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VARUNA
BIO TECHNOLOGY

Transforming industries through enzymatic innovation

VARUNA
BIO TECHNOLOGY

For Poultry & Animal Feed Industry

- Phosfyt 50G
- Phosfyt 10KL
- BPzyme Plus
- Encaf+
- Elyte VET
- Yakran VET
- Hepabex VET
- β-Glucanase Enzyme
- Cellulase Enzyme
- Mannanase
- Pectinase Enzyme
- Xylanase Enzyme

Phosfyt 50G

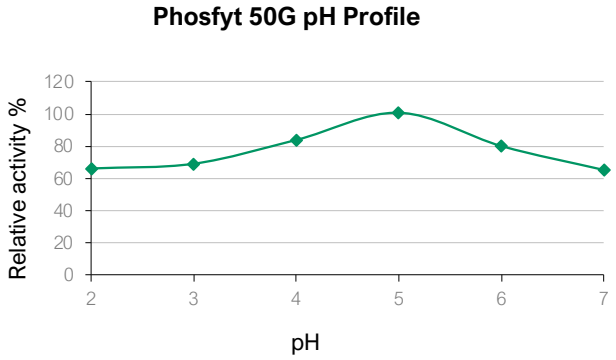
Advanced Fungal Phytase for Poultry

Phosfyt 50G Research team of Team Varuna has developed superior acting and stable phytase from a specially induced microbial strain (Non-GMO). It also contains other useful relevant activities for hydrolysis of cellulose, beta glucans and xylans which make the preparation very efficient in releasing of bound organic phosphorus in the plant materials used in feed and also extracting higher energy from the same feed ingredient.

Benefits

Phosfyt 50G is active at pH levels common in the upper digestive tract, where phytate phosphorus digestion is greatest. Compared to other phytases, Phosfyt 50G has much higher activity in this pH range.

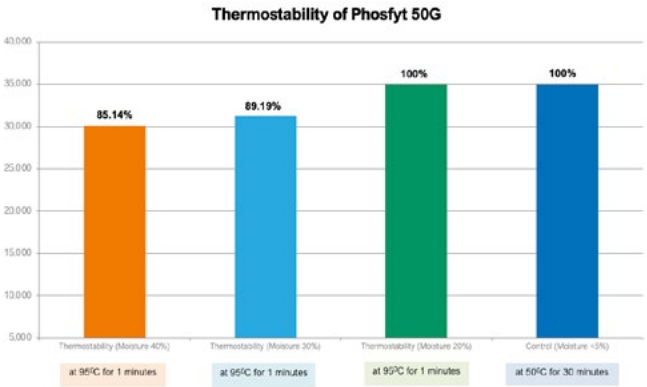
Properties



Suitable Thermostability

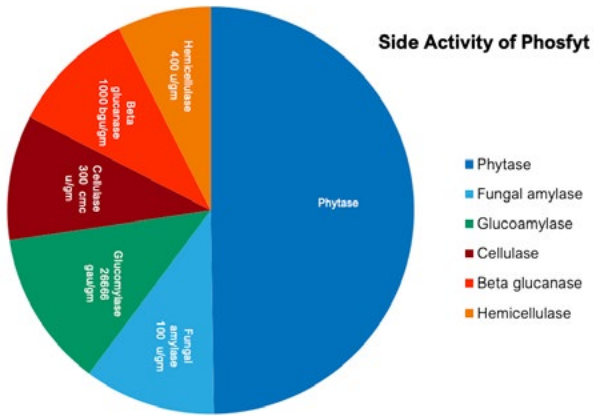
Phosfyt 50G is has been developed with relevant thermostability. Phosfyt 50G has been studied with heat treatment at 95°C for 1 minute with 20, 30 and 40% moisture. The study data shows excellent relevant thermostability.

Data graph is given below. This study has been carried out from 3 batches and tabulated based on average.



Side Activity

Enzymatic activity profile of Phosfyt 50G



Application

Phosfyt 50G is recommended to be used in feed for monogastric animals fed on diets containing plant material. The dosing rate should be suitably fixed after trials. Recommended dose is 500 FTU to 1000 FTU per Kg feed.

Availability

Phosfyt 50G is available in Granular, powder and liquid form having Phytase activity >5000 FYT u/gm at 37°C and pH 5.0

Storage

At room temperature Phosfyt 50G maintains its declared activity for at least 12 months. In liquid form stability is up to 6 months if stored as recommended. It should be stored under cool and dry condition (<25°C).

Packing

Phosfyt 50G is available in standard 20 kgs/ 50 Kgs HDPE drums or can be customized as per the requirement. Liquid form is available in 35 Lits HDPE cans.

