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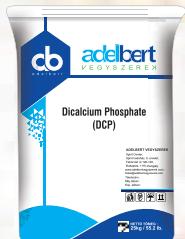
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## Dangers of Power

Secularism in Europe means keeping politics away from religion or maintaining distance and offering freedom.

But in India Secularism seem to support hatred towards a majority and bashing up by the minorities. Politics of, by and for the religion. This idea with media control gone is no more sustainable. Suppressing and hatred in the name of religion and systematic fragmentation and destruction of the delicate fabric is now exposed.

Democracy is in peril if the elected opposition crosses limits just to gain votes and power. It appears the opposition whoever it maybe can be worse than a real external enemy.

Lately, the judiciary also shocks the conscience of the general public by passing judgments and acting in a blatant shocking manner.

The Manipur crisis has traces of several joint connivance of International political, religious foot prints. A particular community heavily advertises and highlights issues only to raise money internationally. There is a global scale interference in destabilizing India- citizens beware!

The west who seem to claim ownership of human rights have been historically the perpetrators of exploitation, slavery, holocaust war crimes and so on. They at least don't qualify to advise other countries in that capacity. Where are the Human rights principles when they unite blatantly to dump money and destructive arms and ammunition to continue kill human beings in the Ukraine & Russian war?

The western superiority complex of considering other nations as not so equal and also the attitude that the enemies of the west should also be considered as their enemies is absolutely myopic and resisted by many others recently. African continent had started to be more aware of their exploitation for centuries and are steadily awakening.

Indian Poultry needs to change from traditional ways of farming. Farmers need to open up for understanding and use of better Nutrition - enzymes, bio-available minerals, hygiene etc. focus on improving gut health by the choice of proven additives will help. Wiser to Invest more on disinfectants and less on antibiotics and treatment.

It's not that Russia is right but at the same time the US & Europe are no better. If Russia, America & Europe are powerful that comes with big responsibility. Today USA and Russia are dangerously stoking a threat of nuclear war- are they worthy of such thinking which will eliminate the civilization and life from this planet. Europe plays impotent in the hands of US. In this war it is the Europe that is the biggest sufferer. One unwise Zelensky destroyed his own people and country and US meets its political objectives of fighting its sworn enemy through the shoulders of Europeans and on the bodies of the Ukrainians.

It's no brainer that the Europeans are the real scapegoats

# Present Status of Poultry in Jammu and Kashmir

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## Introduction:

Poultry farming is not new in not new in J & K and it has been practiced for the farmers since the time immemorial. Poultry farming has immense potential in Jammu and Kashmir. Despite the strenuous efforts, poultry farming is not picking up pace in Jammu and Kashmir. In J & K, there is 69 percent shortfall in the poultry meat and 97 percent shortfall in the poultry egg production. The gap between demand and supply of poultry meat and eggs fulfill by other states of the country specially Punjab state. In J & K UT, every year around Rs. 2000 crores of meat is imported from the outside of the JK. A little progress has been made on the broiler production in the state but poor progress has been made in commercial egg laying industry in the J & K. Some outstanding dual purpose poultry strains such as Chabro and Vanraja have been introduced in the J & K which have raised hope for mitigating the eggs and meat need in the J & K.

Most of the backyard poultry production in the J & K comprises the indigenous birds. The indigenous poultry birds produce only 60-80 eggs per year and meat production is also very less. Commercial poultry production can be easily boosted in the J & K with introduction of improved varieties of poultry which can lay 160-200 eggs per year and also produce more meat. In J & K, Poultry farming is emerging an important enterprise and is assisting to create income and employment for the rural youths of the state. There is immense potential of poultry farming in the J & K. Government is offering the various incentives to motivate the aspiring poultry farmers of the J & K. All Krishi Vigyan Kendra (KVKs) of the J & K are imparting training programmes on advance poultry farming to the farmers and creating interest on poultry farming. Veterinary College, RS Pura has introduced black meat poultry variety namely Kadaknath in the J & K which is very low in cholesterol (0.73-1.05%), rich in protein (25%), vitamins and helpful for the asthmatic and nephritis patient. The meat and eggs of this poultry variety are costly and can help to raise the socio-economic status of the farmers. Now, many farmers of the area become the poultry entrepreneurs.

The cost of quality proteins is increasing rapidly. Due to poor purchasing power of the farmers, their family's members suffer malnutrition especially of animal

protein. The poultry sector can ensure the proper nourishment of the farmer's families besides income and employment. Poultry birds can increase the income of the farmers as poultry farming requires low inputs, have short gestation period and give better and quick return. In the domestic market, the consumption of poultry meat has been low due to many reasons such as low purchasing power of people. Only 25 percent of the population living in the urban areas consume about 75-80 percent of the eggs and poultry meat. Per capita consumption of egg is 100 and poultry meat is 1.2 kg per person per annum in urban area. But in rural area, it is only 15 eggs and 0.15 kg poultry meat.

**Table 1. Present status of Poultry in Jammu & Kashmir (2019 data) :**

	Rural Poultry	Urban Poultry	Total Poultry (Rural + Urban)
	7068535	297773	7366308

**Table 2. Detail of fowl in Backyard Poultry of JK under Rural area (2019 data) :**

Type of birds	Category	Rural Area JK	Urban Area JK	Rural + Urban Area JK
Cock	Desi	299173	7989	307162
	Improved	179575	11221	190796
	Total	478748	19210	497958
Hen	Desi	627017	16593	643610
	Improved	311483	19557	331040
	Total	938500	36150	974650
Chicken bkd 5 months	Desi	497161	9418	506579
	Improved	258587	23262	281849
	Total	755748	32680	788428
Total Fowl in Backyard Poultry	Desi	1423351	34000	1457351
	Improved	749645	54040	803685
	Total	2172996	88040	2261036
Ducks in Backyard Poultry	Drake	8174	535	8709
	Duck	15350	3587	18937
	Duckling below 6 month	4849	564	5413
	Total duck in Backyard poultry	28373	4686	33059
Turkey	Male	1105	40	1145
	Female	391	63	454
	Total	1496	103	1599
Quail	Male + Female	2330	430	2760
Other poultry	Male + Female	4065	1341	5406
	Total Poultry birds in Backyard Poultry	2209260	94600	2303860

Table 3. Detail of fowl in Poultry Farm of JK under Rural area (2019 data) :

Type of birds	Category	Rural Area JK	Urban Area JK	Rural + Urban
Cock	Desi	13437	3069	16506
	Improved	259672	26770	286442
	Total	273109	29839	302948
Hen	Desi	14308	9040	23348
	Improved	297962	31298	329260
	Total	312270	40338	352608
Chicken below 5 months	Desi	81487	595	82082
Total Fowl	Improved	4156955	132235	4289190
	Total	4238442	132830	4371272
Ducks	Desi	109232	12704	121936
	Improved	4714589	190303	4904892
	Total	4823821	203007	5026828
	Drake	5	0	5
Turkey	Duck	33	0	33
	Duckling below 6 month	6	0	6
	Total duck on Poultry Farm	44	0	44
Quail	Male	0	13	13
	Female	0	50	50
	Total	0	63	63
Other poultry	Male	24944	20	24964
	Female	10466	83	10549
Poultry birds in Commercial Poultry	Total Fowl	4823821	203007	5026828
	Duck	44	0	44
	Turkey and Others	35410	166	35576
	Grand Total	4859275	203173	5062448

The poultry population is mainly contributed by fowls in Jammu & Kashmir with total poultry population of 8.27 million numbers in 2012. The changes in the poultry population over previous 3 census (2003, 2007 and 2012) are 5568, 6683 and 8273 (values in thousands), respectively. The total poultry population is showing increasing trend over 2003-2012. The birds have

increased from 5.56 million numbers in 2003 to 8.27 million numbers in 2012. There is an increase of 23.8% in the poultry population during the inter census period (2007-2012). Per capita availability of egg is 47 eggs (2012-13). Rank of Jammu and Kashmir in poultry production is 17 in India and share having 1.135%. Share in egg production is 1%. The population of fowls has been increasing continuously since 2003. The fowls have increased from 5.32 million numbers in 2003 to 0.12 million numbers in 2012. The duck population has decreased by 35.98% over the previous census. The turkey and other birds have increased from 0.006 million in 2003 to 0.018 million in 2012 and registered a drastic increase during inter censuses period (2007-2012).

Table. 4. Recent trends of change in population in J & K states of fowl, Duck, Turkey and others (Note: Values in thousand)

Species	2003	2007	2012	% change from 2007-2012
Fowl	5325	6487.4	8134.35	25.39
Ducks	237	190.30	121.84	-35.98
Turkey and other poultry	6	5.86	17.53	199.35
Total poultry	5568	6683	8273.71	23.8

Fig. 1. The changes in the poultry population over previous 3 censuses (AH 2012 data)

Poultry population of J & K state in thousands from 2003-2012

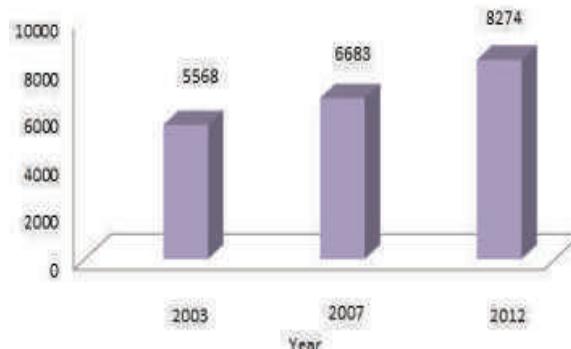


Table 5. District wise Poultry population of Jammu & Kashmir states (AH 2012 data)

Sr. No.	District	% Share
1	Badgam	13.48
2	Jammu	13.00
3	Pulwama	11.79
4	Baramula	9.92

5	Kupwara	6.60	13	Samba	2.42
6	Bandipore	5.01	14	Punch	2.28
7	Ganderbal	5.00	15	Udhampur	1.92
8	Kathua	4.86	16	Doda	1.92
9	Shinagar	4.82	17	Shupiyan	1.36
10	Kulgam	4.15	18	Ramban	1.35
11	Rajouri	3.93	19	Reasi	1.32
12	Anantnag	2.86	20	Other district	2.00

Fig.2. District wise % share of poultry population of Jammu & Kashmir states (AH 2012 data)

