodity trading and the govt. should control this forward trading and we have to approach the govt. and ask them to support the soyabean farmers and the poultry industry as well.

Also, the poultry industry has started utilizing other alternate feed like DDGS, sunflower, maize protein and are not dependent on soya meal alone, but the price hike is artificially created on the social media. He also said that, the Feed Consumption in the poultry has reduced by 20% to 25% due to summer (April, May, June) and due to corona, the poultry production is reduced by 20%.

Dr. P. Krishnaiah, said that, the Shrimp Feed Manufacturers Association has estimated the requirement of soymeal including aquaculture to be 9 lakh tons.

Sudden surge of prices of soya meal directly impacts the cost of aqua feed and the major reason is soymeal constitutes 60% of the feed volume of aqua feed and in shrimp culture, feed cost alone is 60-75% and in this, 60% is by way of soymeal, hence, there is a direct impact on the aqua culture industry. Main reason for price hike is due to hoarding by certain states. He suggested to request import of soymeal of up to 9 lakh tons. He added that Fish and Shrimp has provided an employment opportunity for about 20 lakh individuals in the rural areas.

Dr. B. V. Mehta appraised that there is a surplus availability of other oil meals in the country. This year, we had a bumper soyabean, ground nut and cotton crop.

Rice bran production is 8.5 to 9 MT out of this 5.5MT is processed for rice bran oil. 3 MT of rice bran is used by cattle and poultry feed .out of 5.5 MT, we produce about 1 MT of the rice bran oil ,4.5 MT of rice bran extraction, out of 4.5 MT, we export about 2-3 MT mainly to Vietnam. This year there is a failure of crop in Bangladesh and export demand came from Bangladesh and hence export demand from India increased but now Bangladesh will be harvesting a new crop and hence the demand will reduce from Bangladesh. Overall Rice bran is at comfortable level. Out of 8.5 MT of rice bran, if we take out 1 MT of rice bran oil, the availability will be 7 MT of rice bran extract and is consumed by cattle feed industry.

Due to soyabean price increase the mustard oil has become cheaper than the soya bean oil. In the next 4-6 month there will be lot of availability of rape and mustard oil. He said that, to curb the false price rise, NCDEX trading should be regulated.

Also, to address the sentiments of the poultry industry govt. should allow import of at least 0.5 MT of soymeal and this will caution the hoarders.

The govt number of availabilities of soymeal is 13.5 MT as against 9 MT estimated by the industry association and it really a challenging situation to establish imports because of this gap.

Also, world production is not less. He added that, this shortage is a temporary, he advised to slow down distress buying and try to use alternated meals which ever is available in the lean period (March to August).

Dr. B. M. Masthan Rao, commented that, the Aqua culture particularly shrimp economy is very

sensitive to price variation, since 70 -75% of the cost of cultivation of shrimps is feed and any price fluctuation in the feed cost make the cultivation unviable. The BMR group being an organized sector survived with bare minimum margins. Also, Aqua culture employs about 20 lakh farmers and farm workers and another 25 lakhs from non-farm sector are also supported by the aquaculture industry. Most of the shrimp and fish farmers are dependent on the aquaculture.

Shrimp sowing of seeds in the pond will start from the month of Feb. This year the price of feed has gone up and hence shrimp industry is affected. He gave the suggestion to import certain quantity of DOC as it is the main ingredient i.e., 50% for shrimp and 20% of fish feed production and the shrimp & Aqua feed industry requirement is around 0.9 mt out of this 46% is soya meal. So far, our consumption of soya meal in Feb and March was hardly 1 lakh MT and another 8 lakh MT we need before Sep. Last year during the same time the prices of soya meal was 37,000/- per Mt ex-factory and now the price is 69,000/- per Mt soymeal. Since in the inclusion of preparation of compound feed 50% is protein, it is not viable, apart from this the ocean freight charges and transportation charges has also gone up. He suggested to present the case to the PMO . He said that the, hoarding is to be prevented first in the states of Maharashtra and MP.

Dr. Dinesh Bhosale gave the insights about of impact of soymeal being used as animal feed and compared the use of other meals with soymeal as alternatives and their limitations. He thanked CLFMA OF INDIA for organizing this online discussion. he said that, if farmers are protected then only our poultry industry can also be protected.

He added that 70% is the feed cost for cattle, fish, shrimp and poultry. If we consider broiler then, we have 35% inclusion of soymeal considered as starter, finisher feed- 30% is used as soymeal inclusion. One broiler gets ready after eating 3500 gms feed and out of this 1 kg is soymeal. Apart from soymeal the regularly used feed is meat and bone meal and synthetic amino acids like lysine, methionine and tryptophan is added while preparing compound feed. Soymeal digestibility is very good, as methionine is less in this.

He said that though, all the panelists are of the opinion that, we have to manage the industry with other alternative feeds, but govt should allow import especially in south India, as it makes the cost cheaper compared to other areas. Hence in south India govt. should allow at least 1MT of soymeal imports, we can discourage GM seeds. but GM soybean DOC can be imported.

Layer feed has a very complicated ingredients and in this the soymeal inclusion is 5-10% and in the complete life cycle layer bird consumes 48 kg feed and out of this 5 kg it consumes soybean DOC and since the prices of soya has increased and there is a shortage in availability of soya it is only used in chick mash and in the grower mash and layer mash the soybean doc has been completely suspended.