Phosfyt 10KL

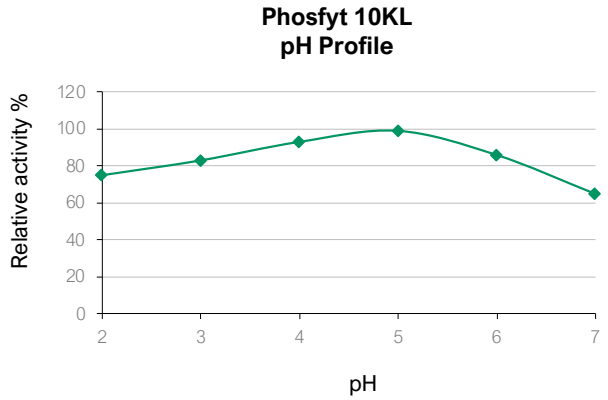
Stabilised Liquid Phytase for Poultry

Phosfyt 10KL a research team of Team Varuna has developed superior acting and stable phytase from a specially induced microbial strain (Non-GMO). It also contains other useful activities for hydrolysis of cellulose, beta glucans and xylans which make the preparation very efficient in releasing of bound organic phosphorus in the plant materials used in feed and also extracting higher energy from the same feed ingredient.

Benefits

Phosfyt 10KL is active at pH levels common in the upper digestive tract, where phytate phosphorus digestion is greatest. Compared to other phytases, Phosfyt 10KL has much higher activity in this pH range.

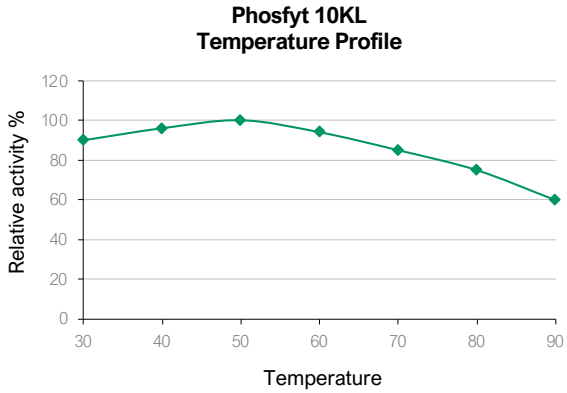
Properties



Phosfyt 10KL is suitable for dosing through drinking water to ensure measured dosing of Phytase to take care of Phosphorus deficiency.

There is insignificant activity loss in Phosfyt 10KL if kept at 80°C for about 0.5 minute which is the normal thermal exposure during palletization process.

However, a rigorous thermal stability test has been carried out by keeping Phosfyt 10 KL for 60 minutes in an incubator maintained at the test temperature. The data generated has been presented below showing a good resistance at elevated temperatures.



Application

Phosfyt 10KL is recommended to be used in feed for monogastric animals fed on diets containing plant material. The dosing rate should be suitably fixed after trials. Recommended dose is 500 FTU to 1000 FTU per Kg feed. In acute deficiencies due to Phosphorus the recommended dose is 15-30ml per 100 birds through drinking water or as per advice of veterinarian.

Availability

Phosfyt 10KL is available in buffered liquid form having Phytase activity >10000 FYT u/gm at 37°C and pH5.0

Storage

If stored below 25°C in a dry place Phosfyt 10KL maintains its declared activity for at least 12 months

Packing

Phosfyt 10KL is available in standard 5 Lit / 50 Lit HDPE drums or can be customized as per the requirement.

BPzyme Plus

The balanced enzyme mix for Poultry Industry Fortified with Probiotics

Why enzymes are needed

Cereals such as wheat etc, for example, contain long, complex carbohydrate molecules known as non-starch polysaccharides (NSPs), for which animals such as pigs and poultry do not produce the necessary digestive enzymes. The major NSPs in wheat are called arabinoxylans, and those in barley are beta glucans. It is now well recognized that these components are anti-nutritional in behaviour.

Not only do they increase the viscosity of digesta, which means that the animal's own enzymes have a harder time locking onto nutrients and the absorption of these nutrients is reduced, but they also encapsulate nutrients, thus making them unavailable to the animal. The addition of NSP enzymes to animal diets allows the breakdown of these anti-nutritional factors and thus faster and more complete digestion of the feed, leading to improved nutritive value.

Feed enzymes are also able to upgrade sources of vegetable protein (such as soybeans, rapeseed, sunflower seed and legumes) in both pig and poultry diets.

Benefits

- Reduction of feed costs by providing flexibility in feed formulation
- Improvement of feed efficiency in pigs and poultry
- Improvement of uniformity
- Reduction of sticky droppings (lower risk of dirty eggs, hock burns and breast blisters) and improvement of litter quality in poultry
- An increase in the dietary content of metabolizable energy.

