



7 FACTORS TO CONSIDER WHEN CHOOSING A XYLANASE FEED ENZYME

1. Do you want to reduce feed cost or improve performance?

This is one of the most important questions a nutritionist or decision-maker should ask when considering xylanase enzyme options. Based on your enzyme use strategy (diet reformulation or on-top application), you can calculate your potential ROI.

REFORMULATION

Use the matrix value information provided by the enzyme manufacturer and a least-cost formulation software system to calculate potential feed cost savings.

ON-TOP APPLICATION

To calculate the value of performance improvement from on-top application of the xylanase product, consider improvement in FCR, higher body-weight gain, fewer days to market, reduction in mortality, improvement in egg shell quality or other related factors.

On average, the use of a xylanase feed additive in poultry diets should provide at least two to five times return on investment, depending on feed prices, formulation, quality, and which performance parameter is measured.

2. Does the particular xylanase additive work well in your specific feed formulation?

It is important that you select the type of xylanase that works well with the feed ingredients being used. For example, certain classes of xylanase work better than others in low-fiber diets like corn-soy. Whether your feed formulations contain ingredients such as wheat, corn, soybean meal, or sorghum, it is important to select a xylanase optimized for those specific diets. Reviewing the results of animal feeding trials, and speaking with trusted experts will provide more detail.



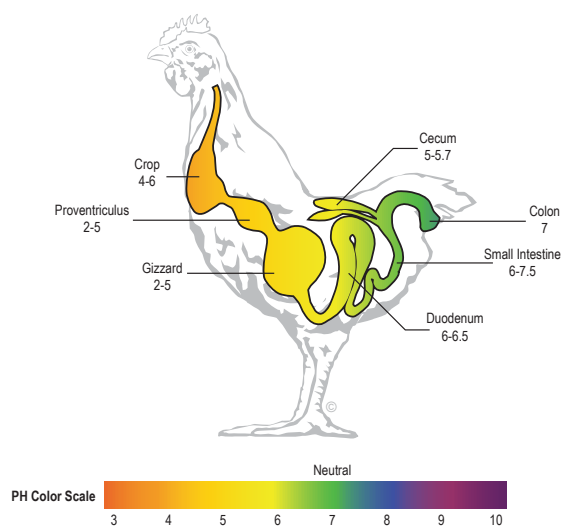
3. Is the xylanase product thermostable enough to withstand pelleting under your feed mill conditions?

If you plan to mix the enzyme in your feed before pelleting, it is important to select a xylanase product that is thermostable and capable of withstanding high temperatures inherent in the pelleting process. Pelleting conditions, including temperature, conditioning time, how fast the pellets are cooled, dye size and other factors have an impact on whether the enzyme “survives” the pelleting process. Enzymes achieve thermostability either intrinsically or through coating. Coated products may take longer to break down and dissolve in the animal’s gut, allowing less reaction time with feed. Intrinsically thermostable enzymes are specifically developed to withstand high temperatures without coating and maybe more effective.

4. What is the pH activity profile of the xylanase?

Nutrient absorption takes place in the hind gut, where pH levels range from neutral to alkaline. Solutions with a pH less than 7.0 are considered acidic while those above 7.0 are alkaline. The level at which the enzyme exhibits highest activity is known as its optimum pH. Ideally, a xylanase enzyme should survive at the low pH ranges, but should be most active around the neutral pH – the range at which the majority of digestion occurs. A suboptimal pH activity profile may sometimes be compensated for by higher dosing (adding more enzyme), which also increases inclusion costs.

It is important to note that an enzyme’s activity can be reduced or eliminated if its structure is altered. When selecting a xylanase, be sure to ask if it will withstand your pelleting process conditions and acidic conditions within the animal’s gut without losing effectiveness.



5. What quality standards is the enzyme produced under?

Given that enzymes are produced using microbial fermentation, it is very important to work with an experienced manufacturer with proven quality control. While the use of GMP (Good Manufacturing Process) standards provide good general quality control, the European Feed Additives and Premixtures Quality System (FAMI-QS) is the only certification specific to the manufacture of specialty feed ingredients for use in animal nutrition. FAMI-QS certification includes requirements in the areas of quality and feed safety, management systems, traceability and product regulatory compliance. Most suppliers guarantee a certain minimal enzyme activity that can be verified by standard analytical methods.

6. Is the xylanase compatible with other enzymes?

Supplementing animal diets with a phytase, a protease and a xylanase is becoming a more common practice. Each type of enzyme acts upon different substrates and has a specific impact on energy release. Manufacturers of enzymes typically claim energy credits of their products. It is important to select an enzyme whose individual effect is additive when used with other enzymes, and to adjust the matrix to maximize animal performance and ROI.

7. Does the xylanase product contain other enzymes or side activities?

Certain xylanase products in the marketplace include side activities of other enzymes, including beta-glucanase, amylase and others. While having other enzymes in the product may seem attractive, paying for enzymes that may not provide proven value may reduce the product’s ROI. When evaluating such a product, it is important to consider whether all of the enzymes are needed and if they add value. This could be done by determining the following:

- Which enzymes in the product have guaranteed activity levels?
- What do the activity numbers (dosage) mean in terms of incremental performance improvement in the animal?
- Is there enough substrate in the feed for additional enzymes in the product?
- Does the animal have its own endogenous version of the same enzyme?