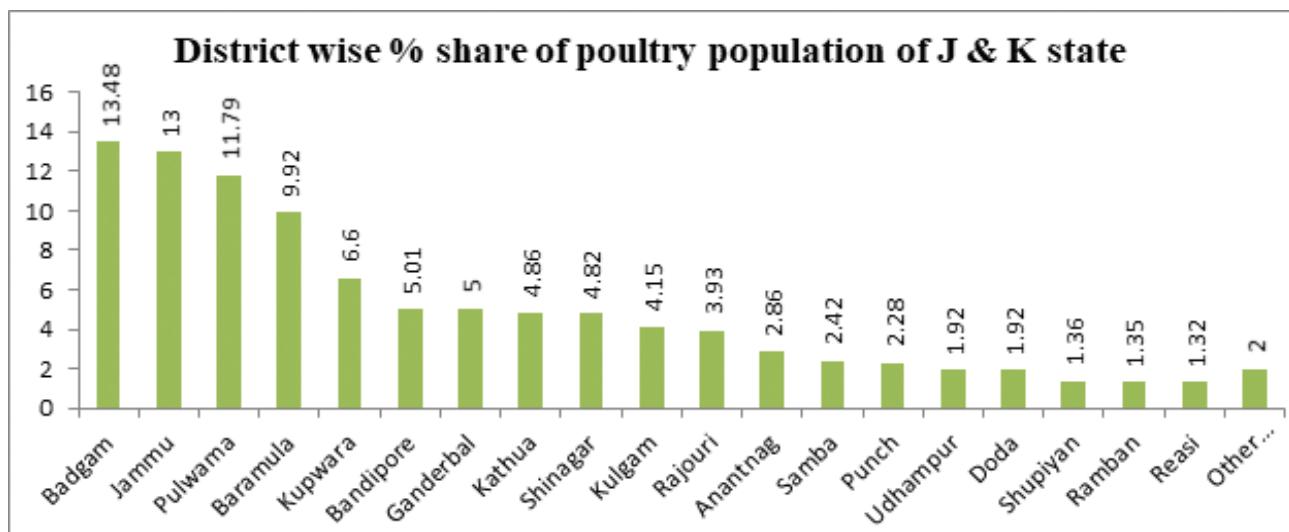
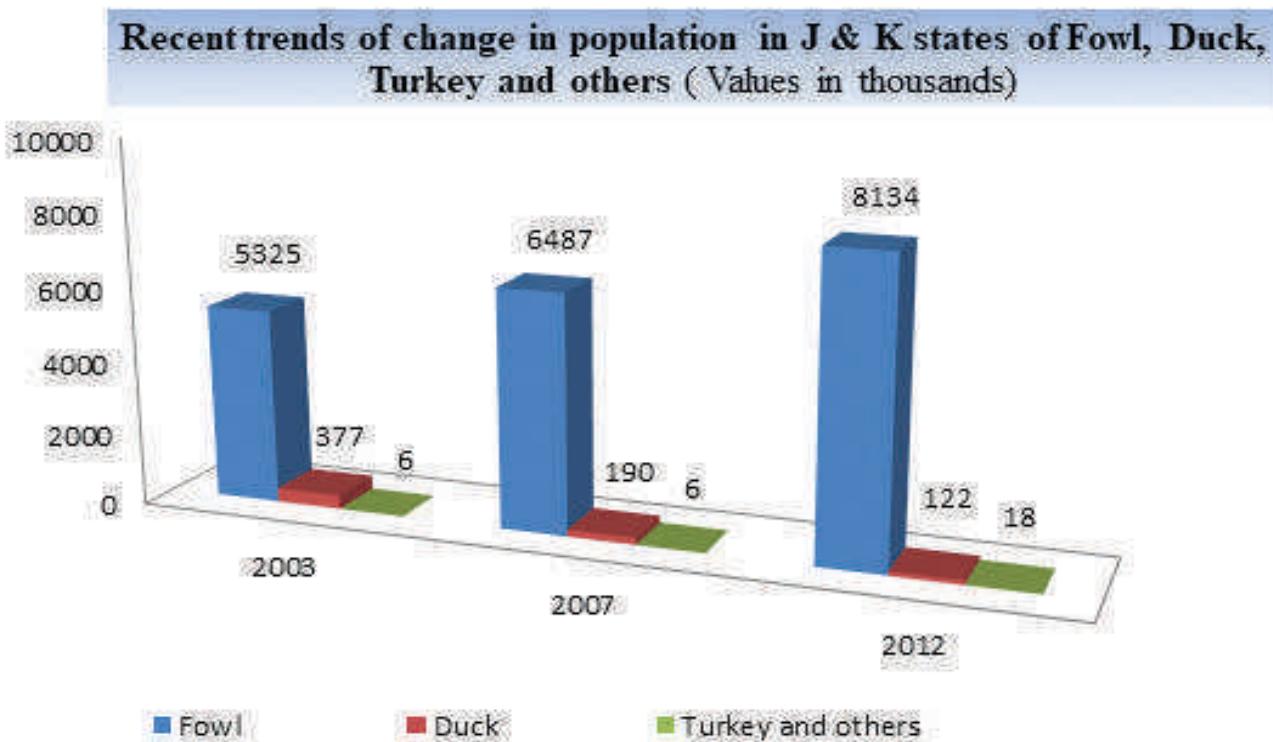


Fig. 3. Recent trends of change in population in J & K states of fowl, Duck, Turkey and others (AH 2012 data)



Around 60% rural population in India has backyard poultry population. Poultry has been there in the backyards of most of the houses since ages, forming a part of nutrition and family income. Government has started encouraging the backyard poultry for the rural development. Improved varieties of low technology input birds are bred for this production in comparison to the local poultry.

Egg industry showed an excellent growth in the country due to :

- o Egg layer industry large units with millions of birds in one house are coming up
- o 70% of the egg laying birds are in the states of Andhra Pradesh, Tamilnadu, Maharashtra and Karnataka
- o Fresh eggs are available at more reasonable costs

**Broiler industry grew in the country because:**

- o The commercial broiler chicks ready in 35 days with tender meat
- o Movement of parent stock, hatching eggs, day old chicks initiated the broiler growing everywhere
- o The broiler growing period has gradually come down to less than 35 days from 60 days due to advance technologies in the poultry industry. Broiler rearing is giving excellent results. 2 kg broilers are produced on 36 days with 3 kg feed
- o Less than 3% mortality are being achieved on low cost open house reared by the small and marginal farmers.

**There are numerous opportunities in the poultry industry in India due to**

- o Government policies relating to investments in poultry and related industries, taxation, import duties, excise duties are favourable.

- o Increase in income and employment generation for the rural poor and marginal farmers
- o Consumer awareness and acceptability of eggs and chicken a good source

There are certain challenges in poultry industry such as :

- o Poor infrastructure for export is hindering the export of poultry products
- o Competition from international players on opening up duty free imports, lifting of trade barrier
- o Increasing propaganda and demonstrations on promoting vegetarianism and animal rights
- o Occurrence of Salmonella and other diseases in poultry meat
- o Many countries are dumping their poultry products i.e. exporting eggs at prices lower than production cost
- o Many countries are protecting their poultry industry from foreign competition by protective measures like restricting imports and keep their price low.

As the poultry industry among the fastest growing in the world, it needs greater integration, better cost effectiveness and improvement in the distribution. More retail outlets, mass gathering and creating awareness to home to home about the nutrition values of chicken and eggs is needed. Poultry industry needs good branding system in order to increase the consumption of chicken. The poultry companies have to encourage direct procurement of maize from farmers by using contract farming. Also, the collection of reliable, updated statistics is necessary for immediate and long term planning and thereby helping in preventing shortages in poultry farming. There is need to develop efficient, independent, authority for disease monitoring, biological quality control and biosecurity measures in the poultry industry.



**Mohd. Tareq Irfan**  
**Mob. No. +91 950 5659670**  
**+91 738 6503377**  
**Tel : 040-64555376**

# **ATA Packing Products**

## **ATA Imports & Exports**

**Works : Survey No. 283/1, Anupuram, Jedimetla, Phase III, Hyderabad - 500 004.**

**Business Center : First Floor, Siraj Residency, 36-1 Defence Colony, Sainikpuri, Sec'bad - 094.**

**Email: [atapackingproducts@gmail.com](mailto:atapackingproducts@gmail.com), [ataimportsexports@gmail.com](mailto:ataimportsexports@gmail.com)**

## Broiler Lifting Rates for the month of JUNE-2023

place	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
Hyderabad	141	141	141	144	144	149	151	161	166	168	168	168	168	168	168	168	168	168	168	168	160	150	150	150	140	140	130	132	135	138	138	140	140		
Karimnagar	141	141	141	144	144	149	151	161	166	168	168	168	168	168	168	168	168	168	168	168	160	150	150	150	140	140	130	132	135	138	138	140	140		
Warangal	141	141	141	144	144	149	151	161	166	168	168	168	168	168	168	168	168	168	168	168	160	150	150	150	140	140	130	132	135	138	138	140	140		
Mahaboobnagar	141	141	141	144	144	149	151	161	166	168	168	168	168	168	168	168	168	168	168	168	160	150	150	150	140	140	130	132	135	138	138	140	140		
Kurnool	141	141	141	144	144	149	151	161	166	168	168	168	168	168	168	168	168	168	168	168	160	150	150	150	140	140	130	132	135	138	138	140	140		
Vizag	137	137	137	137	137	142	144	154	159	161	161	161	161	161	161	161	161	161	161	161	155	148	148	148	148	148	138	128	130	130	130	130	132	132	
Godavari	139	139	139	142	142	147	149	159	164	166	166	166	166	166	166	166	166	166	166	166	160	153	153	153	153	143	143	133	135	138	138	138	140	140	
Vijayawada	139	139	139	142	142	147	149	159	164	166	166	166	166	166	166	166	166	166	166	166	160	153	153	153	143	143	133	135	138	138	138	140	140		
Guntur	143	143	143	146	146	151	153	163	164	166	166	166	166	166	166	166	166	166	166	163	156	156	156	156	146	146	136	138	138	138	138	140	140		
Ongole	143	143	143	146	146	151	153	163	164																										
Nammakal	127	129	129	129	129	130	135	137	139	139	139	139	139	139	139	139	139	139	139	141	141	143	143	143	143	138	135	133	128	128	110	114	114	114	114

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Multi-purpose disinfectant



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against **Avian Influenza** Virus



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- Biodegradable & high residual effect
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- Effective even at 400 ppm hardness & 5% organic matter

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Tylvalosin 62.5% oral solution & Tylvalosin 10% feed premix

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Tiamulin Hydrogen Fumerate

### **SYLOCIN**

Ofloxacin Hcl 10% Water Soluble

### **TYLONA**

Tylosin Phosphate 10% & Tylosin Tartarate WS

### **AVIZITH**

Erythromycin Thiocyanate 10%

### **AVIMAX**

Combo of Levofloxacin, Azithromycin & Bromhexine

### **SYLOZITH**

Azithromycin 10% water soluble



**Fauna Remedies Inc**

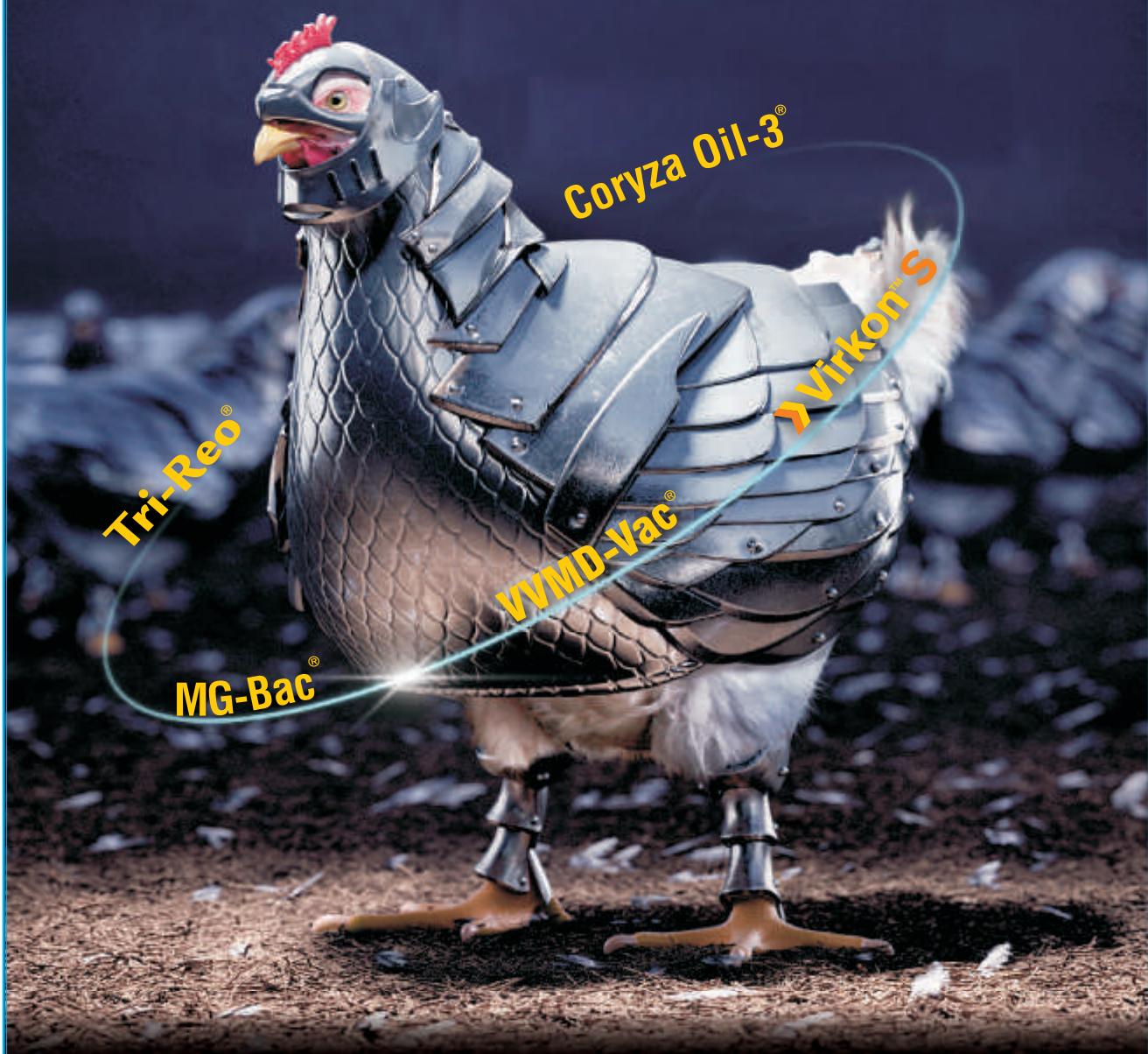
**Corporate Office:** 2-5-114/24, Sai Ram Hills Colony,  
Road No.3, Nagole, Hyderabad, Telangana - 500068.  
E-mail: [info@sylon.in](mailto:info@sylon.in), [www.sylongroup.com](http://www.sylongroup.com)

