HiPhorius™

Adding a little wins a lot

Expand your opportunities with
a new generation phytase.

dsm-firmenich

Are you ready to expand your opportunities in animal production with a new generation phytase?

Building on the heritage of our renowned RONOZYME® HiPhos, dsm-firmenich's new, fourth-generation phytase paves the way for future nutritional solutions with notable appeal.

Discover a new world of added value beyond your Phosphorus nutrition, and unlock the full potential of your poultry, swine, and aquatic feeds with HiPhorius™.

From advanced Phosphorus release to superior pelleting stability, from higher enzyme efficacy to lower feed costs, from maximized animal performance to a minimized environmental footprint, and from digestible Calcium precision nutrition to dsm-firmenich's easily accessible digital services and phytase expertise.

By adding a little, you can win a lot.

If not us, who? If not now, when?

We make it possible

Unlock a world of value

Lower Feed Cost

HiPhorius™ is increasing the Phosphorus Digestibility in all non-ruminant species, meaning that the use of expensive inorganic phosphates can be reduced significantly.

The result is substantial feed cost reduction.

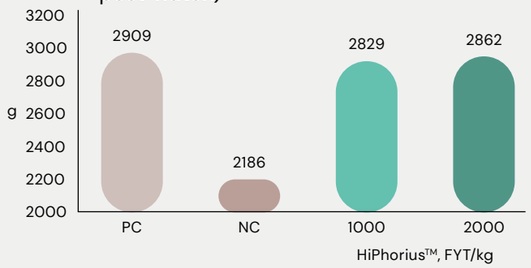
Maximized Animal Performance

Trials with broilers, pigs and fish demonstrate:

- Class-leading phytate degradation to improve Phosphorus digestibility and Phosphorus release.
- Increasing HiPhorius™ doses in the diets results in near complete phytate destruction to improve FCR and growth rate.

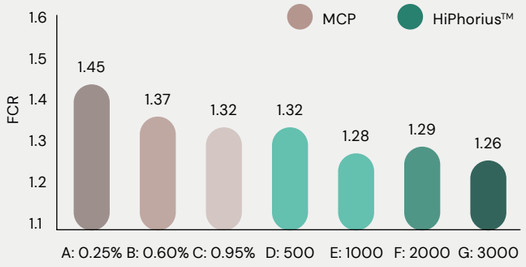
Broilers

Body Weight Gain, g (hatch to day 36 post-hatch)



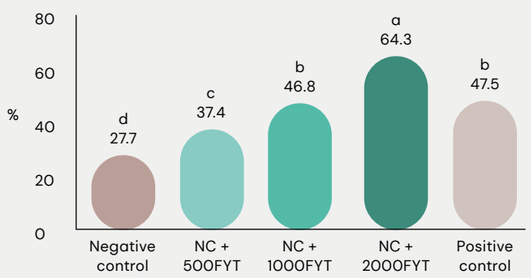
Pigs

Feed Conversion Rate



Tilapia

Phosphorous Digestibility



Peletting stability

Phytase stability during feed manufacturing process (e.g. pelleting), is becoming very important, especially when high efficiency phytases (like **HiPhorius™**) are displacing more and more inorganic phosphates in poultry, swine and fish diets.

HiPhorius™ recovery throughout the complete feed manufacturing process is excellent.

up to 95 C

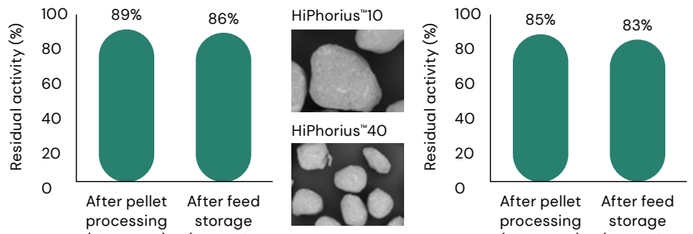
Physical characteristics of granulated forms