Apart from contributing to improving nutritive value, feed enzymes can also have a positive impact on the environment by allowing better use of natural resources and reducing pollution by nutrients.

In areas with intensive livestock production, the phosphorus output is often very high. This can lead to environmental problems such as eutrophication. This is the process by which a body of water becomes, either naturally or by pollution, rich in dissolved nutrients (such as phosphates), causing algae blooms and deficiencies in oxygen.

Most (50-80%) of the phosphorus contained in feedstuffs of plant origin exists as the storage form phytate, or phytic acid, and is indigestible for non-ruminant animals such as poultry and pigs. They cannot digest the phosphorus contained within these complex phytate structures, since they lack the enzyme to break down the phytate and free the phosphorus. The phytase enzyme is essential for the release of phytate-bound phosphorus. Therefore, sufficient phytase needs to be added to the feed.

Phytate also forms complexes with proteins, digestive enzymes and minerals, and as such is considered to be an anti-nutritional factor. Phytase frees the phosphorus contained in cereals and oilseeds, and by breaking down the phytate structure also achieves the release of other minerals such as calcium and magnesium, as well as proteins and amino acids, which have become bound to the phytate.

Thus, by releasing bound phosphorus in feed ingredients of vegetable origin, phytase makes more phosphorus available for bone growth, and reduces the amount excreted into the environment. Use of the enzyme also has the added benefit of helping to conserve natural resources by eliminating the need to supplement feeds with sources of digestible inorganic phosphorus.

For balancing the blend of enzymes, the composition of feeds need to be studied carefully. In Indian context, it has been found that addition of amylase, lipase, pectinase and protease is also beneficial for optimizing the feed metabolism.

Bpzyme Plus is a special balanced blend of enzymes specially formulated to target the feeds containing more of oils and fats in addition to a mix of cereals, oilseeds etc which has been the current trend in the feed manufacturing for use in poultry. BPzyme Plus has been fortified with specially produced Lactobacillus sporogens which is a useful probiotic. Probiotics have been primarily used to establish normal intestinal flora to prevent or minimize the disturbances caused by enteric pathogens and secondarily to serve the function of antibiotic feed additives in diet of birds.

The poultry feed is a complex mixture of cellulose, plant fiber, grains, fatty matter, oil seeds and oil-cakes. Poultry does not produce suitable enzymes required for the digestion of these macromolecules:

BPzyme Plus

The balanced enzyme mix for Poultry Industry Fortified with Probiotics

- Cellulase is required for the digestion of cellulosic plant material.
- Xylanase helps in digestion of plant fibers.
- ß- Glucanase is essential for the complete digestion of cell wall.
- Lipase is needed for efficient metabolism of oils and fats, which is a current trend in Indian feeds.
- Phytase is required to make phosphorus available to the body.
- Protease helps in getting optimum amino acids from feed.
- Amylase is required to hydrolyze starchy material in the feed.
- Pectinase helps in decomposition of dried plant material and fibers.
- Lactobacilli acidophilus are probiotics and improve feed efficiency.
- Bacillus subtilis: It is a probiotic of choice for prevention & control of Clostridium perfringens causing necrotic enteritis, an enterotoxemic disease which leads to necrotic lesions in gut wall. This can replace non-antibiotic growth promoters and can help to reduce the aflatoxin concentration in feed. Improves feed efficiency, less abdominal fat, reduced triglycerol concentrations in liver, serum & carcass & reduced cholesterol concentrations in liver & carcass. (British Journal of Nutrition (1999, 14, 523-529)

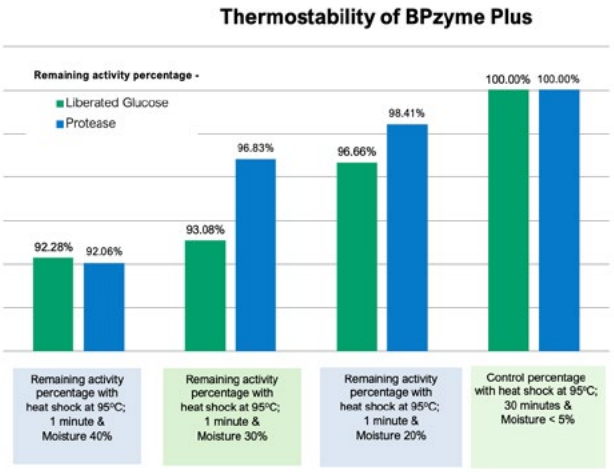
Functions

BPzyme Plus is a unique formulation designed to optimize feed utilization in poultry. BPzyme Plus is suitable for feeds formulated with Wheat, Maize and oil cakes. The product is a cocktail enzyme comprising of:

