

PHYTOBAC

ACTIVITY

5000 FTU/gm

ADVANTAGES

- Optimum efficacy at pH range of 2.5-5
- Highly effective in adverse environment of endogenous protease
- Activity studies demonstrated optimum efficacy under standard pelleting conditions (Ref. available on request)
- Improves the availability of phosphorus upto 40%
- Improves the availability of other mono-and-divalent cations e.g Na, K, Ca, Mg, Zn
- Improves the availability of protein & carbohydrate
- Facilitates release of additional energy
- Improves apparent digestibility of amino acids
- Inclusion in layer diet increases egg production, egg weight & tibial ash content

MATRIX VALUE

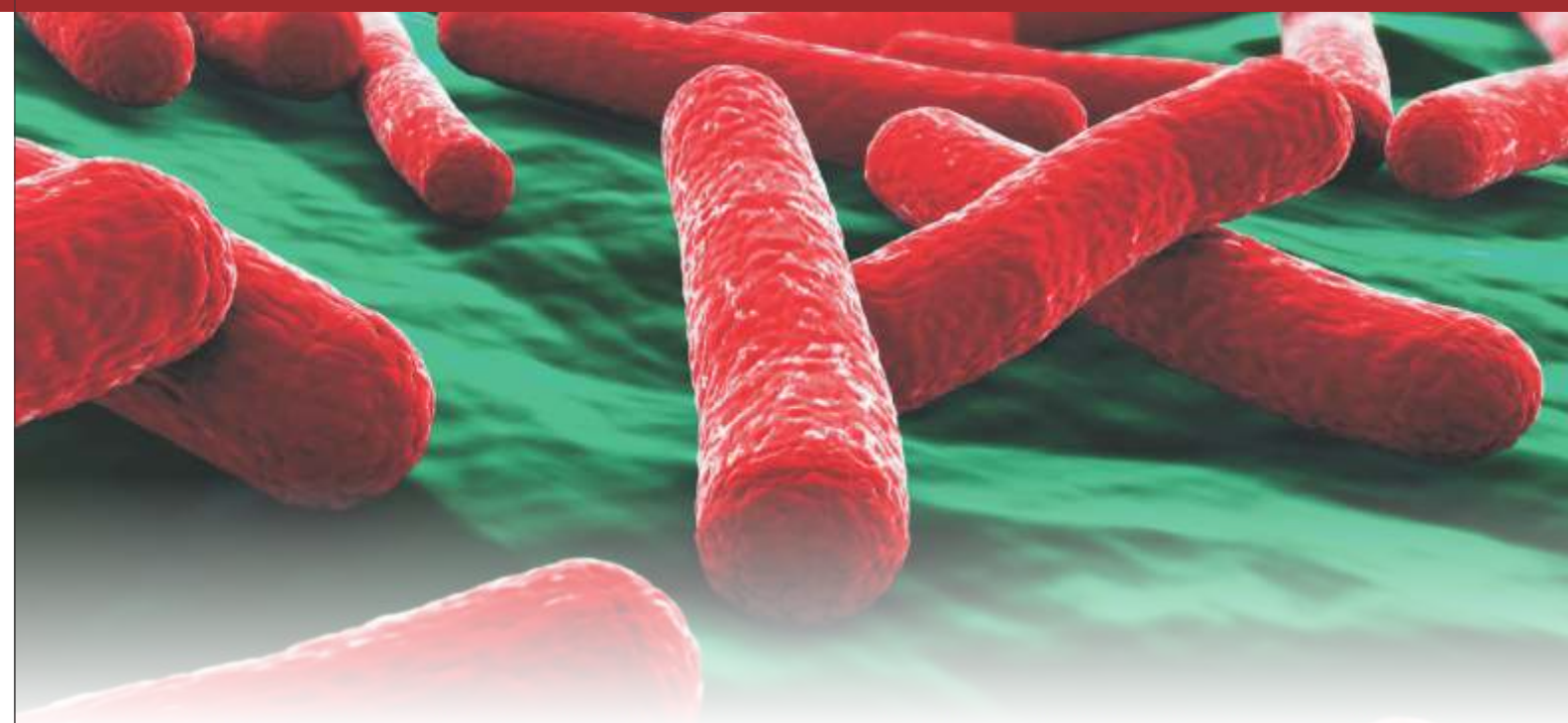
- Improves matrix value of P by 0.1%
- In practical terms, addition of the product @ 500 FTU/kg diet should raise the available P content by 0.1% which is equivalent to approximately 6.3 kg DCP

