



HUVEPHARMA®

Let's Talk About Enzymes...

OptiPhos® / Hostazym® P, The fastest phytase!

The fastest phytase of all

When it comes to phytase, it is all about speed. OptiPhos® / Hostazym® P is the most effective phytase, because it breaks down phytate early in the digestive tract at an incredible speed. Kinetic testing by Diadem Laboratories proved that OptiPhos® / Hostazym® P is the fastest phytase of all. (see figure 1)

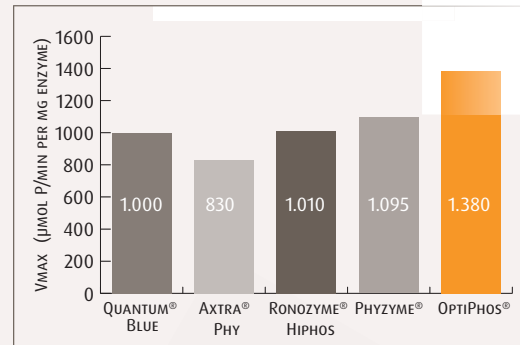


FIGURE 1
OptiPhos® the fastest phytase

Superdosing improves growth and feed conversion

Because OptiPhos® / Hostazym® P is the fastest, it releases more Phosphorus per minute than any other phytase. Fast destruction of phytate early in the digestive tract makes OptiPhos® / Hostazym® P the ultimate product to improve growth and FCR (the superdosing effect). Recent trials show that OptiPhos® / Hostazym® P in Phosphorus sufficient diets improves growth and feed conversion. The strength of OptiPhos® / Hostazym® P is underlined because, already at a double dose, OptiPhos® / Hostazym® P shows a 1.8% better FCR and 2.5% increase in body weight! (see figure 2)

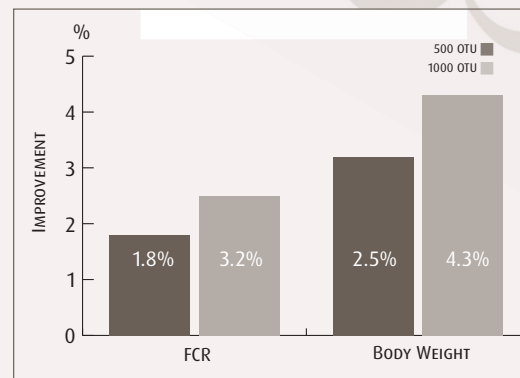


FIGURE 2
Improved growth and feed conversion in broilers by superdosing OptiPhos®

In pigs as well, OptiPhos® / Hostazym® P improves growth and feed conversion. Again, at a double dose, we see the superdosing effect! (see figure 3)

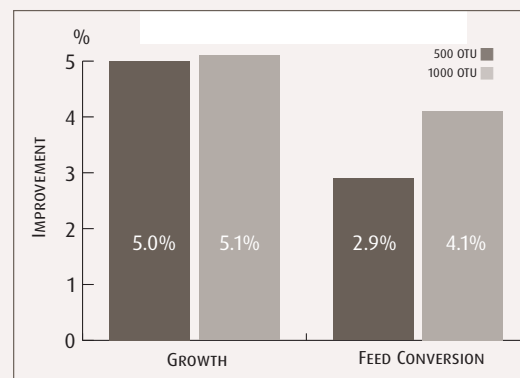


FIGURE 3
Improved growth and feed conversion in pigs by superdosing OptiPhos®

OptiPhos®
Hostazym® P

key facts

OptiPhos® / Hostazym® P is the fastest phytase

This results in:

- highest Phosphorus release
- maximum break down of Phytate
- extra growth
- improved FCR

Hostazym® X : best-value-for-money in pig fattening!

Increasingly, more alternative cereals and (local) fibrous protein by-products find their way into pig fattener diets. Consequently, the need to use NSP enzymes in the diet grows in order to maintain or improve growth performance and gut health. Despite an extended digestive tract and profound hindgut microflora, pigs still need more efficient ways to extract extra nutrients out of feed to optimize feed efficiency.

Comparison of various enzyme products

A practical pig trial was set up at Lovenjoel Zootechnical Center (Belgium, 2016), in which a positive control (PC) group was compared with 4 different enzyme treatments.

Each enzyme product was added to an energy-reduced diet at a dosage rate matching manufacturers' recommendations as follows:

TREATMENT 1

Positive control diet (PC)

TREATMENT 2

PC - 55 kcal NE/kg + Hostazym® X at 100 g/t (1500 EPU xylanase/kg feed)

TREATMENT 3

PC - 55 kcal NE/kg + Axtra® XB 201 TPT at 100 g/t (1220 UX xylanase and 152 UG β -glucanase/kg feed)

TREATMENT 4

PC - 55 kcal NE/kg + Rovabio® Excel AP at 50 g/t (1100 VU xylanase and 1500 VU β -glucanase/kg feed)

TREATMENT 5

PC - 55 kcal NE/kg + Econase® XT 25P at 150 g/t (24000 BXU xylanase/kg feed)

Technical results

In Figure 1, the main results are shown for each treatment. Besides the weakest performing group of Axtra® XB, tested NSP enzymes yielded a comparable high end weight.