If we talk about cattle feed soybean DOC, 100 MMT is required and 12 MMT of cattle feed is manufactured by our industry and remaining 88 MMT raw material is fed to animal directly. The

12 MMT of soybean doc for cattle feed is very less, as calf starter, milk replacer, transition feed, all these high-cost feed uses soymeal DOC. In shrimp and fish feed dehulled soybean is required. He advised all SOPA members to manufacture de-hulled soybean meal and sell it to poultry and shrimp feed industry. He also said that NCDEX should encourage only actual buyers and speculators have no role to play.

Vote of thanks was proposed by Mr. Suresh Deora, Secretary, CLFMA OF INDIA

The main points summarized by him are as follows

- Govt statistics shows that, there is 30 lakh ton of soya availability for the feed industry and the largest consumer for both this industry is poultry and aqua.
- The prices of soya have gone up by 50% and the biggest culprit for this price increase is speculation by the NCDEX and is fuelled by social media, to ease this we should ask the govt. to allow a lesser quantity of import of soymeal to bring the sentiment down and cool the market
- The panic buying should be discouraged
- We have to approach the govt collectively on all these issues
- We have to approach jointly to SEBI for the purpose of regulating the NCDEX from doing speculations but move to real market and examine the controls we have to bring in



 S.S. PACKAGINGS	 SRI LAKSHMI PACKAGING COMPANY
<p>Mfrs.: Corrugated Boxes, Cores Pulp trays, Coir</p>	<p>Mfrs.: Corrugated Chick Boxes & Hatching Egg Box Paper Pulp trays, Coconut Coir</p>
	
<p>Contact : T. Subramanyam Managing Partner</p>	<p>Contact : P. Someswara Rao Managing Partner</p>
<p>H.No. 5-011/6, Ramireddy Nagar, IDA, Jeedimetla, Hyderabad-500 055. Email: slpc.2002@gmail.com</p>	<p>Plot No. S-15 to S-18, Rami Reddy Nagar, IDA, Jeedimetla, Hyderabad-500 055. Email: slpc.2002@gmail.com</p>
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NATIONAL EGG CO-ORDINATION COMMITTEE

DAILY / MONTHLY EGG PRICES DECLARED BY NECC AND PREVAILING PRICES AT VARIOUS PRODUCTION CENTRES (PC) AND CONSUMPTION CENTERS (CC) APRIL 2021

Name Of Zone / Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Average
NECC Prices																															
Ahmedabad	417	420	422	422	425	428	432	438	443	450	455	460	465	470	475	480	483	485	485	460	440	425	400	403	403	-	409	-	-	-	442.12
Ajmer	378	378	370	374	374	382	387	391	391	391	391	395	401	411	417	419	419	419	385	355	355	355	350	335	340	351	-	-	-	-	381.31
Barwala	378	378	378	378	378	384	389	393	393	395	395	397	400	406	415	419	419	419	395	375	375	362	362	335	340	346	-	-	-	-	384.77
Bengaluru (CC)	405	415	420	425	430	435	440	445	455	460	470	475	485	490	495	500	505	510	510	510	490	470	450	430	410	410	-	-	-	-	459.23
Brahmapur (OD)	397	399	401	404	407	412	418	423	428	433	438	443	450	457	464	464	465	465	465	435	425	425	370	370	370	370	370	-	-	-	421.04
Chennai (CC)	405	415	415	425	425	440	440	450	450	465	475	475	495	495	505	505	505	515	515	515	515	500	475	475	445	445	420	-	-	-	466.85
Chittoor	398	408	408	418	418	433	433	443	443	458	468	468	488	488	498	498	498	508	508	508	508	493	468	468	438	438	413	-	-	-	459.85
Delhi (CC)	394	397	397	397	398	400	406	408	413	413	413	413	417	419	426	435	439	439	439	414	394	394	380	380	355	358	367	-	-	-	403.89
E.Godavari	377	379	381	383	386	391	396	401	406	411	416	421	428	435	442	447	450	450	450	430	420	420	385	370	370	373	376	-	-	-	407.19
Hyderabad	365	368	371	374	378	383	388	393	401	409	417	425	433	441	446	451	454	454	440	420	400	370	370	350	353	356	-	-	-	-	400.38
Ludhiana	374	374	374	374	374	378	384	389	392	392	394	394	396	402	409	417	418	418	412	408	391	374	365	361	351	351	-	-	-	-	387.15
Mumbai (CC)	422	425	428	431	434	438	443	448	453	460	468	476	484	492	500	506	511	514	514	500	485	470	440	440	420	420	420	-	-	-	460.81
Muzaffarpur (CC)	429	429	429	429	429	433	438	443	445	445	448	448	448	457	457	462	471	471	462	452	433	424	419	414	405	410	-	-	-	-	439.62
Mysuru	410	421	426	431	436	440	445	450	460	466	476	481	492	497	502	507	510	514	514	514	494	474	450	430	410	410	-	-	-	-	463.85
Nagpur	395	395	405	406	406	410	410	430	440	440	440	440	460	470	470	475	475	475	475	460	420	400	400	400	400	400	-	-	-	-	430.65
Namakkal	400	400	410	410	420	420	420	435	435	445	445	460	460	460	475	475	485	485	485	485	485	450	450	415	415	385	385	-	-	-	440.56
Patna	429	429	429	429	433	433	438	443	445	445	448	448	448	452	457	462	471	471	462	452	433	424	419	414	405	410	-	-	-	-	439.58
Pune	422	425	427	429	431	435	445	450	455	465	475	485	495	505	515	520	520	520	520	510	490	470	450	430	410	415	-	-	-	-	465.92
Ranchi (CC)	438	438	438	433	438	438	443	448	448	448	452	452	452	462	462	467	476	476	476	467	433	433	429	429	419	419	-	-	-	-	446.69
Vijayawada	387	389	391	393	396	401	406	411	416	421	426	431	438	445	452	457	460	460	460	440	430	430	395	380	380	383	386	-	-	-	417.19
Vizag	383	385	385	385	387	390	393	398	403	408	416	421	428	435	442	447	450	450	450	430	420	420	385	370	370	373	376	-	-	-	407.41
W.Godavari	377	379	381	383	386	391	396	401	406	411	416	421	428	435	442	447	450	450	450	430	420	420	385	370	370	373	376	-	-	-	407.19
Warangal	367	370	373	376	380	385	390	395	403	411	419	427	435	443	448	453	456	456	442	422	402	372	372	352	355	358	-	-	-	-	402.38
Prevailing Prices																															
Allahabad (CC)	405	405	410	410	414	429	438	438	438	438	443	443	443	443	448	448	448	448	438	429	410	405	400	395	405	-	-	-	-	427.65	
Bhopal	388	391	391	394	398	395	405	415	415	415	433	433	433	433	445	445	445	445	415	415	415	415	400	400	400	-	-	-	-	416.31	
Hospet	365	375	380	385	390	395	400	405	415	420	430	435	445	450	455	460	465	470	470	470	450	430	410	390	370	370	-	-	-	-	419.23
Indore (CC)	400	400	400	400	400	405	410	415	415	415	415	420	420	420	445	445	445	440	410	410	410	410	410	410	-	-	-	-	-	415.2	
Jabalpur	395	395	395	402	402	405	410	417	423	428	428	428	428	428	435	428	441	443	443	433	420	410	400	390	385	390	-	-	-	-	415.46
Kanpur (CC)	410	410	410	395	395	395	410	410	410	410	410	410	410	419	419	433	433	433	419	405	390	390	381	381	371	371	-	-	-	-	405
Kolkata (WB)	438	438	442	446	450	455	460	465	470	475	480	485	490	495	501	506	506	506	496	481	481	450	435	420	430	436	440	-	-	-	465.81
Luknow (CC)	427	427	427	427	427	427	437	437	437	437	437	437	437	437	437	443	443	443	443	443	443	433	433	433	433	423	-	-	-	-	434.92
Raipur	395	398	400	400	403	406	415	415	425	425	435	435	435	445	445	445	445	445	445	421	421	410	410	400	400	400	-	-	-	-	419.96
Surat	427	430	432	432	435	438	442	448	455	465	470	475	480	480	490	495	500	502	502	470	450	435	435	435	410	-	418	-	-	-	455.81
Varanasi (CC)	433	433	433	433	433	440	447	450	450	450	450	450	450	450	450	467	467	467	467	450	433	433	423	416	407	413	-	-	-	-	442.12