**Sylon Bio Pharma**

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**Customer care number**  
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# Butrient®

Esterified butyric acid



**Butrient is designed for gut health improvement based on butyric ester formulation (tributyryin)**

#### **COMPOSITION:**

Butyric acid (esterified) min. 50%

#### **BENEFITS:**

- Gut villi development and protection.
- Improved nutrient absorption.
- Saves feed costs.
- Helpful in antibiotic-free (ABF) production.



#### **RECOMMENDED USAGE:**

200g per ton feed

#### **PACKING:**

25 Kg

Administrative Office:

**APC Nutrients Pvt. Ltd.**

(AN ISO 9001-2015 Certified Company)

506, 5th Floor, Amsri Eden Square,

St. John's Road, Secunderabad - 500003

Telangana

Phone: +91 40 2789 9273, 27849798

+91 40 27815777

Email: [admin@apcnutrients.com](mailto:admin@apcnutrients.com)

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**APC Nutrients**

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**IBird®**  
+ Cevac® Vitabron L

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ONLY VACCINE  
in INDIA for  
IB VARIANT  
STRAINS



**HEALTHY  
CHICKENS**

**Cevac Ibird® + Cevac® Vitabron L**  
**infectious bronchitis under control from the hatchery**

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Live attenuated vaccine  
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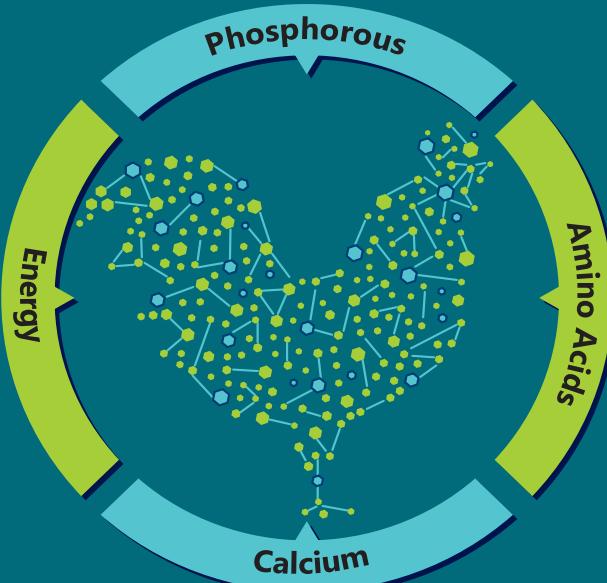
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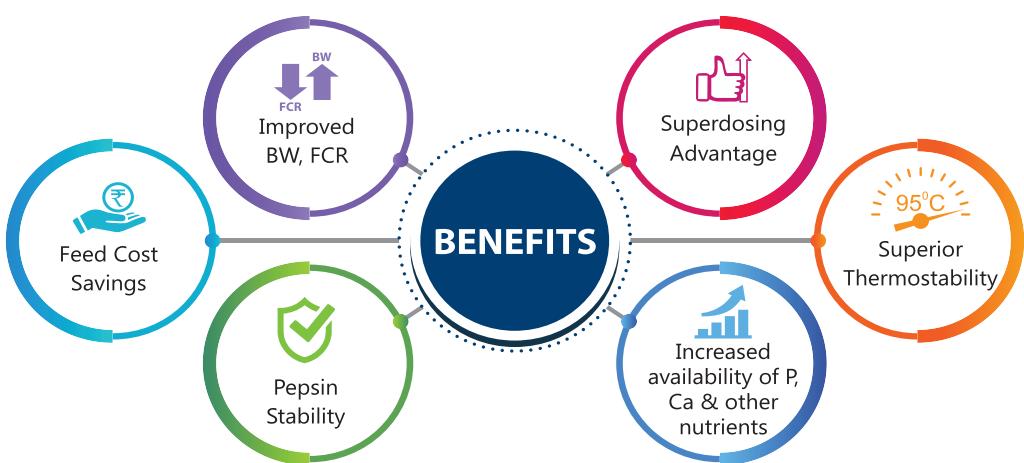


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Mr. O. P. Singh

Managing Director, ABTL

In a recent interview with Engormix - Media Partner from Argentina, Mr. O. P. Singh shared his ideas on the **Harnessing the Potential of the Poultry sector in India**

**Following were the questions asked during the interview :**

- What are the most significant untapped opportunities for growth and innovation in the Indian poultry sector?
- How can the Poultry Industry in India support sustainable and inclusive economic development?
- What role do public-private partnerships play in driving innovation and investment in the Indian poultry sector?



Scan the QR code & watch  
exclusive the interview

## A Tool for Phytate Degradation and Nutrient Utilization

### Welcome to Nutrinomics...

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

### Introduction

#### Phytate :

The latter part of the past century witnessed drastic increases in the size of poultry facilities for better efficiencies and lower production cost. Concurrently, fast-growing, or high producing breeds of poultry were developed and raised to utilize a plant-based feeds in their ration. But one of the major drawbacks of this ration is that it contains high phytate concentration making phosphorus unavailable to poultry, thus increasing the amount of inorganic phosphorus in poultry diet. The unutilized feed phytate was largely excreted by these simple stomached species and rendered phosphorus in their excreta too high to be applied to cropland. The other menace phosphorus rich excreta pose is eutrophication.

#### Phytate : An Antinutritional Factor

Phytate is a polyanionic molecule with the potential to chelate positively charged nutrients, which is almost certainly fundamental to the anti-nutritive properties of phytate.



#### Impact of Phytates on

**a. Feed cost :** Phytates present in grains influences feed cost, because of which more exogenous P is required in feed. Generally, nutritionist tend to keep excessive P levels into normal poultry diet to guarantee a safety margin. Thus, it leads to increase in feed cost.

**b. Effect on birds performance :** Phytate has also been identified as an anti-nutritional factor. It can bind with other minerals, protein and starch, preventing their absorption in the digestive tract and make them unavailable to the birds.

**c. Impact of phytate on protein/ amino acid availability :** Protein-phytate complexes may be present in plant feedstuffs, but mostly such complexes are formed in the gastrointestinal tract. These complexes, has a negative influence on protein availability, which could occur in several ways. The consequences of which is low protein and amino acid availability.

**d. Phytate interaction with digestive enzymes :** Phytate is known to inhibit a number of digestive enzymes such as pepsin,  $\beta$ -amylase and trypsin.

**e. Impact of phytate on mineral availability :** The structure of phytic acid is indicative of its strong chelating potential. Phytate is a strong acid and forms a wide variety of insoluble salts with divalent or trivalent cations at lower pH, potentially rendering these elements unavailable for absorption.

**Degradation of Phytic Acid :**

Degradation of phytic acid may occur by hydrolytic splitting of the ester bond of phytic acid through various processing effects and/or by phytase, either from animal, plant or microbial sources.

**Factor Affecting Utilisation of Phytate Phosphorus**

Phosphorus is a very expensive mineral in poultry diet. The availability of phosphorus in plant feedstuffs varies from zero to more than 50%. It has been reported that the hydrolysis of phytate ranges from 3 to 42%. Poor utilisation of phosphorus not only results in higher cost of production, but also leads to environmental pollution. There are many factors which affect efficient utilisation and phytate bound phosphorus in poultry diets.

**a. Genotype of bird :**

The average retention of phytate phosphorus by Leghorn chickens is greater than by meat type broilers

**b. Age of bird :**

Phytase activity in gastro intestinal tract increases with age.

**c. Dietary calcium level :**

Calcium forms a precipitate with phytate in the gastrointestinal tract very easily due to its high concentration in ordinary diets. Therefore, phytate hydrolysis is inversely related to dietary calcium levels.

**d. Dietary vitamin D3 :**

Phytate phosphorus utilisation is improved in response to vitamin D3 supplementation and may be attributed to one or more of the following three mechanisms:

- (1) increased synthesis or activity of intestinal phytase
- (2) increased phytate hydrolysis
- (3) enhanced absorption of phosphorus.

**e. Dietary fibre content :**

The cation exchange properties of dietary fibre in the diet may reduce the effective concentration of cations in the gastrointestinal tract, increasing phytate hydrolysis.

**f. Type of feed ingredients :**

The source of phytate can influence the availability of phytate phosphorus. Susceptibility of phytate from different feed ingredients to phytase activity is variable. This may be due to solubility at acidic pH, as soluble phytate will be more readily hydrolysed by phytase.

**Phytase Enzyme**

Phytase is an enzyme which hydrolyses phytic acid to inositol and inorganic phosphorus, leading to improved phosphorus utilisation and overall performance of broilers.

**Characteristics of Phytase :**

The Nomenclature Committee of International Union of Biochemistry (1979) lists two phytase:

(1) 3-phytase (Enzyme Classification 3.1.3.8.)

(2) 6-phytase (Enzyme Classification 3.1.3.26):

It is said that 6-phytase is better than 3-phytase, because 6-phytase will dephosphorylate a phytic acid molecule completely, whereas a 3-phytase may leave the job unfinished, leaving at least one unit of phosphorus unreleased.

**WHY ADPHOS ?**

ADPHOS is a highly efficient 6-phytase derived from E.coli. ADPHOS has high affinity towards phytate, ensuring that even in diets with low phytate levels, it works with full efficacy to release nutrients that would otherwise be chelated by phytate.



**Benefits of ADPHOS®**

ADPHOS increases bioavailability of phosphorus, calcium and amino acids.

**a. Growth performance :**

Supplementation of ADPHOS in poultry feed has been shown to increase body weight gain, feed intake and feed efficiency in broiler chickens, this is due to increase in availability of all nutrients which are bound to phytic acids.