Hostazym® X achieved the best FCR amongst all the enzyme groups and was the only product that equaled the positive control group (PC). (see figure 1 and 2)

Because Hostazym® X was the only NSP enzyme in this test to improve weight gain and to compensate for the -55 kcal NE reduction, Hostazym® X yielded the highest financial gain. (see table 1)

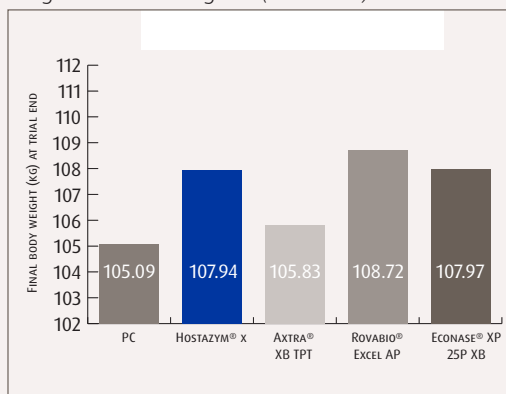


FIGURE 1
Final BW at trial end

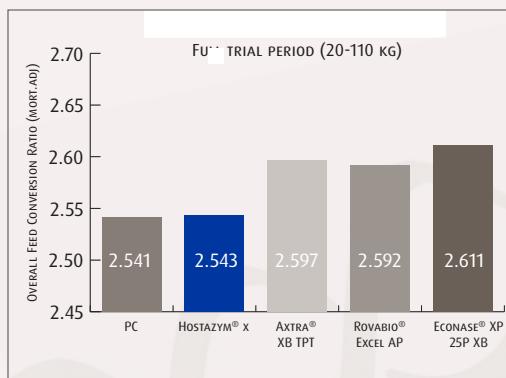


FIGURE 2
FCR (mortality adjusted)



Hostazym® X

Economical value

The positive zootechnical effect of Hostazym® X can easily be translated into a cost-benefit. Table 1 shows the extra financial gains that can be obtained by the use of each enzyme tested. Three different scenarios of delivered pig price were simulated at a standard

feed cost. Clearly, Hostazym® X is the product with the highest economical value. When comparing total feeding costs with pig earnings (live weight), Hostazym® X yielded the highest extra income of 2 - 3 €/delivered pig compared to the positive control!

TABLE 1

Extra financial gains for each enzyme treatment versus positive control (high energy)

Average FEED PRICE (€/t)	Delivered PIG PRICE (€/kg)		
235	0.9	1.1	1.3
Extra gain vs PC (€/pig) per group			
P-55 kcal NE/kg + Hostazym® X 1500	2.02	2.60	3.17
P-55 kcal NE/kg + Axtra® XB 201 TPT	0.41	0.56	0.71
P-55 kcal NE/kg + Rovabio® Excel AP	1.38	2.11	2.83
P-55 kcal NE/kg + Econase® XT 25P	0.76	1.33	1.91

key facts

Hostazym® X inclusion in fattening pig feed led to:

- full compensation of 55 kcal reduction in net energy, while Axtra® XB, Rovabio® Excel and Econase® XT did not
- 6 points better feed conversion than Axtra® XB, Rovabio® Excel and Econase® XT
- an extra financial gain up to 3 €/delivered pig



Alternative raw materials high in phytate are target for superdosing

Recently, data has been published on the superdosing of OptiPhos® in pig and poultry production, in order to obtain better growth and feed conversion.

- **FOR BROILERS**, superdosing OptiPhos® at a double (2x) and fourfold (4x) inclusion rate resulted in 55 and 98 g extra end weight respectively, while feed conversion was reduced by 0.03 and 0.05. This yielded an extra income up to 9 eurocent per broiler.
- **FOR PIGS**, doubling the dose of OptiPhos® increased average growth rate by 5 % and reduced feed conversion by 2.9 %. This yielded an extra income up to 2 euro per pig.

Level of phytate varies between feed materials

Phytate is the natural storage form of Phosphorous (P), present in all raw materials of vegetable origin. However, phytate acts as an anti-nutritional factor. Therefore, superdosing phytase is intended not only to release more phosphorus but also to destroy all

intact phytate and, by doing so, eliminates it as an anti-nutritional factor.

When soy protein in diets is replaced by alternative protein sources such as sunflower and rapeseed meal, phytate-bound phosphorous increases, as these protein sources contain much more phytate-bound phosphorous than the soyabean meal.

Table 1 gives an overview of formulated grower (10-21 d) and finisher (21-38 d) feeds for broilers using only soybean meal or a combination of soybean meal with rapeseed meal. In this table, it is clearly shown that phytate-P levels increase with 0.6 to 1 g per kg feed when rapeseed meal replaces part of the soybean meal, reaching final levels up to 3.3 g phytate-P per kg. At these high levels, the impact of phytate as an anti-nutritional factor is expected to be much stronger.

To counteract this effect, a higher inclusion rate of OptiPhos®/Hostazym® P is strongly recommended for these kinds of feed formulations.

TABLE 1

Formulated grower and finisher broiler feeds with and without rapeseed meal

	Grower		Finisher	
	Soy based	Rapeseed based	Soy based	Rapeseed based
Feed composition				
Corn	200	200	150	150
Wheat	446	349	553	408
Soybean meal 48%	295	213	230	105
Rapeseed meal	0	150	0	225
Others	59	89	67	112
Calculated analysis				
Crude protein	209	209	189	188
Ca	7.5	7.5	7.0	4.0
P total	5.7	6.5	5.1	6.3
Phytate-P	2.5	3.1	2.3	3.3



key facts

- Formulating with alternatives to soybean protein, increases the level of phytate-P in feeds
- Superdosing of OptiPhos®/Hostazym® P is strongly advised to counteract increased phytate-P levels
- Superdosing of OptiPhos®/ Hostazym® P leads to 9 eurocent extra per broiler and 2 € per pig