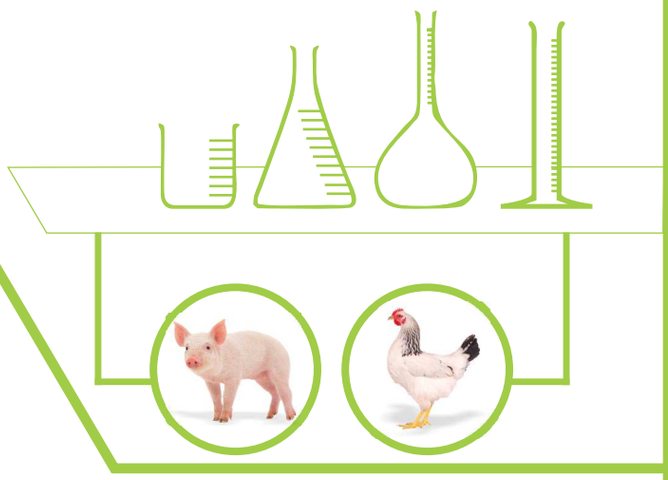
PhyXyme - Bacterial phytase enzyme

ADVANCED BIOTECHNOLOGIES

Trusted Friend of the Bio – World



Description:

PhyXyme is a new generation bacterial origin phytase product produced from Escherichia Coli through submerged liquid fermentation with high yield. It ensures excellent stability, high biological efficiency and better performance in resistance to adverse conditions. Addition of PhyXyme in feed can directly substitute inorganic phosphorous. PhyXyme products can be applied to different scale fo animal feed producers, poultry, swine and cattle farms with the characteristics of excellent cost performance, completed specifications and distinct effect

Why PhyXyme in feed ?

- Monogastric animals lack phytase degrading enzyme in their digestive tract so they are unable to utilize the phosphrous present in phytate.

- Phosphoric acid group is negatively charged, it can strongly chelate with cations such as Ca2+, Mg2+, Zn2+, Cu2+, Mn2+, Fe2+ and K+ to form insoluble salts thereby influencing the absorption and digestion of these mineral by animal and reducing their bio-availability

- The phosphoric acid group of phytate can also integrate with cation groups on protein, amino acids, starch and lipids in feedstuff to reduce their solubility therefore influencing the digestibility of thee nutrients by animals.

- Phosphoric acid can also integrate with protein in animal body such as amylase, pepsin, trypsin and acid phosphorylase to reduce their activity and influencing the nutrient utilization of whole diet.

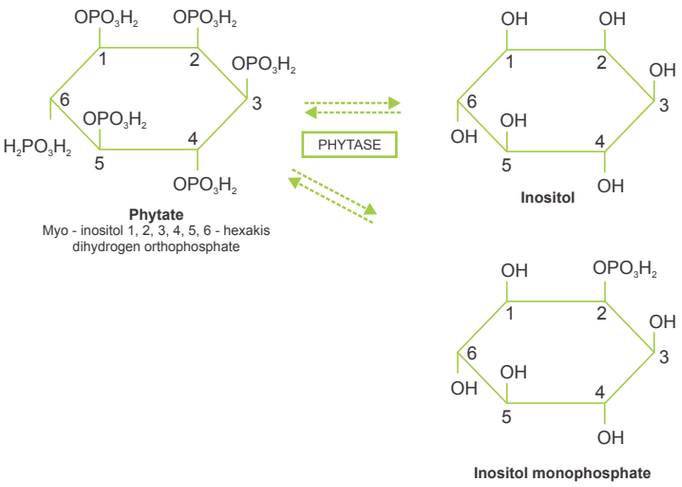
Mode of Action:

Phytase catalyses the reaction mentioned below.

(a) 3-phytase (EC 3.1.3.8) first attacks phytate at eh 3 position in a reaction written as :
myo - inositol hexakisphosphate + H 2 O = D - myo - inositol 1,2,4,5,6 - pentakisphosphate + orthophosphate

(b) 6-phytase (EC 3.1.3.26) first attacks phytate at the 6 position in a reaction written as :
myo - inositol hexakisphosphate + H 2 O = D - myo - inositol hexakisphosphate + H 2 O = D - myo - inositol 1,2,3,4,5 - pentakisphosphate + orthophosphate

There are conflicting reports as to the final reaction product of phytase acting on phytate. In theory the inositol pentakisphosphate can rebind to the enzyme releasing a further phosphate group and the inositol tetrakisphosphate. Further sequential reactions would ultimately release inositol. However, detailed studies on the phytase action (followed by NMR) indicate that the end product is more usually inositol monophosphate



Assay Principle:

Phytases are a group of enzymes that catalyze the stepwise removal of inorganic orthophosphate from phytic acid and improve the availability ofphosphorous and other nutritional components of the animal feed.