Enzyme	Acts On	Economics
Cellulase	Cellulose fiber	Cost effective feed with better nutrition
Amylase	High starch	Lower production cost and higher nutritive value
Pectinase	Pectins	Better options to use plant material and better carcass grades
Phytase	Phytate, Phytic acid proteins	Improved nutrition, clean eggs, environment friendly
Protease	Proteins	Better growth and higher hatchability
Lipase	Oils/Fats/Lipids	Better immunity
Xylanase	NSPs	Unlocking nutrients, anti-bacterial
ß-Glucanase	Beta glucans & NSPs	Improves crop options and feed optimization
Lactobacillus	Works as probiotic	Improves bird health, improves feed efficiency, reduces foul smell from bird droppings
Bacillus subtilis	Works as gut probiotic	It is a probiotic of choice for prevention & control of Clostridium perfringens causing necrotic enteritis, an enterotoxemic disease which leads to necrotic lesions in gut wall.

Effect of BPzyme Plus on feed (poultry)

Tests	Feed nutritional Profile of feed without BPZYME Plus	Feed nutritional Profile of feed with BPZYME Plus	% RISE
AMINO ACID	4.055 g/100 g	6.09 g/100 g	150.18 %
GLUCOSE	0.94 g/100 g	4.96 g/100 g	527.66 %
PHOSPHORUS as P	317 .2 mg/100 g	380.36 mg/100 g	119.91 %



Usage Recommendation

Normal feed, Pelleted feed, Crumbs & Mash : 500g/ton
Before pelleting : 1kg/ton

Please consult your Nutritionist or Veterinarian for specific dosage, since dosage of any multi enzyme combination depends on stage and age of birds, composition of feed, expected effect on specific feed components and form of feed.

Storage

It should be stored under cool & dry conditions below 27°C to maintain activity for a longer period.

Packing

BPzyme Plus is available in free flowing white powder form packed in standard 20 kg HDPE sacks.

Safety

Technical information and MSDS is available on request.

Encaf+

Fortified enzyme compound for cattle feed supplementation

Animal feed is predominantly composed of plant material, mainly cereals and vegetable proteins. Many such feed ingredients are not fully digested by livestock. However, by adding enzymes to feed, the digestibility of the components can be enhanced. Enzymes are now a well-proven and successful tool that allows feed producers to extend the range of raw materials used in feed, and also to improve the efficiency of existing formulations. Enzymes are added to the feed either directly or as a premix together with vitamins, minerals and other feed additives.

A wide range of enzyme products for animal feed are now available to break open complex substances such as phytate can be hydrolyzed by phytase, glucan can be decomposed by beta glucanase, starch can be hydrolyzed by amylase, protein can be broken by protease, pectin-like polysaccharides by pectinase, xylan by xylanase. Hemicellulose and cellulose can also be hydrolyzed by cellulase and hemicellulase. As revealed by the many feed trials carried out to date, the main benefits of supplementing feed with enzymes are faster growth of the animal, better feed utilization (feed conversion ratio), more uniform production, and better health status.

Exogenous enzymes alter feed utilization in ruminants either through their effects on the feed prior to consumption or through their enhancement of digestion in rumen and/or in the post ruminal digestive tract. Pre-consumptive effects of exogenous enzymes are due to release of soluble carbohydrates or due to removal of structural barriers that limits the microbial digestion of feed in the rumen. Within the rumen exogenous enzymes act directly on the feed or indirectly stimulate digestive activity through synergistic effects on ruminal microorganisms. Exogenous enzymes remain active in the lower digestive tract contributing to the post ruminal digestion of the fiber or they indirectly improve nutrient absorption in the lower tract by reducing viscosity of the digestive ingesta. They also supplement enzyme activity in the feces thereby contributing by accelerating decomposition of waste. Ultimately the goal of enzyme supplementation is to improve the efficiency of feed utilization in ruminants and reduce waste production.

Encaf+ is a rational combination of enzymes fortified with valuable herbal extracts designed and developed to enhance fiber digestibility & to optimize utilization of all essential nutrients from feed to boost up milk yield with improved fat profile.

When in combination with enzymes, especially fiber degrading enzymes, the digestibility of the feed improves and the animal is able to absorb the nutrients in the feed, which is the primary source of providing calcium and phosphorus in lactating animals. It is important to note that in milking (Lactating) animals, while they are producing milk, the depletion of calcium is very high and so becomes the loss of phosphorus. Now, with Encaf+, it has been observed that with the administration of 5 gms per day per animal as per recommended directions, immediately after 3 to 6 days the milk froth (Jaag) will increase and the actual liquid milk will start increasing after 5 to 8 days, and will continue to increase to a substantial level, based on the pedigree and genetic (depends on the breed) constitution of the animal.