PRESENTATION

25 kg Bag

INCLUSION

- For broilers 100 g per tonne of feed @ 500 FTU/kg
- For layers 60 g per tonne of feed @ 300 FTU/kg



PHYTOBAC



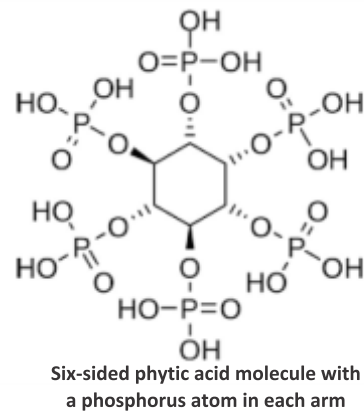
Manufactured & Marketed By:
ROSSARI BIOTECH LIMITED
(An ISO 9001 : 2015, 14001 : 2015 & GMP Certified Company)

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Phosphorus & Phytic Acid

Phosphorus (P) is a very expensive nutrient. Most of the phosphorus in plants occurs as phytic acid, being about two thirds of the total plant phosphorus. Phytic acid (myo-inositol hexaphosphoric acid) is present in grains and seeds as a mixed salt, phytate, mainly involving Mg, Ca, Na and K. The aleurone layer is the major site of phytate deposition in most cereals, whereas it is distributed uniformly throughout the kernels in dicotyledonous seeds, including oilseeds and grain legumes (Lott, 1984).