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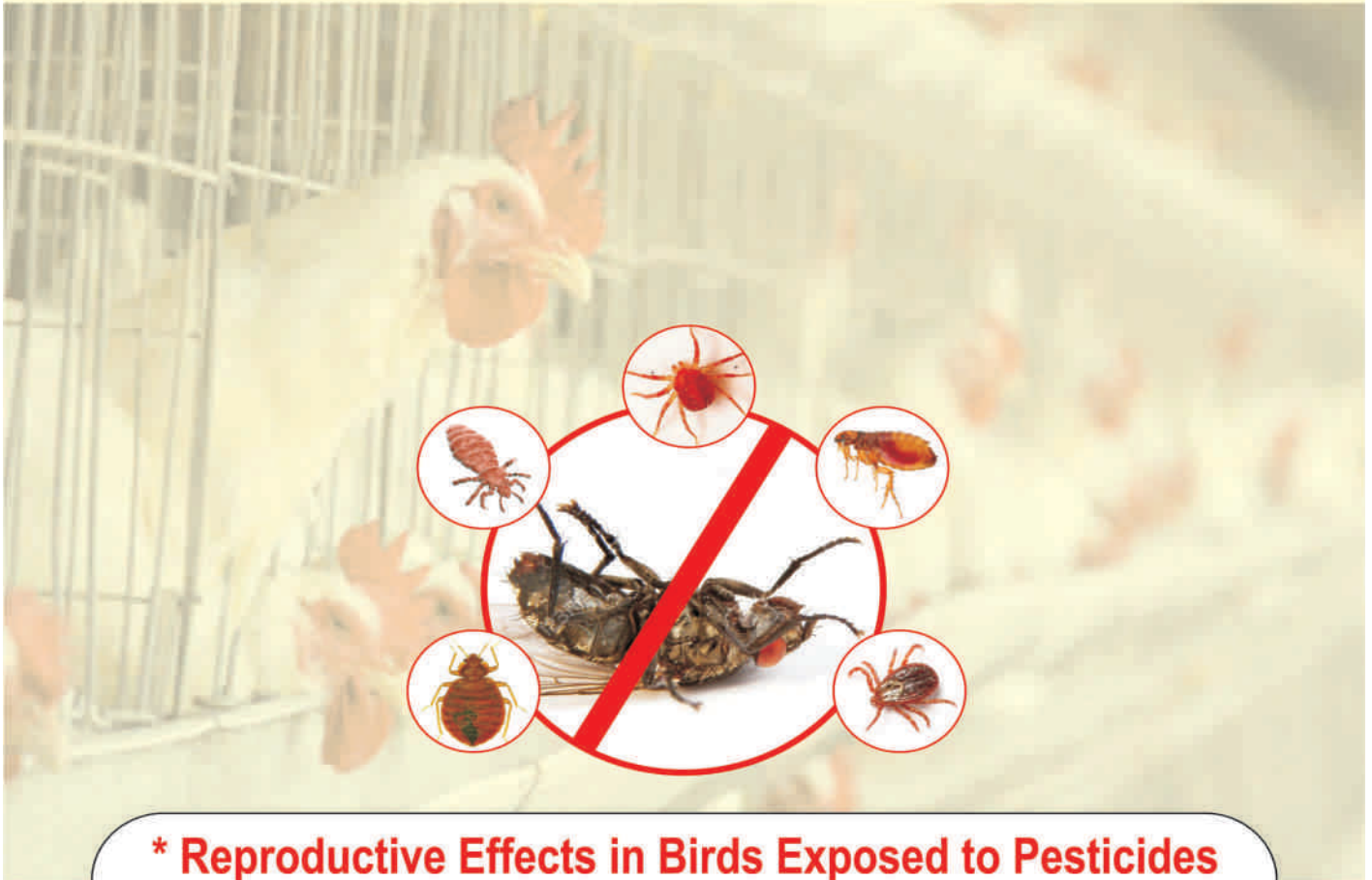
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* D. Michael Fry - Department of Avian Sciences, University of California, Davis, California - Environ Health Perspect 103(Suppl 7):165-171 (1995)