Encaf+ has performed in even desi breeds in India which are low milk producing animals compared to cross breed animals. It is important to deworm the animal before the start of Encaf+ with some effective broad spectrum deworming agent.

Advantages

The advantages of adding enzymes are as follows

- Degrades cell walls of endosperm in feed grains and vegetable proteins in the feed.
- Helps in hydrolysis of protein to release essential and higher content of digestible amino acids.
- Improves nutritive and dietary values of the feed.
- Counteracts enzyme deficiencies in animals.
- Improvement in feed conversion ratio.
- Increases the weight of the cattle feedlot.
- Improves in milk yields and milk fat.

Ingredients

Encaf+ has been formulated with sufficient quantities of enzymes such as Protease, ß-Glucanase, α-Amylase, Cellulase, Xylanase,

Pectinase & Lipase and supplemented with herbal extract of wild crafted Shatavari for best results. The role of each ingredient is given as below:

Protease is an enzyme that acts on proteins in the feed to convert them to peptides and free amino acids which provide better food value from pressed oil cakes.

ß-Glucanase: ß-glucanase enzyme is used to quickly break down high-viscosity beta-glucans into low viscosity oligosaccharides and making them useful for cattle. ß-glucanase helps break down beta-linked glucose polymers often associated with grains, such as wheat, barley, and other products including soya bean meal.

Encaf+

Fortified enzyme compound for cattle feed supplementation

α-Amylase: α-Amylase acts on starch (amylose and amylopectin). It split starch into dextrins and sugars by cleaving the alpha -1, 4 glycosidic linkages in the interior of the starch chain. This is how it digests starch into small segments of soluble and easily digestible sugars.

Cellulase which also has hemicellulasic activity is important fiber-degrading enzymes that can have significant impact on improving feed utilization and animal performance, Cellulase acts on cellulose molecules by hydrolyzing the beta-1, 4 glycosidic linkages. It breaks down the complex molecules of cellulose into more digestible compounds of single or multiple sugars.

Xylanase digests high molecular weight arabinoxylans in animal feed. Also breaks down insoluble cell wall material of cereals and liberates extra nutrients making it freely available to the animals.

Lipase digests vegetable fats and oils available from plant cells or external oils added to the feed to release easily digestible free fatty acids and glycerol.

Pectinase digests pectin and similar carbohydrates of plant origin to yield quick digestible sugars.

Asparagus racemosus (Shatavari) Extract: Shatavari extract has been well studied by many researchers for its beneficial effects in cattle feed supplementation. It provides many nutritional elements and resistance to diseases. In one of the studies at Livestock Development Farming Thiruvananthapuram, it was observed that use of wet and fresh tuber of Shatavari has provided increase in milk yield by 30 per cent while the dried powder gave out a 17 to 18 per cent hike.

Another study on Asparagus racemosus: Immunoadjuvant potential of Asparagus racemosus aqueous extract in experimental system Manish Gautam, a, Sham Diwanay, b, Sunil Gairola, Yojana Shinde, c, Prahlad Patki, c and Bhushan Patwardhan, , (a) an Interdisciplinary School of Health Sciences, University of Pune, Pune, Maharashtra 411007, India; (b) Department of Microbiology, Abasaheb Garware College, Pune, Maharashtra, India; (c) Serum Institute of India Research Foundation, 212/2, Hadapsar, Pune, Maharashtra 411042, India.

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Abstract

The immunoadjuvant potential of Asparagus racemosus (Wild.) Family (Liliaceae) aqueous root extract was evaluated in experimental animals immunized with diphtheria, tetanus, pertussis (DTP) vaccine. Immune stimulation was evaluated using serological and hematological parameters. Oral administration of test material at 100 mg/kg per day dose for 15 days resulted significant increase (P=0.0052) in antibody titers to Bordtella pertussis as compared to untreated (control) animals. Immunized animals (treated and untreated) were challenged with B. pertussis 18323 strain and the animals were observed for 14 days. Results indicate that the treated animals did show significant increase in antibody titers as compared to untreated animals after challenge (P=0.002). Immune protection against intracerebral challenge of live B. pertussis cells was evaluated based on degree of sickness, paralysis and subsequent death. Reduced mortality accompanied with overall improved health status was observed in treated animals after intra-cerebral challenge of B. pertussis indicating development of protective immune response. Present study indicates applications of test material as potential immunoadjuvant that also offers direct therapeutic benefits resulting in less morbidity and mortality.

Journal of Ethnopharmacology
Volume 91, Issues 2-3, April 2004, Pages 251-255

Dose Rate and Mixing

The recommended dose rate of is 750gmto 1 kg per ton of feed. For good results of enzyme addition in the feed it is better to make a premix of the product with a small portion of the feed and then this premix is mixed manually with the whole lot using a geometric mixing method for proper distribution of to the entire feed.