**b. Availability of protein and amino acids :**

ADPHOS degrades phytate and is able to release phytate-bound protein. This leads to enhanced protein availability improved nitrogen retention. The magnitude of response to ADPHOS is greater in ingredients containing high level of phytate. It has been reported that poorly digestible feedstuffs are more responsive to ADPHOS than those with higher inherent digestibility. The source and chemical properties of both phytate and protein also contribute to the variability of protein and amino acid digestibility.

**c. Energy utilisation :**

ADPHOS has a positive effect on energy parameters. Improvement in protein/amino acid digestibility in poultry diets with added ADPHOS would be expected to result in improved energy utilisation.

**d. Phosphorus and calcium availability :**

Calcium retention increased linearly with increasing levels of supplemental phytase and decreased as the Ca:P ratio of the diet becomes wider and as the level of non-phytate phosphorus is increased.

**e. Availability of other minerals :**

Phytic acid chelates with cations (Ca, Mg, Zn, Mn and Cu), rendering them unavailable. ADPHOS, hydrolysed this phytic acid and releases the bound minerals.

**f. Control in environmental pollution :**

Poultry manure is becoming a major burden on the environment. Poultry manure is rich in phosphorus and is one of the major sources of phosphorus runoff leading to eutrophication. Eutrophication results in proliferation of algae and some aquatic weeds, thus harming fish and other aquatic life.

**ADPHOS® at a Glance**

Improved BWG, FCR



Superior Thermostability



Increased availability of P, Ca & other nutrients



Superdosing Advantage



Pepsin Stability



Feed Cost Savings

**ADPHOS® and its Economics**

By using ADPHOS 5 & ADPHOS 10, we can replace up to 8 kg of DCP per tonn of feeds, which roughly come close to Rs 450/-.



Phytate- phosphorus contents of common feed ingredients (% DM basis)

Sr.No.	Feed Ingredients	Phytate-P (g/100g DM)	Phytate - P (% of total P)
<b>Cereals</b>			
1	Barley	0.27	64
2	Bajra	0.23	74
3	Corn/Maize	0.24	72
4	Common Millet	0.17	65
5	Finger Millet	0.14	58
6	Foxtail Millet	0.19	70
7	Oats	0.29	67
8	Rice, Polished	0.09	51
9	Rice, Unpolished	0.27	77
10	Broken Rice	0.09	60
11	Sorghum	0.24	66
12	Wheat	0.27	69
<b>Cereal by Products</b>			
13	Rice Bran	1.03	80
14	Rice Polish	1.08	84
15	Wheat Bran	0.81	73
<b>Roots and Tuber</b>			
16	Cassava Root Meal	0.04	28
17	Potato Tubers	0.24	21
18	Sweet Potato Tuber Meal	0.05	24
19	Taro Corn Meal	0.09	24
<b>Grain Legumes</b>			
20	Black Gram	0.39	74
21	Chick Peas	0.21	51
22	Cowpeas	0.26	79
23	Field Peas	0.24	50
24	Gingelly	1.09	81
25	Green Gram	0.22	63
26	Lentils	0.31	65
27	Pigeon Peas	0.24	75
28	Winged Beans	0.33	58
<b>Oil Seed Meals</b>			
29	Coconut Meal	0.29	49
30	Cotton Seed Meal	0.84	70
31	Kapok	0.64	69
32	Mustard Meal	0.7	59
33	Peanut Meal	0.48	80
34	Rubber Seed Meal	0.35	60
35	Sesame Meal	10.18	81
36	Soyabean Meal	0.39	60
37	Sunflower Meal	0.89	77
<b>Miscellaneous</b>			
38	Alfalfa Meal	0.02	12
39	Cassava Leaf Meal	0.04	10
40	Corn Gluten Meal	0.41	59
41	Isolated Soy Protein	0.48	60
42	Subabul Leaf Meal	0.02	9

(Source: Ravindran et al., 1994; Ravindran et al., 1995; Tyagi et al., 1998; Selle et al., 2000)



## A Glorious Celebration: EXPO a part of Silver Jubilee Commemoration of AFAQAL



Animal Feed Analytical and Quality Assurance Laboratory (AFAQAL) located at the egg city of India, 'Namakkal' recently celebrated an extraordinary event 'EXPO' themed on FEED MILLING TECHNOLOGY, which was part of Silver Jubilee Commemoration of AFAQAL that left an incredible mark on its history on 23rd and 24th of June 2023. This event was organized by Dr. A. Natarajan, Professor and Head, AFAQAL, VCRI, Namakkal as Organizing Secretary of the Silver Jubilee Celebrations.

The chief guest of this event Dr. K. N. Selvakumar, Vice-Chancellor, Tamil Nadu Veterinary and Animal Sciences University, Chennai, unveiled a Silver Jubilee pillar at AFAQAL premises and inaugurated the EXPO on 23.06.2023 at Veterinary College and Research Institute, Namakkal. Later, Dr. K. N. Selvakumar, Vice-Chancellor, also honored former Deans of VCRI, Namakkal and former staff of AFAQAL.

While Dr. M. Chellapandian, Dean, VCRI, Tirunelveli, Dr. S. Meenakshi Sundaram, Director, CAPS, TANUVAS, Chennai, Dr. B. Mohan, Controller of Examinations, TANUVAS, Chennai delivered the felicitation addresses, Dr. M. Selvaraju, Dean, VCRI, Namakkal delivered the special addresses. Dr. A. Natarajan, Organizing Secretary cum Professor and Head, AFAQAL welcomed the gathering and Dr. R. P. Senthilkumar, Professor, AFAQAL thanked.

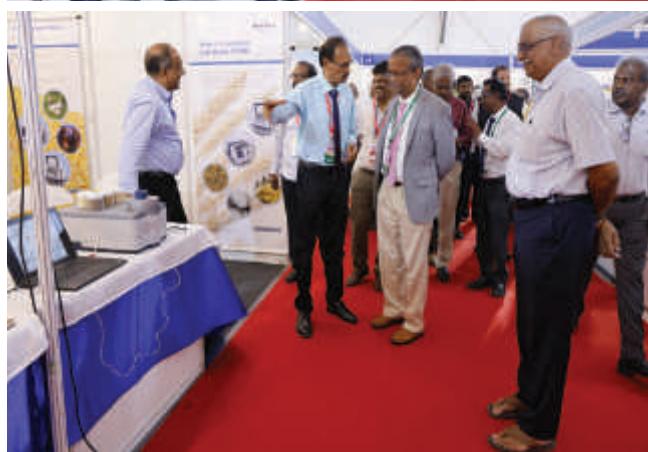
This two-day extravaganza showcased the latest cutting edge technologies of the feed mill fabrications, laboratory

glassware, instrument and equipment, newer feed ingredients, poultry equipment and more on. The stall participants were multinational and industry leading companies who showcased their products which fulfilled the theme of the EXPO. On day one, 2670 visitors (farmers, entrepreneurs, Undergraduate & Postgraduate students, poultry veterinarians, academicians) and on day two, 740 visitors were benefitted from 34 stalls, displaying & demonstrating different information of Feed Manufacturing Technologies. A stall guide or directory containing all the stallholder credentials was given to all the visitors for their future reference.

Visitors were enthralled by interactive displays, demonstration of latest feed mill technologies in the EXPO. This event provided a platform between farmers and industrialists for the future growth and development of the feed industry. One to One discussion was arranged for the farmers with the feed mill expert, Mr. Kanakaraj, to clarify their doubts regarding feed milling technology. Refreshment stalls were also placed adjacent to the EXPO hanger, which made the event fulfilled. Special thanks to Dr. R. P. Senthilkumar, Professor, Dr. R. Kavitha and Dr. M. Siva, Assistant Professors of AFAQAL for their immense team work for this glorious event.

AFAQAL's Silver Jubilee Commemoration, the EXPO, was a resounding success and also a time to look back with pride, appreciate the present and set the stage for a future filled with innovation, excellence and positive impact





## NATIONAL EGG CO-ORDINATION COMMITTEE

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

JULY 2023

Name Of Zone / Day	NECC SUGGESTED EGG PRICES																																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Average	
Ahmedabad	555	555	555	530	510	480	480	480	480	480	480	480	480	480	483	485	487	487	487	487	487	487	487	487	487	487	487	487	487	487	-	475.14	
Ajmer	492	495	452	431	421	421	410	410	410	400	390	400	421	425	430	430	430	430	400	370	370	370	370	370	370	370	370	370	390	-	413.89		
Barwala	473	473	446	446	421	421	392	392	392	372	384	389	396	400	400	400	375	365	365	365	365	352	357	375	385	385	385	-	-	396.07			
Bengaluru (CC)	600	580	580	580	570	540	500	500	480	460	460	465	475	490	495	500	505	505	505	505	485	485	485	485	485	485	485	485	485	485	-	497.24	
-2023	553	553	520	520	470	470	445	445	445	445	445	450	460	470	480	490	490	480	460	460	445	435	435	435	435	435	435	435	435	455	460	-	469.17
Chennai (CC)	610	600	590	590	580	560	560	560	530	500	480	480	490	510	520	520	520	520	500	500	470	470	470	470	470	470	470	470	470	480	-	517.93	
Chittoor	603	583	583	573	573	553	523	523	493	473	473	473	473	483	503	513	513	513	513	493	493	493	493	493	493	493	493	493	493	493	-	510.93	
Delhi (CC)	492	492	492	465	465	438	435	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	405	-	417.17	
E.Godavari	535	500	500	450	450	450	450	450	425	425	425	430	440	440	450	460	470	470	470	470	440	425	415	415	425	430	435	440	440	-	449.66		
Hospet	560	540	540	530	500	460	460	440	420	420	425	435	450	455	460	465	465	465	465	445	445	445	445	445	445	445	445	445	445	425	-	457.24	
Hyderabad	540	520	520	500	470	470	450	425	425	425	430	435	445	450	455	455	455	455	455	425	425	425	425	425	425	425	425	425	425	425	-	447.78	
Jabalpur	555	555	555	555	500	475	475	450	425	425	425	435	440	450	455	455	455	455	435	435	435	435	435	435	435	435	435	435	435	-	457.04		
Kolkata (WB)	565	560	540	520	510	510	490	490	480	490	500	520	550	550	550	550	550	550	490	490	480	470	470	470	470	470	470	470	470	470	516	-	510.31
Ludhiana	472	472	455	445	433	405	405	390	390	390	390	396	396	398	403	405	405	405	405	392	374	365	365	365	365	365	365	365	365	385	-	403.46	
Mumbai (CC)	605	585	585	560	530	530	510	485	485	485	490	495	505	510	515	515	515	515	485	485	485	485	485	485	485	485	485	485	480	-	511.79		
Mysuru	600	580	580	570	530	500	500	480	460	462	467	475	490	500	505	512	512	512	512	487	487	487	487	487	487	487	487	487	485	-	498.31		
Namakkal	540	530	520	500	470	470	450	430	435	440	445	450	455	460	465	465	465	465	445	445	445	445	445	445	445	445	445	445	420	-	454.83		
Pune	605	595	585	575	545	535	535	530	510	495	495	495	501	511	511	511	511	500	485	485	475	475	465	465	465	465	465	465	475	480	-	514	
Raipur	549	549	549	525	510	495	495	475	465	455	445	445	445	445	445	445	445	445	445	450	450	435	-	415	415	415	415	415	415	415	-	469.15	
Surat	565	565	565	565	535	500	500	500	500	500	500	500	500	500	500	500	500	500	480	480	480	480	480	480	480	480	480	480	450	-	493.28		
Vijayawada	535	535	500	490	450	450	450	425	425	425	430	440	450	460	470	470	470	470	440	440	425	415	415	415	425	430	435	440	-	449.66			
Vizag	550	515	515	475	475	435	435	435	435	435	450	460	470	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	-	475.86		
W.Godavari	535	535	500	500	450	450	450	425	425	425	430	440	450	460	470	470	470	470	440	440	425	415	415	415	425	430	435	440	-	449.66			
Warangal	542	522	522	472	472	427	427	427	427	427	432	437	447	452	457	457	457	457	427	427	427	427	427	427	427	427	427	427	422	-	447.17		
Allahabad (CC)	543	543	533	524	500	486	476	467	457	448	448	448	448	452	452	452	452	452	443	438	433	429	429	429	429	429	429	429	429	429	-	461.48	
Bhopal	545	545	545	545	515	495	470	460	460	440	440	440	440	440	440	440	440	440	470	470	445	445	445	445	445	445	445	445	445	420	-	467.5	
Indore (CC)	525	525	500	480	460	460	440	440	430	430	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	443	-	450.19		
Kanpur (CC)	500	500	500	476	462	452	443	443	433	433	433	433	433	433	433	433	433	433	433	433	433	433	433	433	433	433	433	433	433	-	439.59		
Luknow (CC)	533	533	533	533	500	490	480	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	-	471.62		
Muzaffarpur (CC)	535	535	525	510	500	480	470	465	465	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	-	463.5		
Nagpur	580	560	550	530	515	510	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	-	475.96		
Patna	535	535	525	510	500	480	470	465	465	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	457	-	463.82		
Ranchi (CC)	553	552	548	533	514	480	490	481	467	467	462	462	462	462	462	462	462	462	462	462	462	462	462	462	462	462	462	462	-	473.66			
Varanasi (CC)	540	540	533	533	510	483	488	467	457	447	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	-	457.17			