HiPhorius™10

Standard Formulation Technology for an improved stability and mixability

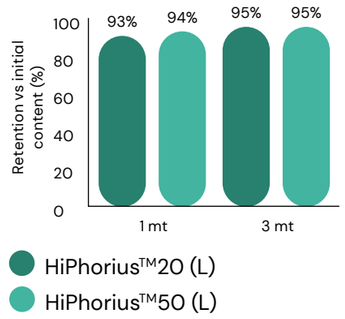
HiPhorius™40

New Formulation Technology ensures on par pelleting stability and mixability



Physical Characteristics of Liquid Forms

Stability of HiPhorius™20 (L) and HiPhorius™50 (L) products in pelleted feed

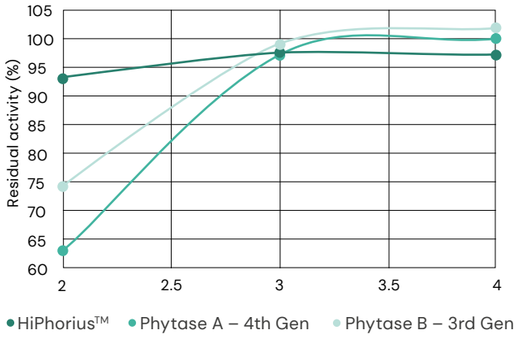


Enzyme Efficiency

HiPhorius™ activity is optimized and stable over a wide pH range and under conditions of the gastrointestinal tract. The superior stability of **HiPhorius™** enables rapid and efficient phytate degradation and mitigation of anti-nutritional effects of dietary phytate.

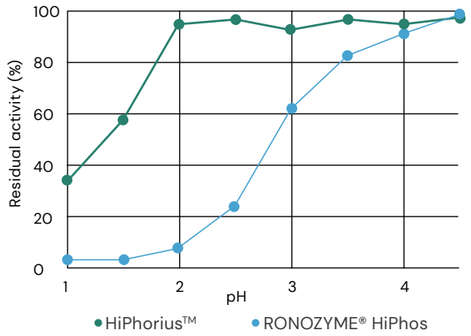
HiPhorius™ vs other phytases – Gastric Stability

30 min with Pepsin



Improved Phytase Molecule by Engineering

More stable under low pH in gastric phase

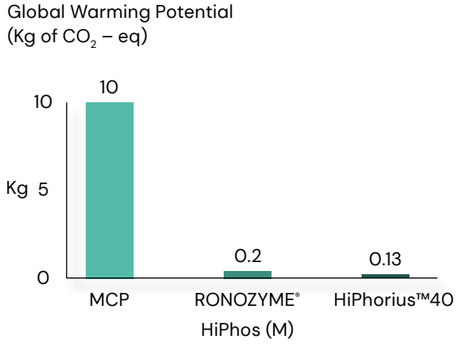


Residual enzyme activity after 30 min incubation at pH between 1.0 & 4.5 in presence of Pepsin

Minimized Environmental Footprint

HiPhorius™ increases profits while reducing livestock emissions. It goes beyond feed efficiency, delivering enhanced value by helping manage emerging challenges related to environmental sustainability (Phosphorus and GHG emissions). HiPhorius™ enables animals to utilise better the naturally occurring Phosphorus in feed and reduces the need for inorganic Phosphorus supplementation.

If 25g HiPhorius™40 is incuded in each MT of feed for 10mil broiler chicken, the Phosphorus emissions are reduced by 30MT of PO4 equivalents, while the GreenHouse Gas emissions (CH^4, N^2O, CO_2) are reduced by 850MT of CO_2 equivalents.



Digestible Calcium for Precise Broiler Nutrition

HiPhorius™ is a very efficient new generation phytase that rapidly eliminates dietary phytate and mitigates the formation of Calcium-phytate complexes in the gastrointestinal tract. This enables the use of digestible Calcium and precision broiler nutrition to improve broiler growth performance, nutrient utilization, and promotes sustainable use of resources.

Nutritional Expertise Beyond Digital Services

With end-to-end services, HiPhorius™ optimises value for customers by enabling better decision making and customized application.

The upgraded Phytase Web Matrix-Calculator is one of the digital services dsm-firmenich provides. Along with being a matrix calculator, this tool demonstrates the concept of Intelligent Phytase Nutrition, while also providing a sustainability and ROI calculator.

Other services include:

- HiPhorius™ recovery tests:
  - At Biopract GmbH in Germany
  - Via RapidLab technology, the only rapid quantitative assay in the market, measuring the active HiPhorius™ enzyme. Available in dsm-firmenich's local sites.
- NIR Phytate equation. It can be shared with HiPhorius™ users, who have compatible to dsm-firmenich's NIR-readers (FOSS & BRUKER).
- Support from our globally reputable phytase experts and scientists.

HiPhorius™ Product Forms

Agility to fulfill every customer need

	Activity (FYT/g)	Standard dose (g/MT)	Standard dose (FYT/kg)	Product form
HiPhorius™40	40,000	25	1,000	Granulated
HiPhorius™10	10,000	100	1,000	Granulated
HiPhorius™50L	50,000	20	1,000	Liquid
HiPhorius™20L	20,000	50	1,000	Liquid

- HiPhorius™40 is suitable for both direct use in feed, as well as in premixes.
- HiPhorius™10 is recommended for direct use in feed.
- Liquid forms are recommended for cases that pelleting temperature is higher than 90 – 95°C
- Liquid forms have a specific weight of approximately 1.2g/ml.

We bring progress to life

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