PhyXyme assay method is available on request

Specification

Color	White to greyish white
Moisture	Less than 10% Maximum
Form	Granular / Powder
Odor	Slight fermentative odor
Thermostability	Withstand pellatization temprature

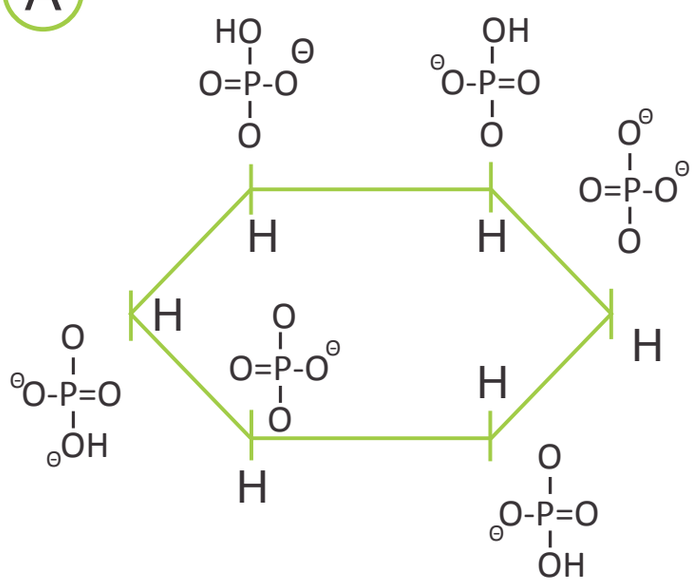
Advantages of PhyXyme:

1. Reduce the supplement of costly inorganic phosphorus in feeds thus reducing feed cost and increase the profitability of both feed companies and farms
2. Better feed utilization.
3. Reduce the excreted phosphorus through manure by 40-60%, thus reducing environmental pollution.

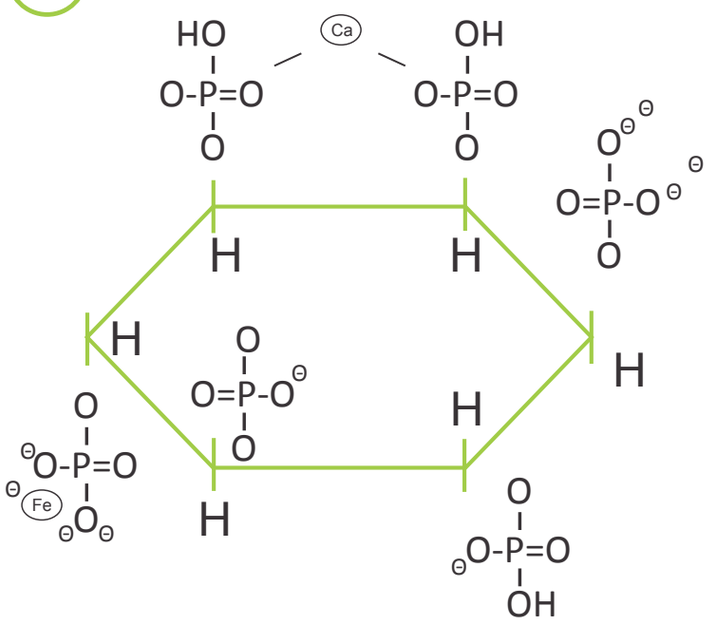
4. Increase the utilization efficiency of minerals, protein and other nutrients and improves the production performance of livestock/poultry, resulting in faster growth of animal.
5. Increase the space in feed formula to improve feed quality.
6. Reduces the risk of heavy metal poisoning and microbial pollution caused by (DCP) and other chemicals.
7. Reduce the dust pollution in feed processing by reducing the supplement of inorganic phosphorus.

Structure of Phytic Acid (A) and Phytic Acid Chelate (B)

A



B



Dosage: The actual dosage may depend on feed composition. General recommended dosages are:

PhyXyme 2500 : 150 - 200 g / ton of feed.
PhyXyme 5000 : 60 - 100 g / ton of feed.
PhyXyme 10000 : 30 - 60 g / ton of feed.

Precaution: PhyXyme may cause allergic manifestation. Persons handling this material should be protected against inhalation of its dust and contact with skin or eyes.

Shelf Life: 24 months from the date of manufacturing under specific condition.

Presentation: PhyXyme is available in 25Kg Paper bag.

Management Office: Advanced Biotechnologies 87/2, All Seasons Place, CRC Tower, 36th floor, Wireless Road, Lumpini, Pathumwan, Bangkok, Thailand 10330 Telephone :+66 2 625 3077 Fax Number: +66 2 625 3000

Administrative Office: 202D, Dosti Pinnacle, Road No. 22, Wagle MIDC, Thane, West 400 604, Maharashtra, India Tel: +91-22-25830632 / 33 Fax: +91-22-25830631, Email: info@adbioenz.com, Website: www.adbioenz.com Customer Care No. : +91-9320589281

ADVANCED BIOTECHNOLOGIES

Trusted Friend of the Bio – World