

# Keystone XP

GET THE MOST OUT OF YOUR GRAINS



Feed expenses comprise almost 70% of the cost of commercial animal production so it's critical to maximize the value of that feed. Anti-nutritional factors and caged nutrients hinder animal performance and contribute to excess phosphorous and nitrogen excretion into the environment.

**Keystone XP** is an enzyme solution that combines a heat stable phytase with two xylanases, a fungal and bacterial, in a single economical package. The combination of xylanases improves the breakdown of soluble and insoluble arabinoxylans, reducing gut viscosity and releasing nutrients, while the phytase reduces the anti-nutritional effects of phytate and improves phosphorous digestibility.

## Description

**Keystone XP** is an enzyme blend designed to provide 1500 FTU/kg of phytase activity and 1000 U/kg of xylanase activity when used at a 50 g/ton inclusion rate.

## Product Characteristics

Appearance: Light brown powder  
Smell: Fermentation odor  
Packaging: 25 kg bags

## Feeding recommendations

Feed during all phases of production as part of a complete ration.

- Poultry: 25-50 g/ton
- Swine: 25-75 g/ton

Shelf life: 1 year

Storage: Store in original packaging in dry location out of direct sunlight.

For more information contact Jeff McCalla  
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Ingredients

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## Enzyme Matrix Values

	Broiler at 50 g/ton inclusion	Enzyme blend per Kg
Crude protein %	0.75	15000
ME (kcal/kg)	100	2000000
dLys %	0.05	1000
dMet %	0.014	280
dMet+Cys %	0.04	800
dThr %	0.041	820
dArg %	0.039	780
dTry %	0.01	200
dVal %	0.048	960
dLeu %	0.08	1600
dIso %	0.04	800
Av. Phos %	0.177	3540
dCalcium %	0.175	3500

Matrix values were calculated from trial data using corn/soy diets. Values are not to be considered guarantees and should be optimized based on trials using customer rations.

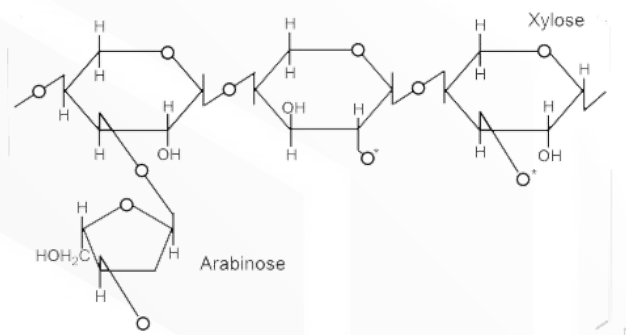
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Arabinoxylans are a major non-starch polysaccharide present in many commonly used feed ingredients. In plants, they serve a structural role as a cell wall component though in animal diets they act as anti-nutritional factors. Soluble arabinoxylans absorb water in the gut lumen and increase the intestinal viscosity. This reduces endogenous enzyme diffusion and slows nutrient absorption, reducing feed conversion. Insoluble arabinoxylans encapsulate nutrients and block digestive enzymes from their substrates.



## Soluble Arabinoxylan

### Responsible for increased intestinal viscosity

- Reduced enzyme diffusion
- Reduced FCR
- Increased nutrient passage

## Insoluble Arabinoxylan

### Forms primary and secondary plant cell walls

- Encapsulates nutrients
- Physically blocks endogenous enzymes from substrates

Microbial xylanases have been used extensively used in monogastric diets to reduce the anti-nutritive effects of arabinoxylans. The majority of commercially available xylanases are fungal in origin. The optimum pH for fungal xylanase activity is in the range of 2-6 and many commercial fungal xylanases preferentially target soluble arabinoxylans for intestinal viscosity reduction. In contrast, bacterial xylanases have an optimal pH range of 5-8 and target insoluble arabinoxylans.

Keystone XP contains a unique blend of fungal and bacterial xylanases that work in combination to improve the digestibility of plant-based ingredients. The bacterial xylanase component breaks down insoluble arabinoxylans to release trapped nutrients and solubilizes the insoluble fraction. The fungal xylanase degrades the soluble arabinoxylan, releasing xylo-oligosaccharides that are fermented by beneficial bacteria in the hindgut to generate volatile fatty acids and improve gut health. Keystone XP also contains 6-phytase to provide a single matrix value and take the guess work out of formulations.

Contact your FusionFeed Ingredients service rep to learn how Keystone XP can reduce your feed costs and improve animal performance.