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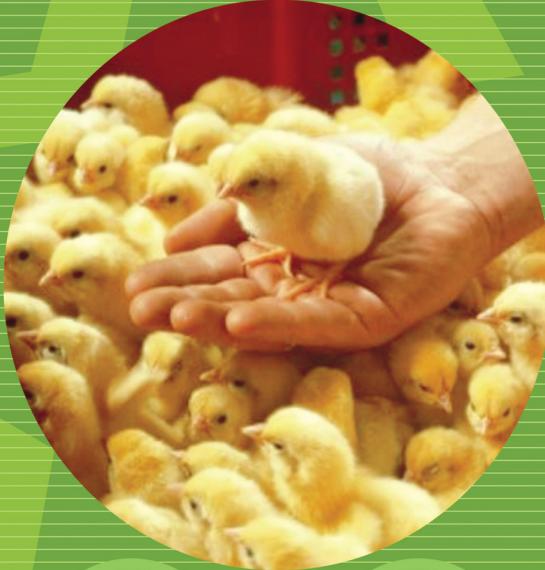
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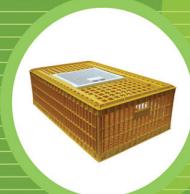
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Zenex AH was formerly Zydus AH

## Microbiome Innovation®: Introducing a novel probiotic strain, *Bacillus siamensis* ZMT02, enabling sustainable poultry farming without antibiotics and AGPs



A collaborative research project of Zenex Animal Health and Zydus Research Centre (Zydus Life Sciences Ltd)

AHMEDABAD, INDIA — Zenex Animal Health unveiled a novel probiotic strain, *Bacillus siamensis* ZMT02 (BSZMT02), the revolutionary gut health solution for chicken that improves production indices, while allowing farming community to withdraw gut-acting antibiotics and AGPs. The breakthrough discovery of the novel strain was possible through years of research at Department of Cell, Molecular Biology and Microbiome Therapeutics, Zydus Research Centre (ZRC), India. Globally, for the first time ever, the discovery pathway involved isolation, strategic screening and strain level characterisation of beneficial microflora from healthy chicken gastrointestinal tract. Probiotic candidates identified during the study were rigorously evaluated for safety, performance, stability, anti-inflammatory and anti-microbial parameters. The novel strain, BSZMT02, embodies all necessary characteristics of an ideal probiotic for chicken enabling antibiotic/AGP free farming.

Scientific presentations were made across different cities viz, Chandigarh, Coimbatore, Bangalore, Hyderabad, Pune and Kolkata amidst of the farming community and poultry professionals by the research lead and PMT. The events were attended by more than 200 eminent stakeholders in the sector involving, layer and breeder farmers, integrators, feed millers and veterinary doctors.

"Antimicrobial resistance (AMR) is a global threat and poultry health sector is under tremendous pressure for restriction on critically important antibiotics and AGPs." said Dr Arun Atrey, MD & CEO, Zenex AH. "Built upon years of innovation, BSZMT02 is unlike anything available before in the category. It unlocks incredible future for the poultry farming community towards sustainability without antibiotics.

"We took a rationale approach while devising the discovery pathway of isolating probiotic candidates from chicken GIT and it has been an exciting journey and truly exemplary." said Dr Kasinath Viswanathan, Head – Microbiome Therapeutics, ZRC. "We always believed that the best probiotic strain can only be obtained from its target host, the chicken in our case and it is just important to set the right criteria of selection." Talking about the pipelines, Dr Kasinath said, "Although full genetic characterisation of the isolated strains including BSZMT02 is completed, we will continue our endeavours in further characterisation of regulatory and functional proteins of the isolates with the goal of improving upon present solution."

"Today is the day we have been looking forward to since last four years and we are thrilled to introduce the unfailing gut health solution." said Dr Susim Mukul Ray, Head – Technical & Promotion (Poultry), Zenex AH. "Controlled field trials throughout India have consistently shown BSZMT02 to significantly improve production parameters without gut-acting antibiotics and AGPs in chicken vis-à-vis control and it is surely going to be a



benchmark in the category." Describing initiatives of Zenex AH in response to AMR threats, Dr Ray said, " We are relentlessly working hard and committed to build strong pipelines alternative to antibiotics/ AGPs and BSZMT02, the novel probiotic strain, is just the stepping stone. However, we look forward to the necessary support of veterinary doctors, poultry professionals and farmers in making these initiatives counts"



# Facilitating Gut Microbiome with Standardized Polyherbal Formulation

The gut microbiome is essential for the health and productivity of chickens. It provides nutrients from dietary substrates that would otherwise go unused, and it modulates the development and function of the digestive and immune systems. The diversity of the chicken GI microbiota is influenced by the age of the birds, location in the digestive tract, and diet. The gastrointestinal compartments of chickens are densely populated with complex microbial communities (Bacteria, fungi, Archaea, protozoa, and virus) that are dominated by Bacteria (Wei et al., 2013). Bacteria dominate the gastrointestinal compartments, with Firmicutes, Bacteroidetes, and Proteobacteria accounting for most (> 90%) of the intestinal bacteria (Wei et al., 2013 and Pan and Yu, 2014).

Commensal microbiota stimulates the development of the immune system and produces energy and nutrients, such as vitamins, amino acids, and short-chain fatty acids, from undigested feed that eventually becomes available for the host. The gut microbiota also contributes to the metabolism of host nitrogenous compounds to produce amino acids, such as glutamine (Shang et al., 2018). Gut microbiota affects feed conversion ratio, body weight gain, apparent metabolizable energy, residual feed intake, and time taken to attain the desired weight, which have a direct influence on the health and productivity of chickens (Iqbal et al., 2020).

However, factors like the environment, feed, heat stress, and housing conditions can cause detrimental changes in the gut resulting in poor health of birds and decreased production performance (Iqbal et al., 2020). When the normal gut microbiota deviates, "Dysbiosis" occurs, which refers to qualitative or quantitative imbalances of microbial populations from normal proportions in the gut (Teirlynck et al., 2011).

Polyphenols can be used to improve gut health due to their established health benefits and strong



antioxidant potential. The gut microbiota-polyphenol interactions are vital in their effects on the gut microbiota modulation. It affects not only the composition of gut bacteria but also improves the bioavailability of polyphenols by generating more bioactive metabolites that enhance their health effects on the morphology and composition of the gut microbiota (Iqbal et al., 2020). Plant additives, such as phytogenic feed additives, can improve the absorption, use, and absorption of valuable nutrients and stimulate the immune system. They often improve palatability and feed conversion, leading to improved efficiency of poultry rearing (Windisch et al., 2008).

STODI is a Standardized Polyherbal Formulation of several Indian medicinal plants traditionally known and used for gut health, and it contains fruit rinds of *Punica granatum*, aerial parts of *Andrographis paniculata*, bark of *Acacia nilotica*, fruits of *Terminalia bellirica*, and bark of *Holarrhena antidysenterica*. In research, STODI in the diet of broilers produced a shift in the caecal microbiota conducive to gut health and better performance characteristics. STODI caused a favourable improvement in Firmicutes, Clostridiales, and Ruminococcaceae and Lachnospiraceae. This improvement led to better utilization of carbohydrates and the production of SCFAs that contributed to energy production and gut health (Marimuthu et al., 2019).

In conclusion, polyherbal formulations can facilitate a balanced F:B ratio, promoting gut health and overall performance in poultry. By using herbs with complementary pharmacological properties, polyherbal formulations can provide a broad spectrum of benefits, including anti-inflammatory, antioxidant. The use of polyherbal formulations in poultry production can reduce the need for antibiotics and other interventions while promoting sustainable and responsible production practices.

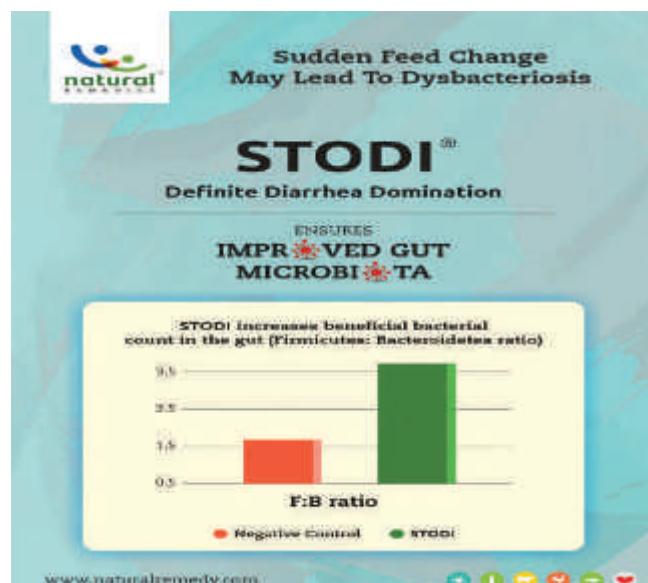
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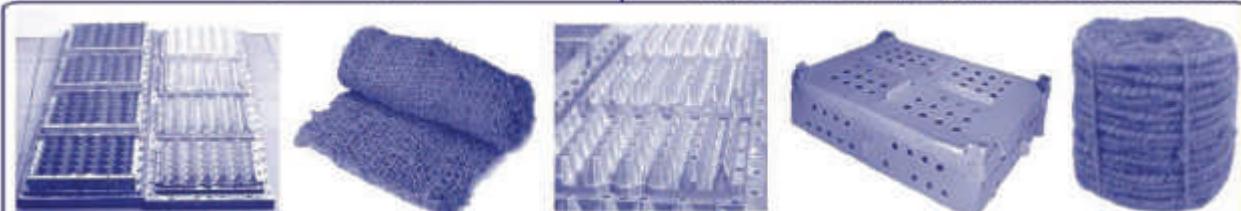
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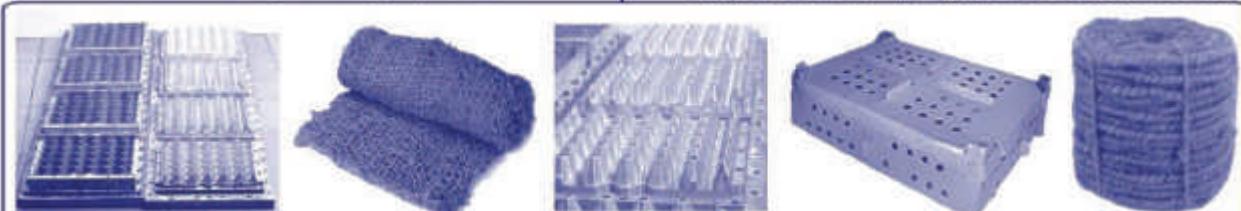
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### Disease Recovery at a Farm in Telangana