Availability

Encaf+ is available in powder and granules form. Coated granules are more suited for palletization. However powders are provided with overages of active enzymes are added to maintain the desired activity after palletization.

Stability

Encaf+ is a very stable product in powder and granule form retaining over 95 % of activity for at least 12-15 months.

Packing

is available in standard 25 Kgs HDPE sacks. However the packing can be customize to the clients requirements.

Technical Services

For further inquires regarding specific application, information can be obtained from our technical services department.

Elyte VET

The Powerful Caretaker - Overcome heat stress with Orange Flavour

Electrolytes are very much required in the whole metabolism of the body. An optimum Concentration of electrolyte is necessary to maintain the required osmotic pressure through which the acid base equilibrium is achieved.

Electrolyte is advocated

- In summer to avoid dehydration and heat stroke
- In chicks, immediately after arrival at the farm
- In diseases like Gumboro (IBD) Salmonellosis, E.Coli, Coccidiosis, Nephritis.
- Nephrosis, Perosis, Diarrhoea, Dysentery and Blood dyscrasias due to toxins as supportive therapy
- To improve immunity and to relieve various stress conditions

Recommended Usage

- Poultry: 1-2 gm per liter of water or 500 gm per ton of feed depending upon the conditions prevailing at the farm
- Calves/Sheep/Goat/Dog: 50 gm daily for 5 days
- Cows/Buffaloes Horses: 300 gm daily for 5 days
- Or as advised by a veterinarian

Composition-Each 100 gm contains

Sodium Bicarbonate	18
Magnesium Sulphate	1.4
Potassium Chloride	10
Calcium Lactate	1.6
Sodium Chlorides	5
Lactobacillus acidophilus	0.1
Sodium Citrate	7.5
Sodium Di-hydrogen Phosphate	2
Dextrose Anhydrous	q.s.

Presentation

1 kg in Aluminum Foil Pack

Use

- Animal Poultry Feed Supplement
- For Veterinary Use Only
- Not For Human Use
- Not For Medicinal Use
- Store in a Cool Dry Place

Yakran VET

Poly-herbal formulation providing lipotropic, liver stimulant, diuretic and anti-diarrheal activity

Poultry Bird Performance Enhancer

Liver health is the key to achieving high productivity in Poultry. Yakran Vet is a synergistic combination of excellent quality medicinal herbs which stimulate and optimize liver functions, protect the liver and kidney from different toxins, bacteria and viruses. Along with this, it improves absorption, assimilation and metabolism of nutrients.

For all of its simplicity of appearance, the liver is a very complicated and hard-working organ. It is known to perform well over 500 different tasks, most of which are necessary to life and could not be done elsewhere in the body. The production of the essential protein 'albumin, the storage of fat-soluble vitamins such as A, D, E, and K, the manufacture of some digestive enzymes, the detoxification of wastes and poisons, the production of blood clotting factors, and the storage of energy are just some of these hepatic functions.

- Production of bile, which helps carry away waste & break down of fats in small intestine during digestion.
- Production of cholesterol & certain special protein for blood plasma
- Conversion of excess glucose into glycogen for storage and conversion to glucose for energy
- Regulation of blood levels of amino acids & processing of hemoglobin for use of iron content.
- Conversion of poisonous ammonia to urea which is a metabolized end product excreted through urine.
- Detoxification of the blood by removing drug & feed toxins and other poisonous substances & to regulate blood clotting.
- Fighting infections by producing immune factors & removing bacteria from the blood stream.

Why Yakran?

- The product contains 100% medicinally active herbs
- Contains renal tonic activity
- It ensures regeneration of damaged liver cells to bring the liver back to optimum functioning level.

Yakran ensures regular availability of bile for optimum absorption and utilization of fats and fat soluble vitamins e.g. Vitamin A, D, E & Ketc. Completely natural and free from pathogenic microflora and toxic chemicals

Yakran Vet helps to Prevent

FLS, Haemochromatosis, Autoimmune liver disorders, Carcinogenic growth, Gout, Hepatomegaly, Spleenomegaly, Ascites, Diarrhea, Renal dysfunction, Viral hepatitis, etc

Yakran Vet consists of Fumeria indica, Andrographis paniculata, Boerhavia diffusa, Tephrosia purpurea, Phyllanthus niruri, Glycyrrhizia glabra, Berberis aristata, Tinospora Cordifolia, Lpomoea turpethum, Tecomella undulata, Eclipta alba, Embelica offcinalis

Benefits

Improves key liver functions

Promotes growth in broilers, layers, chicks and growers

Improves egg production, egg quality and hatchability

Protects and corrects the damaging effects of alfatoxins

Protects liver against feed contaminants, antibiotics, anti parasitic and metabolites of chemical drugs known to damage liver cells

Improves FCR, meat yield and livability

Hepabex VET

A potent hepatic protector

A unique combination of herbs with lipotropic, liver stimulant, diuretic and anti-diarrheal activity.