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WELTEC BIOPOWER Delivers Two Biogas Plants to Japan Special Structural Measures Protect Operation in Earthquake Regions



The 250-kilowatt biogas plant in Urahoro, Hokkaido, will go into operation in the summer of 2021.



In Sakata on the main island of Honshu, cowsheds are currently being built in addition to the biogas plant. This location should be ready in autumn 2021.

WELTEC BIOPOWER is currently setting up two agricultural 250-kW biogas plants for one of Japan's major milk producers. One of the plants is being set up in Urahoro on Japan's island of Hokkaido. The second plant is being built in Sakata in the prefecture of Yamagato on Honshu, the largest island. The structural design of the two biogas plants takes the earthquake risk in these regions into consideration. The generated power and heat will be used directly on site in order to enable energy autonomy. The commissioning will take place in summer 2021 in Urahoro and in autumn 2021 in Sakata.

Following the Fukushima nuclear disaster in March 2011 and thanks to the support of renewable energies, biogas enjoys a good reputation in Japan. Among the renewable energies, biogas is considered to be a weather-independent energy source that makes a significant contribution to the required grid stability. Additionally, the preconditions for the development of biogas are favourable, since despite the limited availability of other raw materials, Japan boasts plenty of biomass potential. Efforts to promote biogas projects had already started in 2002. A short while thereafter, WELTEC built its first

"Made in Germany" plant in Japan. However, the pace of development in this area picked up only after the government introduced the feed-in tariff for green energy in July 2012.

WELTEC's latest biogas projects in Japan are hybrid dairy farms. This means that the embryos of special beef cattle breeds are transferred to dairy cows, allowing the farm to produce both milk and beef. Every year, the two locations of an agricultural company group yield approximately 30,000 t of liquid cattle manure, which will be used for the energy production in the anaerobic digestion plants. To ensure efficient digestion, WELTEC BIOPOWER is setting up one stainless-steel digester in Urahoro. In Sakata, WELTEC is building two digesters, as the animal headcount will soon be increased. With a height of 6.3 m and a diameter of 25.34 m, the three bioreactors will each have a capacity of 3,176 m³. The benefits of stainless-steel tanks include compact shipping in just a few containers from Europe to Japan and easy adaptation to the structural requirements in earthquake regions.

At the Urahoro site on Hokkaido, the liquid substrates will be pumped to the digester from three upstream storage tanks. Two of the three pre-storages are already in place, but are being furnished with state-of-the-art technology. WELTEC is building the third pre-storage tank with a capacity of 393 m³ from scratch. Its height is 5.03 m, and its diameter measures 9.98 m. A pre-storage of the same size is also being set up in Sakata. Due to the cold winters with a lot of snow, the pre-storage tanks at the two locations will be insulated and furnished with gas-tight double-membrane roofs. Additionally, WELTEC is setting up a digestate storage tank with a capacity of 524 m³ for each location. Following the separation, the digestate will be spread on the company's own fields as fertiliser. Apart from the digesters, upstream and digestate storage tanks, separation and pump technology, WELTEC BIOPOWER is also setting up a 250-kW CHP unit at each of the locations.

Based on the customer's specification, the plants will run in parallel grid operation. Therefore, both construction projects are viewed as pilot projects in Japan. The fact that the power will not be fed into the grid, but will be used for the rotary milking parlour and other facilities, makes the operator more independent from the power grid. This makes sense from an economic perspective, as the grid capacity and stability in Japan is endangered especially in the earthquake areas. The fact that the framework conditions for the development of bioenergy are favourable is a great advantage: The yearly biomass potential in Japan amounts to approximately 284.4 million t, enough to produce about 13 billion kWh of electricity and continually supply 2.8 million households. At the bottom line, the efficient utilisation of raw material in biogas plants such as in Urahoro and Sakata contributes to the economic viability, eco-compatibility and security of supply and thus to the success of the energy transition in Japan.