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

\*Impacted by VVND

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

Farm Name	Area	Flock Age	Avg Weekly Mortality % in 8 Weeks	Farm Name	Area	Flock Age	Avg Weekly Mortality % in 8 Weeks
SMN Poultry Farm	Namakkal	22	0.19	Sneha PF	Gadwal	45	0.22
Om Sri Ganesh Agri Products	West Godavari	22	0.09	Bhadradri Rama PF	West Godavari	45	0.17
Rajender Agro PF	Vizag	22	0.09	Angammal PF	Namakkal	47	0.13
Vaibhav PF	Sangli	27	0.10	G D Poultry Farm	Namakkal	47	0.25
JSK Poultry Farm	Namakkal	28	0.18	Sarang PF	Sangli	47	0.29
Sri Krishna PF	East Godavari	29	0.21	Balakrishna PF	Medchal	48	0.16
Vigenswara PF	East Godavari	29	0.21	Sri Raghvendra PF	Vizag	48	0.27
KL Poultry Farm	Namakkal	30	0.10	Jahnasi PF	Vijaynagararam	50	0.14
Jahnavi PF	Vijaynagararam	32	0.14	Divya PF	Namakkal	51	0.18
Mahida PF	Sural	33	0.10	Vijaynagar Egg Farm	Ballari	60	0.23
Uddanam Agro Feed & Farms	Srikakulam	36	0.20	Uddanam Agro Feed & Farms	Srikakulam	65	0.18
Geetha PF	Namakkal	38	0.19	JSR Poultry Farm	Yaddatri	67	0.23
Nanda PF	Challakere	39	0.14	Vijay PF	Amravati	70	0.14
Divya PF	Namakkal	40	0.15	Vijaynagar Egg Farm	Ballari	71	0.16
Duraisamy PF	Namakkal	40	0.25	Vijaynagar Egg Farm	Ballari	75	0.25
Tapaswini P.Foods	Vizag	44	0.23	Eggceptional PF	Gajwel	91	0.15

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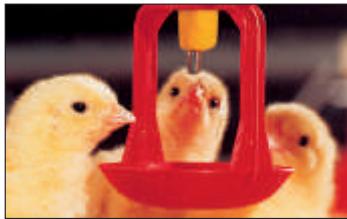
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# Redefining Mycotoxin Management in Poultry with TOXKIL



Mycotoxins, toxic metabolites produced by certain fungi, are detrimental to the poultry industry causing reduced productivity, increased mortality, veterinary expenses, feed wastage, and export restrictions. The most noticeable mycotoxins affecting poultry include aflatoxins, ochratoxins, fumonisins, zearalenone, trichothecenes, and patulin. These mycotoxins can lead to numerous health issues, impacting growth, egg production, and immune response, and in severe cases, causing death. The need for effective mycotoxin management strategies is thus crucial.

innovative blend of ingredients serves as a mycotoxin binder and destroyer, combating mycotoxins' harmful effects. Key components of TOXKIL include:

Mannan Oligosaccharides (MOS): Supports gut health and reduces mycotoxins absorption.

Polyvinylpolypyrrolidone (PVPP): Binds and inactivates polar mycotoxins like aflatoxin.

Copper Oxine: Enhances immunity and helps neutralize some mycotoxins.

Sodium Butyrate: Improves gut integrity and function, enhancing resistance to mycotoxins.

Humic Acid: Acts as a natural binder for several mycotoxins and reduces feed humidity.

Activated Charcoal: Binds to mycotoxins in the digestive system, reducing their bioavailability.

Choline Chloride: An essential supplement in poultry feed, enhancing growth, egg production, and overall productivity.

Hydrated Sodium Calcium Aluminosilicate (HSCAS): A clay-based binder that binds to aflatoxins, minimizing their impact.



TOXKIL works via multiple mechanisms, including:

Silicate Binding: Facilitates the physical adsorption of mycotoxins to TOXKIL, leading to excretion from the body, and preventing harm.

Mycotoxin Destruction: The ingredients of TOXKIL can bio-

Introducing TOXKIL - a game-changing solution in mycotoxin management for commercial poultry. This

transform or deactivate mycotoxins, resulting in non-toxic end products that are safely excreted from the body.

**Liver Protection:** TOXKIL contains hepatoprotective ingredients, ensuring effective detoxification processes and minimizing the impact of mycotoxins.

TOXKIL offers several differential benefits in the field of mycotoxin management:

**Broad Spectrum Binding:** TOXKIL has the unique advantage of binding both polar and non-polar mycotoxins. This makes it more effective as it can tackle a wide range of mycotoxins that many other binders might miss.

**Liver Protection:** Besides binding and inactivating mycotoxins, TOXKIL offers liver protection. This is crucial as the liver is the primary organ involved in detoxification processes.

**Gut Health Enhancement:** TOXKIL contains components like Sodium Butyrate and Mannan Oligosaccharides that support gut integrity and function, further enhancing the bird's resistance to mycotoxins.

**Immunity Boost:** Copper Oxine in TOXKIL enhances the overall immunity of birds, offering an added layer of defense against diseases.

**Improved Productivity:** TOXKIL helps in the overall improvement of productivity in poultry by enhancing

growth, egg production, and nutrient absorption.

In terms of binding both polar and non-polar mycotoxins, the unique blend of TOXKIL's ingredients allows it to interact with a wide variety of mycotoxins, regardless of their polarity.

Polar mycotoxins such as Aflatoxins are attracted to polar substances. TOXKIL's component, Polyvinylpolypyrrolidone (PVPP), is a synthetic polymer that can effectively bind to these mycotoxins due to its polar nature.

Non-polar mycotoxins, on the other hand, are more likely to bind with non-polar substances. Activated Charcoal and Humic Acid in TOXKIL provide a broad surface area and a non-polar environment that can adsorb non-polar mycotoxins.

Thus, TOXKIL's carefully chosen ingredients provide an effective approach to mycotoxin binding, irrespective of the mycotoxin's polarity, ensuring a wide range of protection for poultry.

TOXKIL offers a comprehensive defence against mycotoxins, promoting healthier birds and optimizing productivity. This revolutionary tool for efficient mycotoxin management translates into more profitable poultry operations.

It symbolizes a strategic move towards a future where mycotoxin management in poultry farming goes beyond survival to thriving. Stay tuned for more information on TOXKIL.

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### His areas of expertise include:

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

He can be Contacted at:- **Dr. Manoj Shukla**  
A-1, Gaytri Nagar, Phase-II, P.O. Shankar Nagar, Raipur, Chhattisgarh-492007  
Mob.No : 09644233397, 07746013700, Res. 0771-4270230  
Email : [drmanu69@gmail.com](mailto:drmanu69@gmail.com)

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

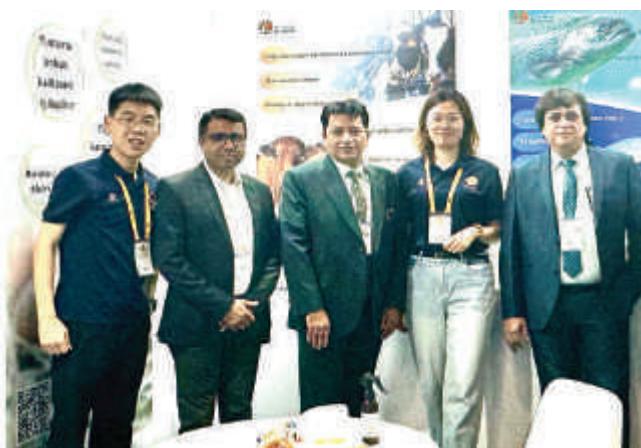
## 10th Edition of VIV Turkey 2023 International Poultry Exhibition organized in Istanbul, Turkey from July 06-08, 2023 A Grand Success – Ricky Thaper

With more than 15,000 business buyers from poultry, meat and feed industry from all over the world at VIV Turkey trade fair for Poultry and Technologies having three halls of exhibit space and more than 300 international and national exhibitors, according to expo organizers, the turnout was exceptional and the feedback from attendees has been extremely positive regarding the education programs and time spent on the trade show floor. This event focused on Innovation- bringing together buyers and sellers of the latest technology of products and services to make trade visitors business successful.

This year a good number of Indian delegates representing the nation's equipment manufacturers, feed millers, poultry breeders and pharmaceutical companies attended VIV Turkey in Istanbul, Turkey. According to the Indian delegation, the visit to VIV Turkey was informative and certainly worthwhile. Delegates took the note of the latest innovations in terms of equipment and logistical organization and see how the technologies could apply at Indian poultry producer level as some of these innovations could well be adopted by Indian poultry producers.



At Aviagen Booth (Left to Right) Dr. Dinesh Arora, Mr. Sanjeev Gupta, Mr. Ricky Thaper, Mr. Duard Kleynhans, Aviagen GGP Production Manager and Mr. Ranpal (Bittu) Dhanda.



At Lachance Booth (Left to Right) Mr. Vincent Xing, Regional Manager, Lachance Group, Mr. Ranpal Dhanda, Mr. Ricky Thaper, Ms. Bonnie Lee, GM-International Department, Lachance Group and Dr. Dinesh Arora. Lachance Group is one of the largest manufacturer of Bile Acids – RUNEON being used worldwide in Poultry, Aqua and Dairy.



Delegates from India with Dr. Bhaskar and Biochem Team at Biochem Booth. Biochem also hosted a nice musical evening and dinner for their customers from different countries attending VIV Turkey exhibition



Delegates from India at ADDICCO Group Booth. Ravioza Biotech is pan India distributor of Fortibac (Product from ADDICCO Group of Czech Republic) in India. Mr. Petr Safranek, Director, ADDICCO Group invited Indian delegates to visit their manufacturing plant in Czech Republic in Europe.



