



Enzymes have become a key solution in resource efficiency. Phytase is known to raise the available or digestible phosphorus (P). However, the power to release digestible P out of plant phytate is not linear. This means that it's no use adding (expensive) phytase to the feed unlimitedly. But how to deal with this non-linear effect? How to obtain the most cost-effective use of enzymes in your formulation?

In other words: How to formulate easily the cheapest compound with the most optimal inclusion of enzymes?



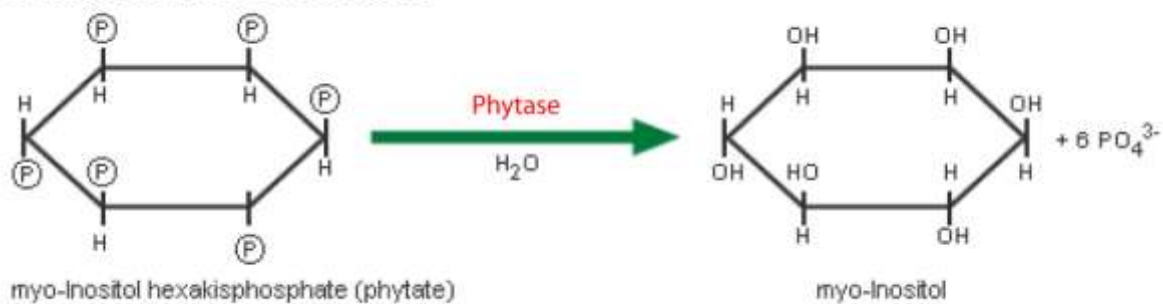
Resource efficiency

Formulation managers have an increasingly strategic role to play in a complex market. Resource efficiency has become a key word in feed formulation. Breaking down the plant phytate to release more digestible Phosphorus by adding phytase in animal feed has become common practice.

Fast facts

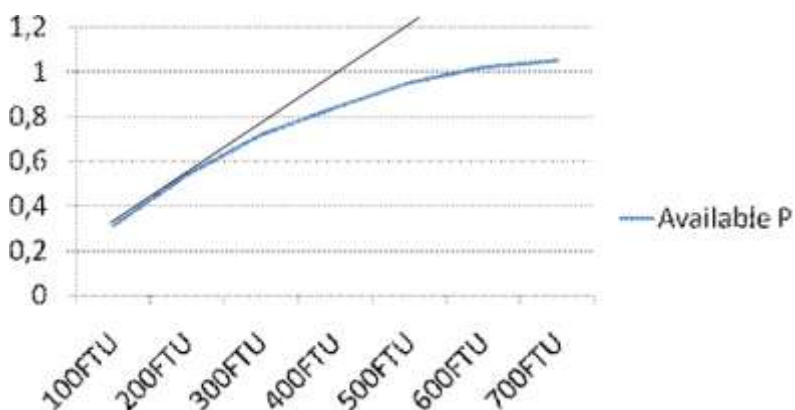
- Phytase is an enzyme that increases availability of phosphorus in animal diets
- Phytase lowers the amount of supplemental phosphorus required in the diet
- Because of improved dietary phosphorus utilization, less phosphorus is excreted in the manure.

Releasing phosphorus from phytate



Non-linear behaviour of phytase : challenge for feed formulation programs

How useful adding phytase to feed may seem, tests have shown that the power to release digestible P out of plant phytate is not linear. This means that the first 250 FTU of phytase will release more digestible P than the second 250 FTU you include in a compound.



This 'non-linear behaviour' forms special challenges for feed formulation programs, as these are based on linear programming. Adifo's least-cost feed formulation program BESTMIX® is the first and only tool that offers a sound solution for optimising with "non-linear" effect. The software breaks down the effect of Phytase into linear phases to simulate the non-linear effect. This way, the formulator can apply Phytase as if it were any other ingredient, resulting in the same values: the optimal inclusion rate, the shadow price, the total consumption, etc. BESTMIX® uses a full optimisation, resulting in a dynamic inclusion rate of Phytase and the lowest possible compound price.



Detailed analysis of the result

There is more. BESTMIX® also gives insight in the behaviour of the enzyme in the composition. It compares the composition and the price of the compound twice: Once with the use of phytase and once without the use of phytase. This way, the nutritionist can analyse the behaviour of phytase in all details.

Anti-nutritional effect of enzymes

Phytase not only releases extra digestible Phosphorus. Thanks to its anti-nutritional effect, it also raises the level of protein, amino-acids and energy values in the feed. These extra advantages are made visible in BESTMIX®. The software clearly shows to the nutritionist the effect of phytase in the compound feed for all nutrients.

Most cost-effective use of Phytase in the formulation

Not all phytases available on the market have the same effectiveness. Nor the same price. With BESTMIX®, it is easy to evaluate every single type of phytase, making you see which phytase brings the highest value to your specific compound.

NSP enzymes

The BESTMIX® feed formulation software not only offers a solution for working with Phytase, but also with any kind of NSP enzyme. This means the formulator can set up a NSP-enzyme in such a way, that its effect on the nutritional value of certain other ingredients is defined. In other words, you define exactly on which ingredients the enzyme has an actual effect. This way, your ingredient matrix is kept clean. It has proven to be a far better solution than to create different series of a certain ingredient, with adapted nutrient values for every NSP enzyme and every possible enzyme activity combination.

Conclusion

Using the state-of-the-art formulation tool BESTMIX® to calculate the cheapest compound with the most optimal inclusion of enzymes is a real money saver.

Want to know more? Contact us at:

Adifo NV
Industrielaan 11B
9990 Maldegem
Belgium
Phone: +32 50 303 211
sales@adifo.com
www.adifo.com or www.feedformulation.com