The liver regulates most chemical levels in the blood and excretes bile, which helps carry away waste products from the liver. The liver processes the blood leaving from stomach and Intestines and breaks down the nutrients and drugs into forms that are easier to use for the rest of the body. Liver removes toxins from the body & processes food nutrients to regulate body metabolism. More than 500 vital functions have been identified with the liver & few of well-known are:

- Bile production, which helps carry away waste & break down fats in small intestine during digestion.
- Production of cholesterol & certain special protein for blood plasma
- Conversion of excess glucose into glycogen for storage and conversion to glucose for energy
- Regulation of blood levels of amino acids & processing of hemoglobin for use of iron content.
- Conversion of poisonous ammonia to urea which is a metabolized end product excreted through urine.
- Clearing the blood of drugs and other poisonous substances & to regulate blood clotting.
- Resisting infections by producing immune factors & removing bacteria from the blood stream.

The synergistic blend of herbs in Hepabex Vet helps to prevent, control and treat

FLS, Haemochromatosis, Autoimmune liver disorders, Carcinogenic growth, Gout, Hepatomegaly, Splenomegaly, Ascites, Diarrhea, Renal dysfunction, Viral hepatitis, etc.

Hepabex Vet consists of Andrographis paniculata, Boerhavia diffusa, Picrorrhiza kurroa, Tephrosia purpurea, Phyllanthus niruri, Glycyrrhizia glabra, Solanum nigrum, Solanum rubrum, Solanum incertum, Berberis aristata, Tinospora Cordifolia, Operculina turpethum, tecomella undulate.

References

Titre du document/Document title Review article: glycyrrhizin as a potential treatment for chronic hepatitis C Auteur(s)/Author(s) AN RUSSUM T. G. J.; VULTO A. G.; DE MAN R. A.; BROUWER J. T.; SCHALM S. W. Affiliation(s) du ou des auteurs/Author(s) Aliation(s): “Department of Hepato-gastro-enterology, Erasmus University Hospital, Rotterdam, ETATS-UNIS Department of Pharmacy, Erasmus University Hospital, Rotterdam, PAYS-BAS

Recommended Usage Levels

Poultry: 20 ml to 40 ml per 100 birds per day for 5 to 7 days.
Small Animals: 25 ml to 50 ml per animal per day.
Large Animals: 80 ml to 100 ml per animal per day.

Presentation

- HDPE Bottle of 1000 ml, HDPE Jar of 5000 ml or as recommended by a veterinarian
- Hepabex Vet is a proprietary ayurvedic product. Recommended for Veterinary Use Only

β-Glucanase Enzyme

Feed grade. Efficient Hydrolysis of β-Glucans for enhanced production

β-Glucanases are a class of enzymes that hydrolyze β-1,3 and β-1,4 linkages in β-glucans—polysaccharides found in cereals, fungi, and cell walls of yeast and plants. These enzymes are essential in various industries for improving viscosity control, nutrient availability, and processing efficiency.

Applications

- Breakdown of β-glucans in barley, oats, and wheat-based feeds
- Reduction of intestinal viscosity in monogastric animals

Properties

Form	:	Liquid / Powder
Activity	:	≥8,000 BgU/g (customizable based on application)
Source	:	Aspergillus spp.
Optimal pH Range	:	4.5 – 6.5
Optimal Temperature	:	45°C – 60°C
Stability	:	Stable in feed, brewing, and pulp process conditions
Compatibility	:	Compatible with cellulase, xylanase, amylase

Packing

Available in 50 Kg drums.

Storage

- Store in a cool, dry place below 25°C
- Shelf Life: 12 months (in sealed condition)

Benefits

Improved feed conversion ratio (FCR)

Enhanced nutrient absorption and growth performance

Reduced intestinal viscosity and better gut health

Lower incidence of sticky droppings and improved litter quality

Cellulase Enzyme

Feed grade cellulase. Eco-efficient Biomass conversion for every industry.

Cellulases are enzymes that hydrolyze β-1,4-glycosidic bonds in cellulose to release glucose and cello oligosaccharide. Cellulases are a group of hydrolytic enzymes that break down cellulose, the major structural component of plant cell walls, into simpler sugars like glucose.