PRESS RELEASE



Anand Animal Health ties up with Royal GD Animal Health



Anand Animal health Private Limited has tied up with the world-renowned Royal GD Animal Health of Netherlands to bring in world class services for the Animal health industry in India.

Royal GD is a premier destination for several Veterinary Laboratory tests and proficiency testing schemes. They also manufacture several

Diagnostic biological reagents, besides doing contract research consultancy and training. Speaking on the occasion, renowned Veterinarian Dr Anand said that AAH was committed to bring the best science and technology to this country to improve the efficiency of the Animal and Poultry Industry.

It is worth mention that AAH is national distributor of IDEXX Laboratories USA and has recently tied up with Thermo Fisher, to promote PCR technology in Poultry Diagnostics. AAH already runs an ELISA testing laboratory at Hyderabad for Poultry Diagnostics using IDEXX platform.

Turkey Farming: to Double the Income of Farmers

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2. SMS, Animal Nutrition, Parbhani Veterinary College, Parbhani, MAFSU, Maharashtra

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4. Senior Scientist & Head, KVK Samba, SKUAST-J, Jammu

5. Professor & Librarian, Medicine Division, SKUAST-J, Jammu

Introduction:

Turkey (*Meleagris gallopavo*) domestication occurred in Central Meso America at least 2000 years ago from wild turkey. Domestic turkey is a popular and it is raised throughout the world. Commercial industrial farming has made it very economical for the amount of meat produced. Commercial turkey

farming is a profitable business. Turkey grows faster like broiler chicken and become suitable for slaughter purpose within a very short time. Turkey farming for meat production is very popular than egg production. Turkey farming is similar to other poultry farming like chicken, duck, quails *etc.* Turkey is a very social with human; and raising it is really very fun and enjoyable.

Turkey farming is a big business in U.S. and some other western countries. It is almost non-existent in India. America is leading producer (55%) and after that >France>U. K.>Netherland. It is one of the white meat choices famous for its leanness and delicacy. In India, small flocks reared in C.A.R.I., Haryana Agriculture University, Bangalore University, Kerala Veterinary University.

Advantage of Turkey farming:

Turkey is unique bird: It is suitable for rearing in hot humid climatic condition. In fact, turkey are adaptable to wide range of climatic conditions and can be raised successfully almost anywhere in the world if they are well fed and protected against diseases and predators. The meat of turkey is considered as a luxury meat. The commercial turkey farming is becoming popular in India.



Suraj Amrutkar

Low disease prevalence: Turkey is more disease resistant in comparison to other poultry species like chicken, duck and quails *etc.* Mortality rate of turkey is very low in comparison to other poultry birds. Turkeys are resistant to Marek's disease and Infectious Bronchitis disease and commonly encountered with other diseases like Mycoplasmosis, Fowl cholera,

Erysipelas and Haemorrhagic enteritis. Farmers mostly do vaccination for New castle disease and Fowl cholera.

Low feeding cost: Turkey is good forager and could reduce the feeding cost. Turkey can obtain added nutrients from forage because they are better to digest fibre due to larger microbial population in their digestive tract.

Higher market demand: Turkey market is limited to some particular customer as an ornamental bird as well as for meat purposes, and its price is higher than other poultry species. There are a good number of Christian people in India who fond of turkey meat in Christmas day. So there are huge opportunities to expand turkey market in India.

Alternative source of Income and protein: Turkey is an effective alternative source of protein. It may be create good opportunity for unemployed youth to start farming and earn income. Turkey bird has a promising potential to be an alternative to animal meat production.

Opportunity to use Artificial reproduction technique: As natural mating are not resulting fertile eggs, so there is an opportunity to promote

Artificial Insemination technique in Turkey for the production of commercial hatching eggs. It will decrease cost for rearing more Tom. A well developed pectoral muscle in turkey has prevented toms to mate naturally and making A.I. necessary. Fertility could be improved in turkey by using A.I. efficiency of use of semen could be increased because each tom can produce enough sperm to inseminate approximately 30 hens.

Important points:

Family	Meleagrididae
Scientific name	<i>Meleagris gallapova</i>
Chromosome No.	82
Average age at 1 st egg	30 weeks
Egg production	80-100 eggs/season
Daily feed intake	200-250 gm
Feed efficiency	3.4-4.3 for Egg type; 2.5-2.8 for Meat type
Average Egg weight	80-85 gm
Incubation period	28 days
Shape of egg:	Painted at one end with strong shell
Colour f egg	Creamy white with brownish spot
Shell membrane	Tough
Yolk	Quite firm but enclosed by weak vitelline membrane

Details of Turkey in backyard poultry:

Category	Jammu & Kashmir	India
Male	1145	160650
Female	454	262724
Total Turkey	1159	423374

Details of Turkey in Commercial Poultry:

Category	Jammu & Kashmir	India
Male	13	5299
Female	50	19698
Total Turkey	63	24997

Varieties of Turkey:

Domestic turkeys belong to one breed with number of variety. All the varieties have the same general

shape but differ mainly with respect to size, fleshing properties and plumage colour. Seven standard varieties viz. Bronze, White Holland, Bourbon red, Black, Slate, Narragansett and Beltsville small white as specifies in the American standard of perfection were developed from wild stock. There are about a dozen more non-standard varieties important of which are Broad Breasted Bronze (BBB), Broad Breasted Large White (BBLW). Broad Breasted White Turkey is most popular for product of turkey broilers and small sized roasters.

