

Combating Rising Phosphate Costs with Higher Levels of Phytase

The cost of dicalcium phosphate and other dietary phosphorus sources have been trending upward during the last 12 months. However, recent increases pale in comparison to the dramatic price move coming in early spring, 2008. Indications are that we will see a price increase of 60 to 70% (\$250 - \$300 per ton) in March or April, 2008.

While we cannot control world economics and/or phosphate pricing, we do have control over the diets we feed. With changing economics, we need to make certain we fully utilize the phytase enzyme so that we can minimize the usage of inorganic phosphate in our diets. Doing so will help offset higher costs of inorganic phosphates.

The phytase enzyme has been commonly used at moderate levels in swine diets for several years. Moderate phytase inclusion levels have been most economical in the past. However, the expected change in phosphate pricing will “raise the bar” as to the level of phytase that is most economical to use in swine grow-finish diets (see Chart 1).

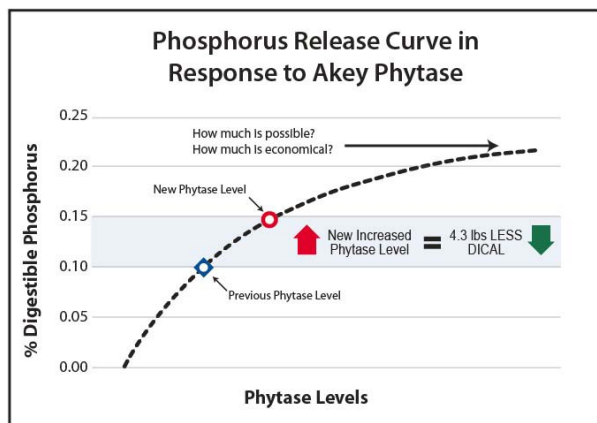


Chart 1- Effect of Phytase on Phosphorus Release

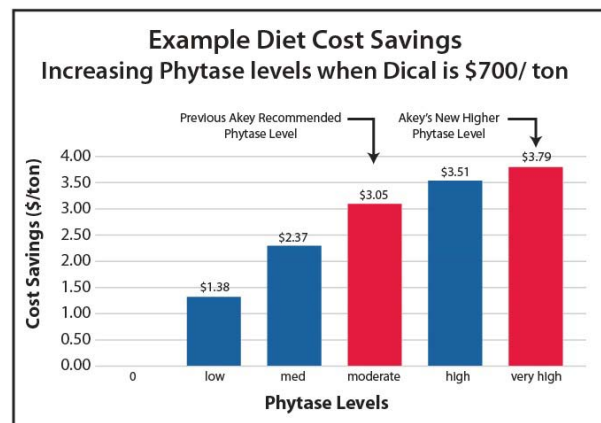


Chart 2 –Effect of Phytase Level on Diet Cost Savings


Chart 1 illustrates the response curve of phytase used at differing levels. The incremental benefit of phytase decreases as phytase inclusion rate goes up. However, a significant cost increase of inorganic phosphate will now justify higher phytase levels.

Chart 2 shows that using a “very high” phytase level reduces the cost of inorganic phosphorus in a diet by \$3.79 vs. \$3.05 when using a moderate phytase level. The increased savings in this example is \$0.74 per complete ton.

The worksheet below shows projected economics of using Akey-formulated base mixes when the new level of dical pricing takes effect early in 2008. Note the dramatic benefit of phytase over non-phytase diets when phosphate costs are increased. Also, note that the higher level of phytase utilization (1,000 phytase units vs. 600) uses 4.4 fewer pounds of dicalcium phosphate per complete ton (16.4 lbs less than non-phytase diets), and more than doubles the financial benefit of using phytase at current phosphate pricing.

Cost Benefits of Phytase

(Comparing - 0 -, 600, & 1,000 Units of Phytase)

Current Dical Cost/Ton		\$ 420.00				
Future Dical Cost/Ton		\$ 690.00				
Base Mix Program		GF 55/45 (no Phy)	GF 46/37 (Phy 600)	GF 46/37 (Phy 1000)	GroFin 46/37 with Phy 1000 vs 600 Advantage	
Inclusion Rate per Complete Ton, lb		55	46	46		
Pounds Dical per Complete Ton		22.4	10.4	6.0		
Pounds Dical Saved per Complete Ton		0	12.0	16.4		
Base Mix Cost Savings/Ton (including added phytase cost)		Savings at Current Dical Cost	-	\$ 1.57	\$ 1.72	\$ 0.15
		Savings at Future Dical Cost	-	\$ 3.19	\$ 3.93	\$ 0.74

Akey has conducted extensive research on phytase, which has led to new recommendations that will allow producers to minimize the impact of higher inorganic phosphorus costs, and still meet production goals. We recommend that you give serious consideration now to maximizing your use of the phytase enzyme in swine diets. Please contact your Akey representative for updated recommendations.