Applications

- Enhancing digestibility of plant-based feed
- Breaking down cellulose in agro-based raw materials

Properties

Form	:	Liquid/Powder (as per need)
Enzyme Activity	:	≥30,000 U/g (customizable)
Optimal pH Range	:	4.5 – 6.0
Optimal Temperature	:	45°C – 60°C
Stability	:	Stable under feed & textile process conditions
Compatibility	:	Compatible with protease, xylanase, amylase
Source organism	:	Trichoderma reesei

Packing

Available in 50 Kg drums.

Storage

- Cool, dry place below 25°C
- Shelf Life: 12 months (sealed condition)

Benefits

Improved
feed conversion ratio (FCR)

Increased
nutrient absorption and animal performance

Synergistic
performance in multi-enzyme formulations

Reduced
fecal waste and improved gut health

Mannanase

Feed grade. Eco-efficient Mannan breakdown for feed and industrial excellence.

Mannanase is a hydrolytic enzyme that specifically breaks down mannans, a group of complex polysaccharides found abundantly in plant cell walls, especially in legumes, palm kernel, guar gum, and copra meal. Classified primarily as endo-β-1,4-mannanase, it cleaves the internal β-1,4-mannosidic linkages in the backbone of mannans, glucomannans, and galactomannans.

This enzyme plays a vital role in various industries by improving process efficiency, enhancing nutrient availability, and reducing anti-nutritional factors in feed and food matrices. Its use contributes to clean-label, sustainable processing solutions.

Application

Improves digestibility of feed by breaking down β-mannans (especially from soybean meal, guar meal, and palm kernel cake).

Properties

Appearance	:	Light brown liquid / off-white powder
Enzyme Activity	:	25000 U/g (customizable)
pH Range	:	4.5 – 7.5 (optimum ~6.0)
Temperature Range	:	30°C – 60°C (optimum ~50°C)
Solubility	:	Completely soluble in water (liquid)
Shelf Life	:	12 months at 25°C (sealed, dry state)

Packing

50 kg HDPE drum

Storage

- Store in a cool, dry place away from direct sunlight.
- Keep container tightly closed when not in use.
- Use personal protective equipment (PPE) during handling.

Regulatory & Quality

- Non-GMO production strain
- Compliant with ISO 9001, FSSAI, and GMP standards
- Halal and Kosher certification available (on request)
- Safety Data Sheet (SDS) available upon request

Benefits

Enhances
nutrient absorption

Reduces
feed viscosity and gut inflammation

Improves
animal growth performance and feed conversion ratio (FCR)

Reduces
anti-nutritional effects of mannans

Pectinase Enzyme

Feed grade. Efficient Pectin breakdown for animal feed.

Pectinases are a group of enzymes that catalyze the degradation of pectic substances, particularly pectin, a structural polysaccharide found in the middle lamella and primary cell walls of plants. Pectinases include polygalacturonase, pectin lyase, and pectin esterase, and are essential in industries requiring the clarification, extraction, and processing of plant-based materials.

Properties

Form	:	Liquid / Powder
Activity	;	≥10,000 PGU/g (customizable)
Source	:	Aspergillus sp.
Optimal pH Range	:	4.0 – 6.5
Optimal Temperature	:	40°C – 55°C
Stability	:	Stable under fruit, textile, and wine processing conditions
Compatibility	:	Compatible with cellulase, amylase, hemicellulase

Packing

Available in 50 Kg drums.

Storage

- Store in a cool, dry place below 25°C
- Shelf Life: 12 months (in sealed condition)

Benefits

Increases
digestibility of pectin-rich feed components like citrus pulp

Reduced
viscosity and improves nutrient absorption

Xylanase Enzyme

Feed grade. Eco-efficient Hemicellulose degradation for animal feed.

Xylanase is a class of hydrolytic enzymes that catalyze the degradation of xylan, a major hemicellulosic component of plant cell walls, into xylose and xylo-oligosaccharides. Xylanases enhance process efficiency and product quality in a wide range of industries by enabling better fiber modification, improved digestibility, and cleaner processing.

Application

- Breakdown of arabinoxylans in cereals and grains
- Enhancement of non-starch polysaccharide (NSP) digestibility

Properties

Form	:	Liquid / Powder
Activity	:	≥30,000 U/g (customizable)
Source	:	Aspergillus sp.
Optimal pH Range	:	5.0 – 7.0
Optimal Temperature	:	45°C – 60°C
Stability	:	Stable under baking, feed & pulp conditions
Compatibility	:	Compatible with cellulase, amylase, protease

Packing

Available in 50 Kg drums.

Storage

- Store in a cool, dry place below 25°C
- Shelf Life: 12 months (in sealed condition)

Benefits

Lower
usage of chlorine and chlorine dioxide

Enhanced
pulp brightness and quality

Redued
chemical consumption and environmental load

Improved
operational cost-efficiency


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