Indian Delegates at Dhopeshwar Engineering Innovations Booth. Mr. Varun Dhopeshwar, Director of Marketing told that they received good number of Trader Enquiries from International Trade visitors at their booth at VIV Turkey Exhibition



At Jefo Booth (Left to Right) Dr. Dinesh Arora, Mr. Ranpal Dhanda and Mr. Ricky Thaper

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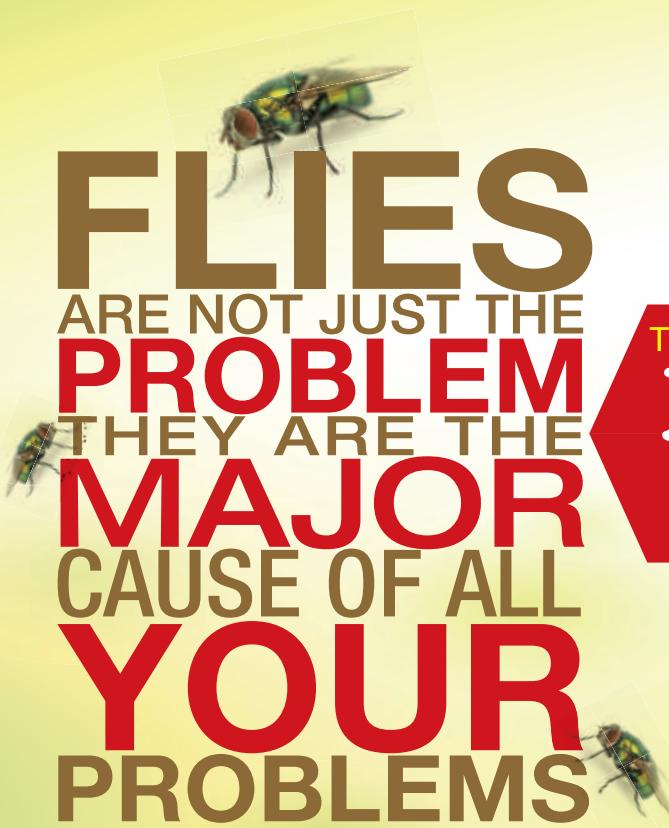
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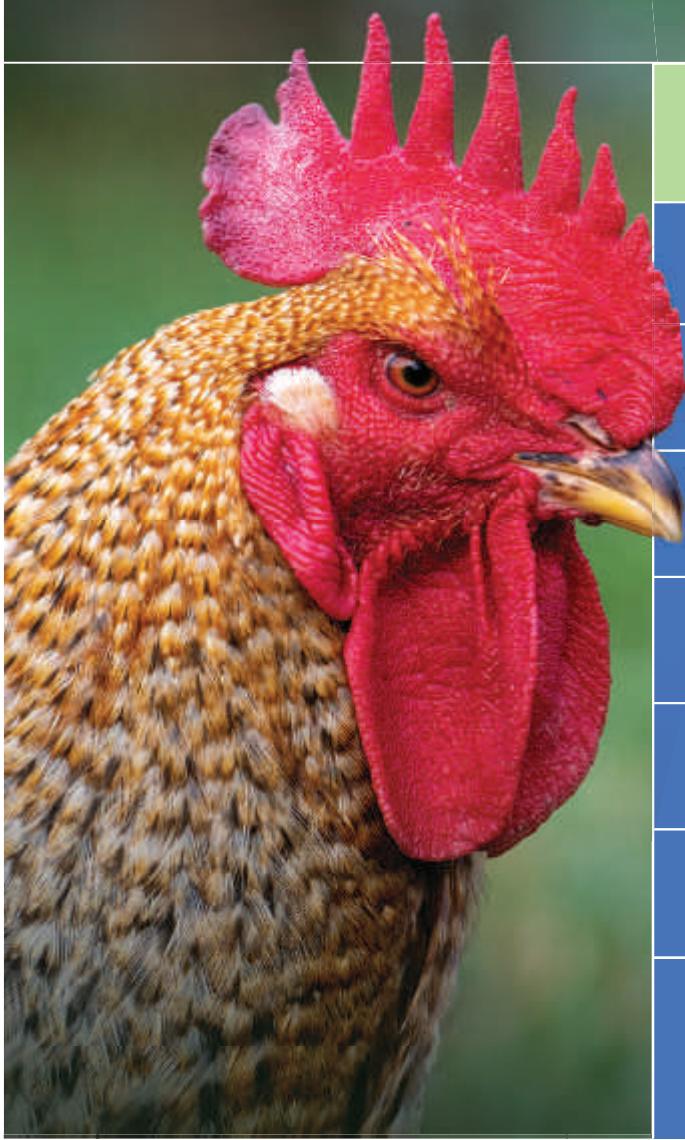
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### Presentation

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### Presentation

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### Vets In Poultry (VIP) Concluded "National Poultry Symposium 2023" at Hotel Taj Deccan, Hyderabad on 28th June 2023

The Vets In Poultry is thrilled to announce the successful completion of its highly anticipated symposium. The event, held on June 28, 2023 at Taj Deccan Hyderabad, brought together more than 650+ esteemed poultry professionals across India from various sectors such as Poultry Farmers, Veterinarians, Integrators, Feed Millers, Broiler & Breeder State Associations, Academicians, Scientists, Media Partners, Pharmaceutical Companies and other segments.

Theme of event was "Exploring Poultry Paradigm – A Holistic Approach by Professionals".

This event was one of its kind because, during it a greater number all time of poultry producers & key stake holders attended this event. The Vets In Poultry (VIP) would like to extend its deepest gratitude to all the stakeholders who contributed to the symposium's success.



Dr. Santosh Ire formally welcomed all speakers, panellist and all participants.

Dr. Ajay Deshpande during his presidential address introduced Vets In Poultry and explained objective, vision and activities of Vets In Poultry to the audience.



The symposium was formally Inaugurated by Chief Guest Dr Ranjith Reddy, Honourable Member of Parliament, Chevalla Constituency in Telangana along with Dr Ajit Ranade, Mr B.S. Yadav, Mr O.P. Singh, Dr Devegowda, Dr Ajay Deshpande and Dr Santosh Ire.



## VETS IN POULTRY (VIP)



**Dr. G Ranjith Reddy** during his speech shared his own journey in poultry farming and mentioned his views on current poultry challenges and opportunities in poultry farming in state of Telangana and India. He ensured complete support from for poultry farming.



The symposium was moderated **Prof. Dr. Ajit Ranade**. During his opening remarks he explained theme of symposium to the audience.

This symposium featured an impressive lineup of renowned speakers,



Mr Balram Singh Yadav



Mr Balram Singh Yadav being honoured



Mr. K. G. Anand,



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## VETS IN POULTRY (VIP)



Dr. Harsha Kumar Shetty



Dr. Harsha Kumar Shetty being honoured

All these eminent speakers who captivated the audience with their thought-provoking, practical presentations and engaging discussions. These industry experts shared their expertise and practical problem, providing attendees with invaluable insights into probable solutions for these problems. Their contributions were pivotal in shaping a highly informative and enlightening event. Throughout the symposium, participants were treated to a diverse range of presentations covering various challenges, opportunities, practices and way forward for the industry fostering an environment conducive to collaborative learning and networking. Attendees were able to expand their knowledge, exchange ideas, and form valuable connections with fellow professionals. Dr Ajit Ranade summarised first session with few key take away from all speaker presentations



Mr. O. P. Singh

In addition to the stimulating presentations, the symposium also featured interactive panel discussions. This session was moderated by Mr O. P. Singh and panellist for session were Dr Girish Kolwankar, Dr J S Reddy, Dr S B Barbuddhe, Dr T Ramesh Babu, Mr Abhay Tangade. This session allowed participants to discuss deeper into specific areas of interest, facilitating dynamic conversations and enabling the exploration of new possibilities. The engagement and active participation of attendees greatly enriched the symposium's overall experience.

Mr O.P.Singh summarised the event with his concluding remarks and paved way for future collaboration between industry, academics and Government of India for better future of poultry farming.



Dr. Girish Kolwankar



Dr. Girish Kolwankar being honoured



## VETS IN POULTRY (VIP)



Dr. J. S. Reddy



Dr. J. S. Reddy



Dr. S. B. Barbuddhe



Dr. S. B. Barbuddhe



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## VETS IN POULTRY (VIP)



The success of the symposium would not have been possible without the support of our esteemed sponsors, media partners and various state level broiler, layer and breeder associations. Their dedication and commitment to support Vets In Poultry's symposium played a pivotal role in making this event a resounding success. We are incredibly grateful for their unwavering support and contribution. All speakers, panellist, moderators, sponsors, media partners and associations were felicitated by Vets In Poultry.

The Vets In Poultry would like to extend its heartfelt appreciation to all the attendees who joined us for this extraordinary event. Your presence and enthusiasm created an inspiring atmosphere, stimulating meaningful discussions and forging new connections. We hope that the symposium has provided you with valuable insights and fresh perspectives that will propel you towards success in poultry farming.

Lastly, the Vets In Poultry would like to express its sincere gratitude to the Organising Committee, Regional Heads and Regional Committee who worked tirelessly behind the scenes to ensure the symposium's smooth execution.

Their dedication, professionalism, and attention to detail were instrumental in delivering an outstanding event. As the symposium comes to a close, the Vets In Poultry looks forward to building on the momentum generated by this successful event.

Team Vets In Poultry remain committed to drive positive changes across Indian poultry Sector to improve farmers livelihood, ensure animal welfare and food safety and security for all. For more information about the symposium or future events, please visit [www.vetsinpoultry.com](http://www.vetsinpoultry.com) connect us at [vetsinpoultry@gmail.com](mailto:vetsinpoultry@gmail.com)

Note: VIP's National Symposium video recording can be viewed on YouTube channel of Vets In Poultry

### About Vets In Poultry

Vets In Poultry, an association having national presence has more than 1000 members actively working in Poultry Farming. Vets In Poultry always put relentless efforts into promoting the health benefits of eggs and Chicken in an innovative and scientific way. Vets In Poultry have a strong commitment to promoting excellence and fostering collaboration with all like-minded associations working for betterment of poultry farming. Team Vets In Poultry always brings together industry experts, researchers, and enthusiasts to advance the poultry farming and drive positive change. Through events, Seminars, Webinars, and networking opportunities, the association aims to empower poultry professionals and contribute to the growth and development of the poultry farming community.



## VETS IN POULTRY (VIP)

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(Participants : All Poultry Sector)

**Theme**

**Exploring Poultry Paradigm -  
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28th January 2023  
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# Curcumin as Phytogenic feed additives for Poultry Production

Shobha, M.,<sup>1</sup> Varalakkshmi<sup>2</sup>, Gopi, M.,<sup>2</sup> Heena, H.S.,<sup>2</sup> K. Bharathi<sup>2</sup> and D. Rajendran<sup>2</sup>

<sup>1</sup> M.Sc. Microbiology, Department of Microbiology and Biotechnology, Bangalore University, Bengaluru – 560 056

<sup>2</sup>ICAR-Animal Nutrition Division, National Institute of Animal Nutrition and Physiology, Adugodi, Bengaluru – 560 030

## Introduction

Poultry production has gained momentum both at local and globally. The demand for poultry meat is rising along with the global human population. The increase in preference for the animal protein source has been the major driving force for this growth. The chickens are frequently raised in intrinsic conditions which lead to poor hygiene and compromised growth. In order to address this issue, antibiotics were widely used to improve the health and growth of chicks. With the increase in intake, the consumer's awareness about the quality and safety of the meat products being produced also increased. Use of growth promoters such as sub-therapeutic dose of antimicrobials in food animals has raised concerns due to residue deposition in muscle tissues and leading to the development of antimicrobial resistance. In order to avoid these conditions, nutritionist and farmers are looking for alternate feed additives that could reduce the sub-clinical infections and maintain the bird's productive performance.

Probiotics, prebiotics, organic acids, enzymes, and phytochemicals are the few feed additives that could potentially serve as an alternate growth promoter. All the above mentioned additives have different mode of action and has their own merits and limitations. The phytogenics are unique plant secondary metabolites which could work similar to the synthetic antimicrobials without the concern of tissue residue and now-a-days people are more attracted towards organic/natural production system. The use of various phytogenics, their mode of action, biological functions are being described in detail.

## Curcumin – antimicrobial function

Some phytogenics, in particular turmeric or curcumin, may be utilized to lessen the overuse

of antibiotics and the issue of antimicrobial resistance, as well as to improve the production performance of the poultry industry (Guil-Guerrero et al., 2017). The effectiveness of turmeric or curcumin in the nutrition of chicken has been the subject of numerous studies. Necrotic enteritis (NE) and avian coccidiosis are two of the most significant infectious illnesses that affect the poultry industry and cause significant economic losses worldwide (Lee et al., 2013). In a study, Lee et al. (2013) found that adding turmeric oleoresin (4 mg/kg) and capsicum oleoresin (4 mg/kg) extracts to the diet could improve growth performance, lessen gut lesions and serum levels of Clostridium perfringens (the causative agent of NE) toxins as a result of molecular and cellular immune changes, and ultimately demonstrate their resistance to avian NE.