Selection of breed for turkey business:

There are several turkey breeds available around the globe. But every breed are not suitable enough for commercial meat production. We have to raise such a breed in our farm which is profitable for meat production. For profitable meat production have use some modern turkey breed that are raised for commercial production. This type of breeds has a maximum feed to meat conversion ratio. They consume less feed and convert feed to meat within a very short time. Broad breasted white is such a modern turkey breed for commercial production. The meat produced by raising this breed on pasture on a small farm, it will be more tasty and flavorful than the meat produced from commercial farm.

Improved varieties in India:

CARI VIRAT:

CARI Virat (Turkey mixed) is mainly reared for meat. It is one of the choicest white meat known for its leanness. It is a popular delicacy especially for restive occasions like X'mas and New Year. Turkey meat has tremendous commercial viability because of its low fat and cholesterol contents. It is quite suitable for upliftment of small and marginal farmers. Turkey can be easily reared in free range or semi intensive system with minimal investment for housing, equipments and management.

Special features:

Low fat, Low cholesterol, choicest white meat, Suitable for backyard rearing

Production characteristics:

Age (week)	Body weight (g)	FCR
6	1054	1.85
8	1748	2.05
10	2101	2.37
12	2778	2.80
24	5270	3.78
32	7100	4.15
Fertility	94%	
Hatchability	86%	

Identification of Sexes:

- By vent method
- By male strut. By 5th week of age, male turkey prominent fleshy protuberance called Caruncle appears on head. By 7th week, the Caruncles begin to extend down the neck. This process is called shooting the red. Caruncles are also seen in female also but not so prominent.
- On the top of head, near the base of beak of both male and female fleshy protuberance present. Very small at hatching develop into snood. In male, snood becomes relatively large plump and elastic while female are small, thin and non-elastic.
- Matured male of 3-4 month of all varieties have black beard attached to the breast ridge.
- Most female are beardless but a few white varieties has small beard usually not >1 inch long.
- Hock joint of male are much broader, heavier and more flattened in front than those of female.
- Head of male is coarse and broader and head furnishing is brighter red.
- Male are heavier than female.

Management:

Reared under deep litter or free range. Generally management same as chick. As thumb rule turkey poults need double hover space as compared to chicken. Hover spaced 30-32cm above floor. A poult

guard height should be 40-45cm and should be placed around hover. Give 90 cm long feeder for 40 poults. After 2 weeks, brooding poults guard should be removed. A temperature requirement for brooding at 1st weeks is 35°C for dark period and 37.5°C for light period. Thereafter, temperature can be decreased to room temperature. During first 2 weeks, 24 hours light is given and thereafter only dim light at night. Poults may be toe clipped desnooded and debeaked prior the brooding. Desnooding should be done up to 3 weeks by sharp knife. Desnooding helps to prevent head injuries and helps decreased spread of erysipelas infection. Toe clipping done at day old with surgical shears to prevent scratched. Egg of turkey is palatable and nutritious as chicken egg. Female domestic turkeys are called as hen. Chick called as Poult. Male called as Tom.

Feeder space and water space:

Age (weeks)	Feeder space (Inch)	Water space (Inch)
0-4	1	0.5
4-16	2	1
16-20	2.5	1
Breeders	3	1

Floor space requirement:

Age (weeks)	Female (Sq. ft./bird)	Male (Sq. ft./bird)
0-8	0.6	0.7
8-12	1.5	2.3
12-16	2	2.7
16-20	2.5	3
20-24	2.5	4

Layers: Large breeds-6 sq.ft./bird; Small breeds- 5 sq.ft./bird.

Breeder: Large breeds- 11sq.ft./bird; Small breeds- 9 sq.ft./bird

Feeding of Turkey:

Turkey requires more protein, mineral and vitamins than chicken to meet their fast growth. So turkey ration are costlier than chicken ration.

Nutrient requirement:

Male and Female	Age in weeks						
	0-4	4-8	8-12	12-16	16-20	20-24	Adult
M. E. (Kcal/Kg)	2800	2900	3000	3100	3200	3300	2900
C. P. (%)	28	26	22	19	16	14	14

Breeding of Turkey:

Breeders are selected when birds are 24 weeks of age. Turkey which showing defects like crooked beak, crooked back, split wings, pendulous croup and knocked knee are highly rejected. Selected birds tested for Pullorum, Fowl typhoid, Infectious sinusitis. If needed, turkey can be debeaked, wing clipped and saddled. Breeder turkeys are vaccinated against Fowl typhoid and New castle disease. Breeding ratio in flock mating for small type turkey is 14:1, medium type turkey 12:1 and large type turkey is 10:1. Toe nails of each tom must be hand clipped and spur should be round. Male turkeys are not mated properly under natural condition. Artificial Insemination should be done to get desire fertilization. In A.I., 1st insemination is done when egg production start (30 weeks) followed by 2nd insemination at 2 week interval. Plastic straw method using clean straw of 4-5" long for each hen is widely used to prevent infection spread. For A.I., unmated tom can be milked every 3rd day. Ejaculation is promoted through natural ejaculation and by massaging and stroking abdomen and pushing tail up towards head. Copulatory organ protrudes from vent and squeezes out semen (0.05-0.8ml) per milking (average 0.25ml). As soon as it is collected, it should be preserved between 77-86° F and used within ½ hours after collection from a dozen tom turkey as much as 3-4 ml of semen can be collected. Excellent fertility is got with as little as 0.01ml undiluted semen. Semen can be diluted with isotonic salt solution. Hen once inseminated will remain fertile for 2-3 weeks. A turkey hen may fail to become fertile as a result of single insemination because of presence of egg in oviduct. So female are inseminated in late evening. Semen value and concentration can be increased when male are light weight. In female, 14-16 hrs

light is required to get maximum egg production. Breeding system followed in turkey are pure line, strain crossing and cross breeding.

