



Focus:

Comparison of E.coli phytases OptiPhos[®], Quantum and Phyzyme XP for improving P bioavailability in young pigs

Site:

JBS United research farm at Frankfort, IN, USA , 2005, JBS 05-N002

Animals:

84 barrows, starter weight 7,53 kg, 20 days trial

Experimental design:

Randomized complete block design with 12 treatments and 7 replicates.

The basal diet was formulated to be deficient in P, containing a calculated level of 0.40% total P and 0.075% estimated available P. Dietary treatments included two graded levels of inorganic P (iP; 0.075 and 0.150%) from monocal (20.0% P), and three levels of Phytase (250, 500 and 1000 units) for OptiPhos[®] (OTU), Phyzyme[®] XP and Quantum (both in FTU), added to the P-deficient basal diet.

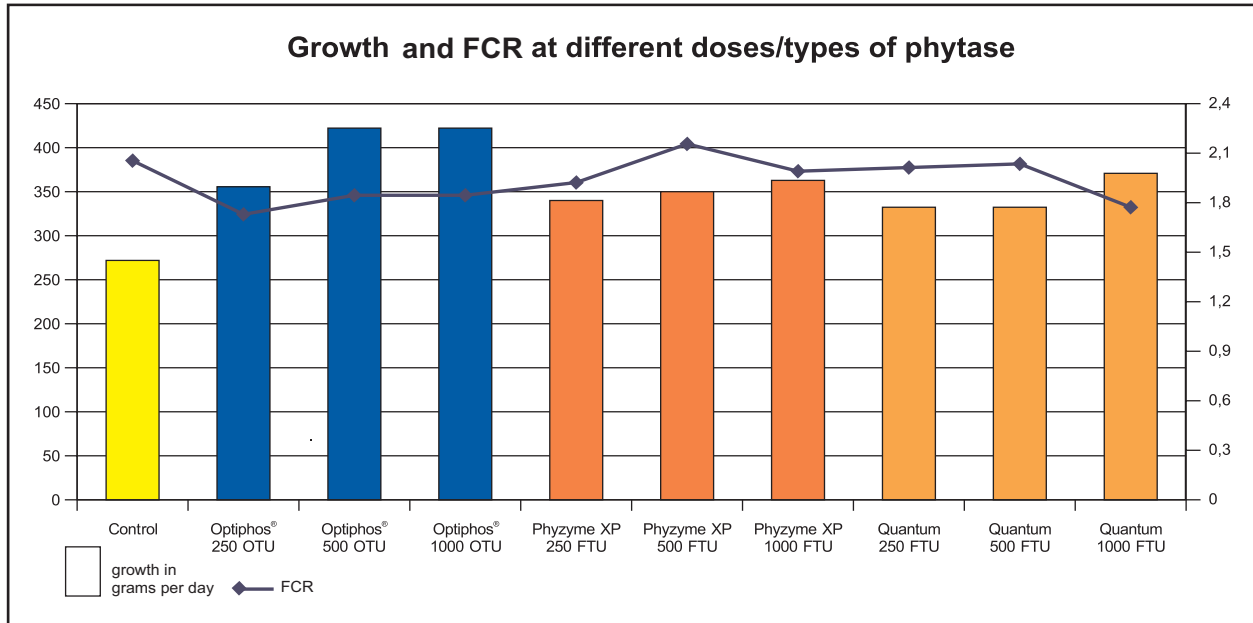
Diet composition:

Ingredient	%
Corn	61.15
Soybean meal	32.00
Fat	3.00
Limestone	1.36
Premix vit.+min., amino acids etc.	1.00
ME kcal/kg	3470
CP %	20.8
Ca %	0.70
P %	0.40
avP %	0.075

Recorded parameters:

Body Weight, ADG, ADFI, F:G, Fibula ash

Trial results:



Amount of aP in % released by the different phytases

Phytase	Units/kg of feed	Fibula ash, %	Bioavailable P-release, %
Basal	—	40.3	---
Optiphos®	250	45.4	0.142 ^a
Optiphos®	500	45.5	0.123 ^a
Optiphos®	1000	47.5	0.145 ^a
Phyzyme XP	250	41.3	0.038 ^{cd}
Phyzyme XP	500	42.3	0.072 ^{bc}
Phyzyme XP	1000	43.8	0.104 ^{ab}
Quantum	250	40.8	0.067 ^{bc}
Quantum	500	43.2	0.059 ^{bc}
Quantum	1000	44.6	0.112 ^{ab}

Conclusions

- Both growth and feed efficiency in the 20 day period were better in OptiPhos® groups compared to the other two *E. coli* phytases at the same inclusion rate
- Bone ash analysis demonstrated superior efficiency of OptiPhos® as compared to the other two *E. coli* phytases included in the experiment

250 OTU Optiphos is equivalent to 50g of Optiphos 10,000 PF coated per tonne of feed