Challenges In Phosphorus Utilisation

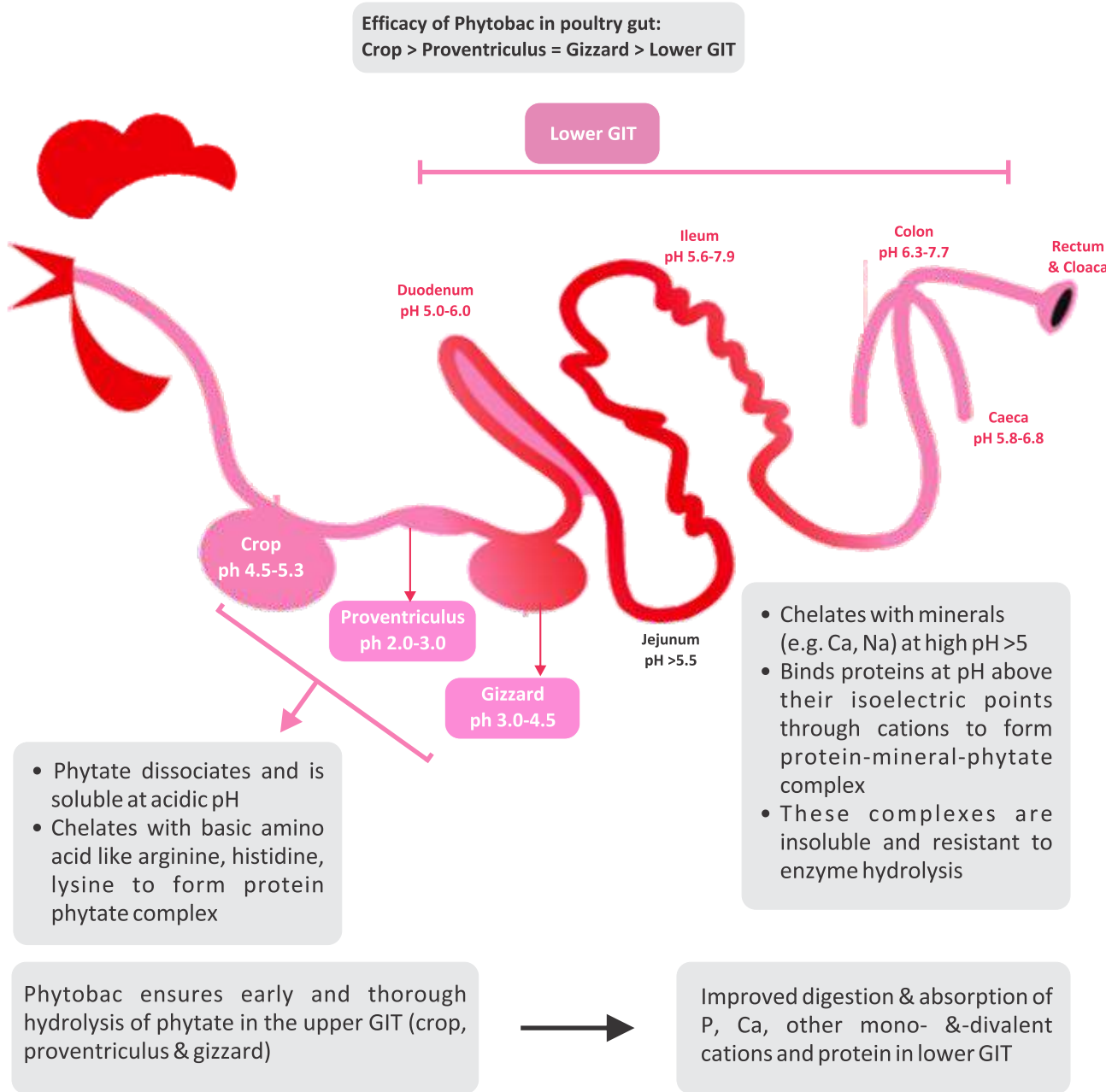
- The P concentration of phytic acid is 282g/kg and phytate-bound P constitutes most of the P in plant seeds. Due to the common usage of plant- derived ingredients, phytate-P concentrations range from 25 to 40 g/kg in typical poultry rations (Ravindran, 1995).
- Poultry have virtually no endogenous phytase activity, and so there is little digestion of phytate phosphorus.
- Poultry diets are mainly corn/SBM based; little endogenous phytase activity in these ingredients is insufficient in meeting available phosphorus demands.
- The phytic acid molecule has six phytic acid moieties that have a high affinity for several cations and one mole of phytic acid can bind upto 6 moles of Ca/P.
- These molecules are insoluble at the pH of the gut, and so render both phosphorus & calcium unavailable to the bird.
- Phytic acid also has the potential to chelate other mono-and-divalent cations (e.g. Zn, Mg, Na, K) and amino acids rendering them unavailable to birds.
- Eutrophication is a major concern worldwide with phosphorus utilisation due to its unavailability in poultry invivo through normal feed ingredients.

Total phosphorus and phytate-phosphorus contents and intrinsic phytase activities of common feed ingredients

Ingredient	Total P (g/kg)	Phytate-P (g/kg)	% of Total P	Phytase activity (FTU/kg)
Cereals*				
Corn	2.40	2.50	85	25
Sorghum	2.92	2.42	83	26
Barley	2.6	1.69	65	416
Wheat	2.85	2.08	73	471
Oliseed Meals**				
Cottonseed Meal	12	8.40	70	NA
Sunflower Meal	11.55	8.9	77	60
Spyabean Meal	6.5	3.9	60	8
Others**				
Rice Bran	17.59	15.93	91	127

* Selle et al., 2000; ** Leeson & Summers, 2001

Phytobac is a **thermostable** and **protease resistant** phytase that catalyses step-wise dephosphorylation of phytate to a series of lower inositol phosphate esters (myo-inositol pentaphosphate to myo-inositol monophosphate) and ultimately to inorganic P. It belongs to category **6-phytase** and is derived from *E.coli* by state-of-art fermentation technology.



Mechanism of action of Phytobac vs Biology of phytate in poultry gut