Incubation of Turkey Eggs:

Hatchability of turkey eggs is poor when compared to other avian species. Egg loses 15% of its weight during incubation. Two peaks of critical mortality have been observed which are first during 1-6 day of incubation period and second during 24-28 day of incubation period. During 1-6 day of 38.5% of all mortality occurs. During 24-28 day, 39.6% mortality occurs.

Physical requirements of Incubation:

Temperature	In forced draft incubators, temperature required is 37.5% up to 25 days, thereafter 36.9% (26-28 days)
Humidity	60 % in Setter and 70 % in Hatcher
Turning	Eggs are turned 6-8 times a day at 45° angle
Position	Broad end up in setter and horizontal in hatcher
Gases	Oxygen: 21 % and CO ₂ : 0.5%

Turkey marketing:

Under optimum management condition, white turkeys are ready to market at 22 weeks of age and broad breasted turkey at 26 weeks and female by 24 weeks of age.

Processing:

Need longer period of fasting of 16 hrs. Turkey yield higher edible carcass than broilers. Ready to cook yield of turkey is 79.6%. Breast, thigh, drumstick and wings constitute 80% of the carcass.

Protein content in male and female carcass of turkey:

Nutrients	Male	Female
Protein	18.4	17.2
Fat	18.4	24

Composition of Turkey egg:

Egg weight	80-85 gm
Crude protein	13 %
Carbohydrate	1.7%
Fat	11.8%
Ash	0.8%
Total Energy	170 kcal/100 gm egg

Constraints of Turkey farming:

Low fertility, hatchability and use of A.I. technology in Turkey:

None of the farmers used A.I. techniques and even they had not heard about it in regarding turkey breeding. Adult Tom size is too high to achieve natural fertilization. In addition to low egg yield, unsatisfactory egg fertility and hatchability constitute a major problem for turkey breeding enterprises.

Inadequate access to technical information:

The farmers did not have adequate access to necessary information regarding turkey rearing and in case of problem that they did not get enough technical support from different government and non government agencies.

Low marketing facilities:

Market of Turkey is unlike of broiler and layer in India. There is absence of well organized market for turkey and its products. No structural market value chain has been identified yet in India. Farmers buy and sell turkey mainly through personal communication, internet services like *facebook and*

whatsapp, and at the market of ornamental birds. Sale of turkey is more during Christmas and festive period than other period of the year.

Poor housing:

Farmers did not know the scientifically accepted space requirement for rearing turkey. They gave space on the basis of assumption. Moreover, they were not aware about using of suitable litter material and their management. Many farmers did not take special care during extreme hot and cold situation which ultimately hampered the production performance of birds.

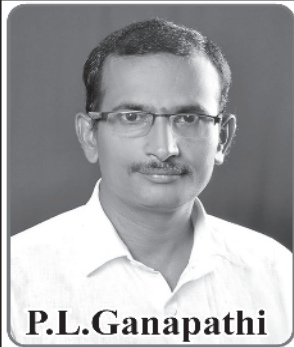
Non availability of manufactured feed and feeding standard:

Feed of turkey are not manufactured by any Feed mill in India. So farmers fed their turkey by their homemade feed as well as a mixture of homemade and broiler or layer feed. They did not know the scientific requirement of energy, protein and other nutrients of different categories of turkey.

Inadequate capacity building facilities:

There is absence of opportunity for capacity building of turkey farmers in terms of receiving training, getting information, participating in workshop and seminar. As most of the concern stakeholders are not aware enough about turkey farming in India. Farmers are not getting required knowledge and skill. Therefore, they are using traditional procedures for rearing turkey. But egg weight, fertility and hatchability and late embryonic mortality varies greatly between traditional and modern breeding system.

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Place	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Hyderabad	89	92	95	100	107	110	115	115	115	115	108	100	102	104	106	108	108	108	103	98	98	98	103	110	110	110	110	110	110	115	120
Karimnagar	89	92	95	100	107	110	115	115	115	115	108	100	102	104	106	108	108	108	103	98	98	98	103	110	110	110	110	110	110	115	120
Warangal	89	92	95	100	107	110	115	115	115	115	108	100	102	104	106	108	108	108	103	98	98	98	103	110	110	110	110	110	110	115	120
Mahaboobnagar	89	92	95	100	107	110	115	115	115	115	108	100	102	104	106	108	108	108	103	98	98	98	103	110	110	110	110	110	110	115	120
Kurnool	89	92	95	100	107	110	115	115	115	115	108	100	102	104	106	108	108	108	103	98	98	98	103	110	110	110	110	110	110	115	120
Vizag	94	97	100	105	110	110	115	115	115	115	115	110	110	110	112	114	114	114	108	103	103	103	103	105	105	105	105	105	105	106	108
Godavari	94	97	100	105	110	110	115	115	115	115	115	110	110	110	112	114	114	114	108	103	103	103	105	110	110	110	110	110	110	112	117
Vijayawada	94	97	100	105	110	110	115	115	115	115	115	108	110	110	112	114	114	114	108	103	103	103	105	110	110	110	110	110	110	112	117
Guntur	94	97	100	105	110	110	115	115	115	115	115	108	110	110	112	114	114	114	108	103	103	103	105	110	110	110	110	110	110	112	117
Ongole	94	97	100	105	110	110	115	115	115	115	115	108	110	110	112	114	114	114	108	103											