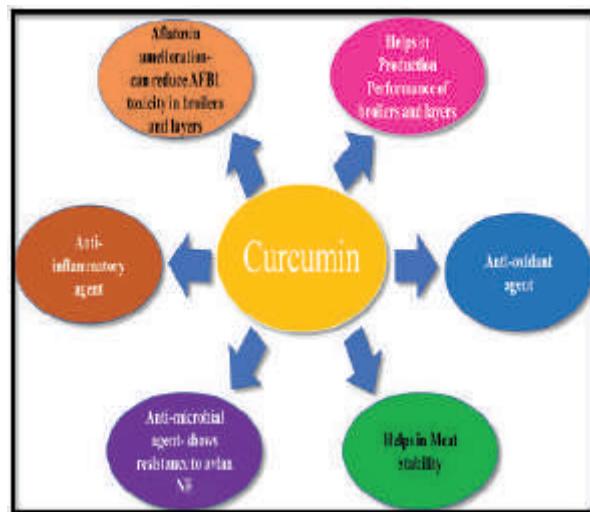


Figure 1: Beneficial effects of curcumin in poultry industry

## Curcumin on production performance

Apart from turmeric or curcumin, the dietary turmeric extract supplementation (100 to 300 mg/kg) could also improve the growth performance,

increase breast muscle content, and decrease abdominal fat content in broiler chickens (Wang et al., 2015). According to Mirbod et al. (2017), increasing dietary turmeric or *Curcuma longa* rhizome powder (CRP) can improve the quality of eggs produced by Leghorn laying hens by boosting egg yolk cholesterol levels while decreasing egg shell thickness and hardness. Low amounts of turmeric powder (2% TP) could slightly increase egg production and quality in Hisex laying hens, but at higher levels (4%) had no effect on body weight or egg production in laying hens. By raising egg yolk cholesterol levels while lowering egg shell thickness and hardness, Mirbod et al. (2017) found that increasing dietary turmeric or *Curcuma longa* rhizome powder (CRP) can enhance the quality of eggs produced by Leghorn laying hens.

In addition to growing chickens, quail farming is receiving a lot of attention today to meet the demand for protein. In quail upbringing, dietary turmeric has demonstrated beneficial effects (Marchiori et al., 2019). The combination of panzyme, an exogenous commercial enzyme, and turmeric (0.5%) has been shown to improve Japanese quail immunity and growth. Additionally, adding turmeric to the diet of Japanese quail parent stock may improve the quality of the eggs by raising the levels of vitellogenin, high density lipoprotein (HDL), vitamin A, B12, and white egg protein while lowering the levels of total fat and low density lipoprotein (LDL). It may also boost the amount of carcass and the antioxidant activity in the female offspring.

### **Curcumin as antioxidant agent**

The turmeric extract curcumin has advantageous effects on the nutrition of chickens. Broiler chicken growth, antioxidant and antibacterial activity have all increased in response to curcumin and turmerones derived from lipophilic turmeric (Johannah et al., 2018). According to Kim et al. (2013), dietary curcumin can make Ross broiler chickens more coccidiosis-resistant when challenged with *Eimeria* by increasing body weight, decreasing faecal oocysts, gut lesions, and body immunity. However, Galli et al. (2020) showed that curcumin (30 and 50 mg/kg) alone can lower lipid peroxidation and raise antioxidant levels in laying hen eggs, or that curcumin

combined with microencapsulated phytogenics (carvacrol, thymol, and cinnamaldehyde) can enhance growth, flesh quality, and unsaturated fatty acids in broiler chicks.

### **Curcumin on aflatoxin amelioration**

Aflatoxin B1 (1 mg/kg) toxicity in male Ross broiler chicks was reduced by curcuminoids (222 mg/kg) in diets (Gowda et al., 2009). Feeding slow growing chickens curcuminoids (60 mg/kg) and tuna oil may result in a greater breast fillet and a reduction in the auto-oxidation of the thigh meat (Hang et al., 2017). According to Rajput et al. (2014), supplementing with 200 mg/kg of curcumin can promote growth, fat metabolism, and intestinal integrity, while supplementing Arbor Acres broiler chickens with 150 mg/kg of curcumin and 150 mg/kg of lutein can improve the meat's freshness and antioxidant capacity. In broiler and laying hens, dietary curcumin supplementation can reduce AFB1 toxicity and increase resistance to heat stress in terms of a variety of characteristics, including growth enhancement, inhibition of hepatotoxicity, enhancement of antioxidant biomarkers, blood chemistry, and immune-related gene expressions (Salah et al., 2019; Nawab et al., 2019). Ruan et al. (2019) hypothesised that supplementing ducklings with curcumin (200 to 800 mg/kg) would improve their development, serum GSH, jujunal mucosa, and villus surface while lowering MDA, interleukin-1, tumour necrosis factor, and gene expressions associated to ochratoxin A.

### **Curcumin on meat stability**

Additionally, broiler chicken meat quality and muscle oxidant stability might be improved by dietary curcumin alone (50 and 100 mg/kg) as well as by activating enzymes associated to glutathione (GSH) and detoxifying Nrf2-mediated phase II detoxifying enzyme systems (Zhang et al., 2018). According to Xie et al. (2018), curcumin plays a significant impact in reducing abdominal fat deposition by lowering blood and liver lipid concentrations as well as the expression of lipogenic genes. In the case of Japanese quail, Sahin et al. (2012) reported that high ambient temperature (34°C) results in oxidative stress in quail; however, dietary curcumin supplementation (200 or 400 mg/kg) could alleviate the issue by increasing body weight, feed intake, and lowering

serum malondialdehyde (MDA) and heat shock protein 70 (HSP70) levels as well as modulating the Nrf2/HO-1 pathway in quail.

### Nano-formulations of curcumin

The use of nanocurcumin or curcumin nanoparticles in animal nutrition is a relatively new development. Rahmani et al. (2018) reported on the nutrition of poultry and found that male broiler chicks (Ross 308) had low weight gain, high feed conversion ratio, and increased blood partial pressure of carbon dioxide (pCO<sub>2</sub>) and hematocrit at cold temperatures (13–15°C). However, when the chicks were fed feed with curcumin or nanocurcumin, the body weight and villus surface in intestine were increased but MDA and caecal *Escherichia coli* decreased in broiler chicken at cold stressed condition.

### Conclusion

The dietary curcumin plays an important role in various biological functions such as anti-microbial, anti-inflammatory, anti-oxidant, immune-stimulant, etc. Hence, the incorporation of turmeric, turmeric extract or curcumin to the diets of broiler chickens could augment the production performance and a viable alternate to in-feed antibiotic growth promoter.

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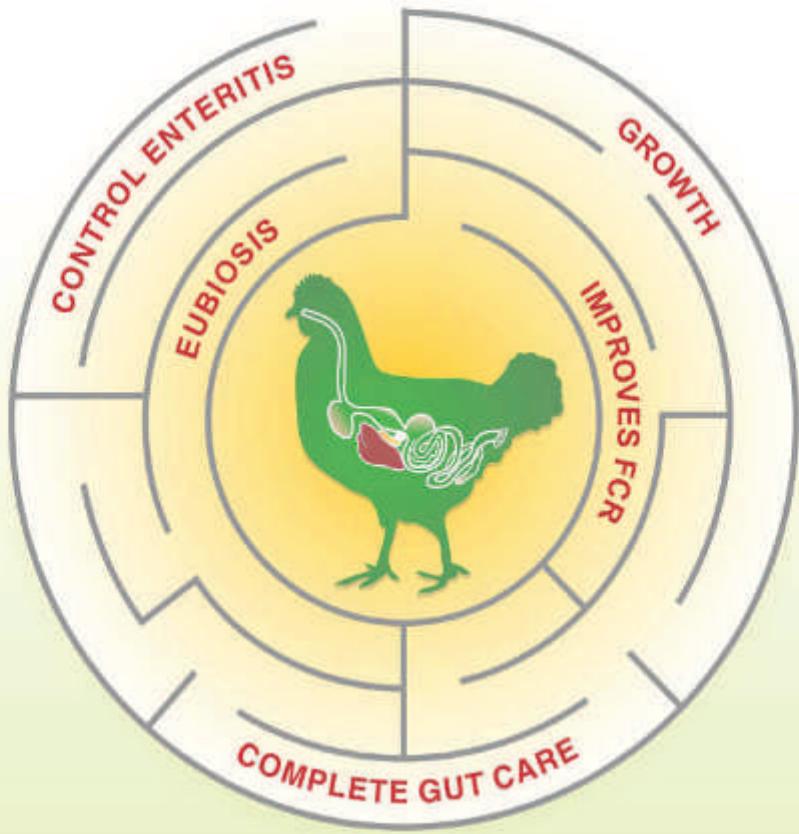
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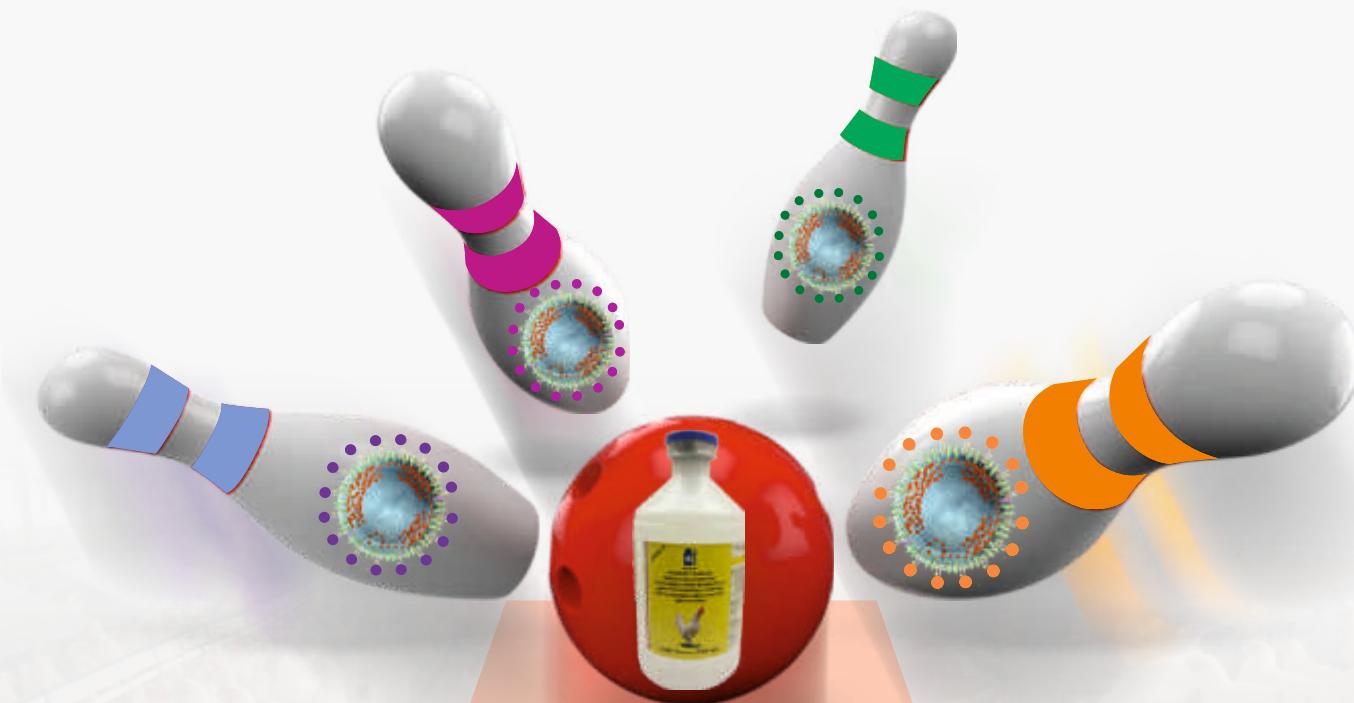
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