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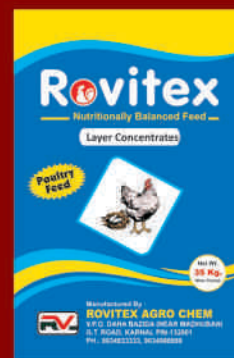
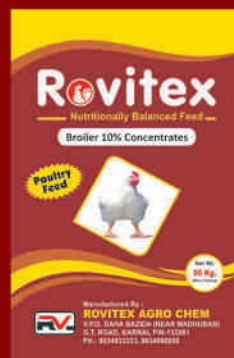
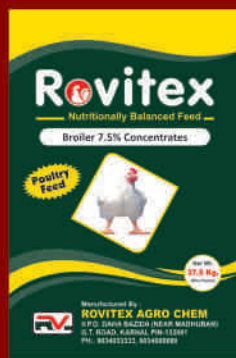
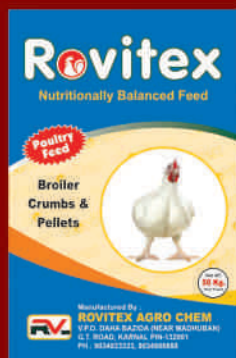
- ❖ Broiler 10% Concentrates
- ❖ Broiler 7.5% Concentrates
- ❖ Broiler 5.5% Concentrates
- ❖ Broiler 3.5% Concentrates
- ❖ Broiler 2.5% Concentrates
- ❖ Broiler 1.5% Concentrates

Layer Concentrates:

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

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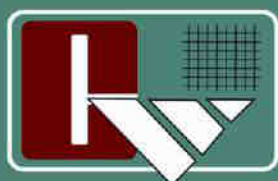
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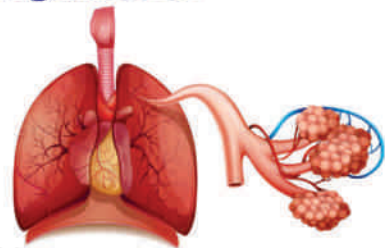
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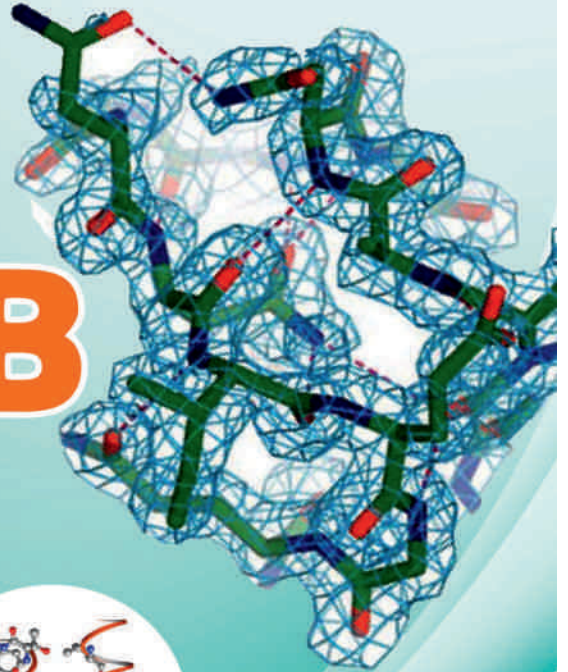
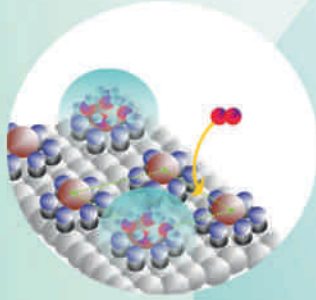
Jumbo Drinker



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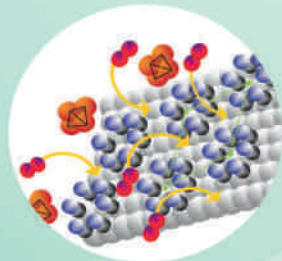
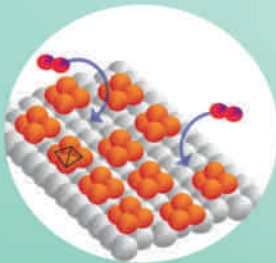
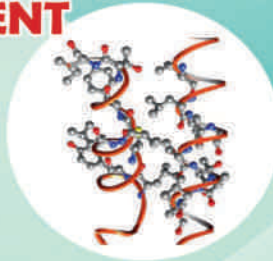
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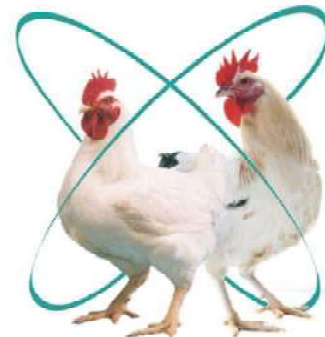


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