

Huvezym neXo - a new enzyme to get the most out of dietary fibre

Non-starch polysaccharides (NSP) are an important part of monogastric animal diets. However, these NSPs may have a negative impact on feed utilisation, reducing nutrient digestibility and absorption throughout the gastrointestinal tract (GIT). The anti-nutritive effects of the soluble NSPs (arabinoxylans (AX), glucans) have been attributed to their ability to increase digesta viscosity, limiting the absorption of nutrients and promoting pathogen growth in the GIT. Additionally, the insoluble NSPs (AX, cellulose) can limit the access of the endogenous enzymes to the nutrients trapped in the cell wall matrix and therefore hinder digestion.

To offset the anti-nutritional factors from the NSPs, non-starch polysaccharide degrading enzymes (NSPases) are considered best practice in animal nutrition, enhancing feed digestion and contributing to improved animal performance. Also highly relevant, the use of NSPases contributes to a significant reduction in feed cost, as their action allows nutrient sparing effects and the use of alternative raw materials in feed formulation.

Raw material prices and availability, and concerns with the sustainable production of animal protein start to draw attention to the use of alternative, locally sourced, feedstuffs, such as higher amounts of certain cereals and oilseed byproducts. The use of these alternatives has a strong impact on the fibre composition of the feed and consequently in the enzymes needed for efficient fibre degradation.

In December 2025, Huvepharma received European Union registration for the use of a NEW NSPase, Huvezym neXo in all poultry and swine species. This new enzymatic complex results from several years of research together with Wageningen University into the enzymatic degradation of fibre in the digestive tract of monogastric animals. The development of Huvezym neXo targeted specific enzyme activities with zootechnical relevance for the degradation of complex fibre structures in diets containing more fibrous raw materials or alternative raw materials.



Watch Natalia Soares, Global Product Manager - Enzymes, Huvepharma introduce Huvezym neXo

Huvezym neXo mode of action

Huvezym neXo is an enzymatic complex of 1,4-beta-xylanase; 1,4-beta-glucanase and xyloglucanase. Various research trials have shown the efficiency of Huvezym neXo in improving the performance of animals fed different types of diets, including those containing more complex fibre.

The reported performance improvement with Huvezym neXo can be linked with three different modes of action:

Firstly, partial enzymatic hydrolysis and depolymerisation of soluble AX and glucans, which reduces intestinal viscosity and enhances nutrient absorption.

Secondly, Huvezym neXo partially degrades insoluble NSPs present in the cell wall matrix, ruptures the cell wall, and releases nutrients that were physically entrapped by the intact cell wall. This effect is enhanced by the presence of xyloglucanase, which hydrolyses the xyloglucan cross linked between the cellulose fibrils. The disruption of the cellulose matrix facilitates access of the 1,4-beta-xylanase to its substrate, resulting in a more efficient degradation of the cell wall.

Thirdly, as it solubilises AX, Huvezym neXo releases arabinoxylan-oligosaccharides (AXOS). AXOS have a prebiotic potential and have been linked with increased short-chain fatty acid (SCFA) production in the caeca of broilers. SCFAs are known to promote gut health and provide additional energy to the host among other benefits.

In a research broiler trial performed in Belgium, different segments of broiler GIT content were sampled and used to measure the formation of SCFAs and assess the effect of Huvezym neXo supplementation on the fermentation processes along the GIT. The results, shown in Table 1, demonstrate that Huvezym neXo addition significantly increased acetate and succinate content in the ileum, and significantly increased the content of acetate, butyrate and total SCFAs in the caeca. These SCFAs can be used by the host in different metabolic pathways, as an additional energy source and to promote gut health.

	Ileum (µmol/g)			Caeca (µmol/g)		
	Acetate	Lactate	Succinate	Acetate	Butyrate	Total SCFA
Control	2.52	129.42	3.30	172.66	53.12	239.7
Huvezym® neXo	9.47	250.20	7.59	250.94	73.08	338.0
<i>p</i> -value	<0.05	0.1	<0.05	<0.05	<0.05	<0.05

When to use Huvezym neXo

Huvezym neXo is a coated enzymatic complex developed for optimal fibre degradation and is a nutritional tool to support animal production efficiency. It was developed to degrade complex fibre structures in diets using more fibrous or alternative raw materials which may need a specific combination of enzymes to assure the animal gets the most out of the fibre. Moreover, being a coated formulation assures stability through feed processing systems up to 85 °C.



The new and unique enzymatic complex of 1,4-beta-xylanase; 1,4-beta-glucanase and xyloglucanase is the required aid to improve performance in animals fed complex fibre diets. Increasing complexity of the feed fibre composition requires support from additional enzymes, such as cellulases (1,4-beta-glucanase and xyloglucanase) which will disrupt the cell wall matrix and facilitate access of the xylanase enzyme to its substrate (arabinoxylan).

The efficiency of Huvezym® neXo in degrading complex fibre is shown in Figure 1. Significant fibre digestibility improvements can be seen both for cellulose and hemicellulose in (A) broilers fed a maize¹, wheat, soybean meal (SBM) diet and (B) layers fed a wheat, maize, barley, SBM, sunflower meal (SFM), rapeseed meal (RSM) diet.

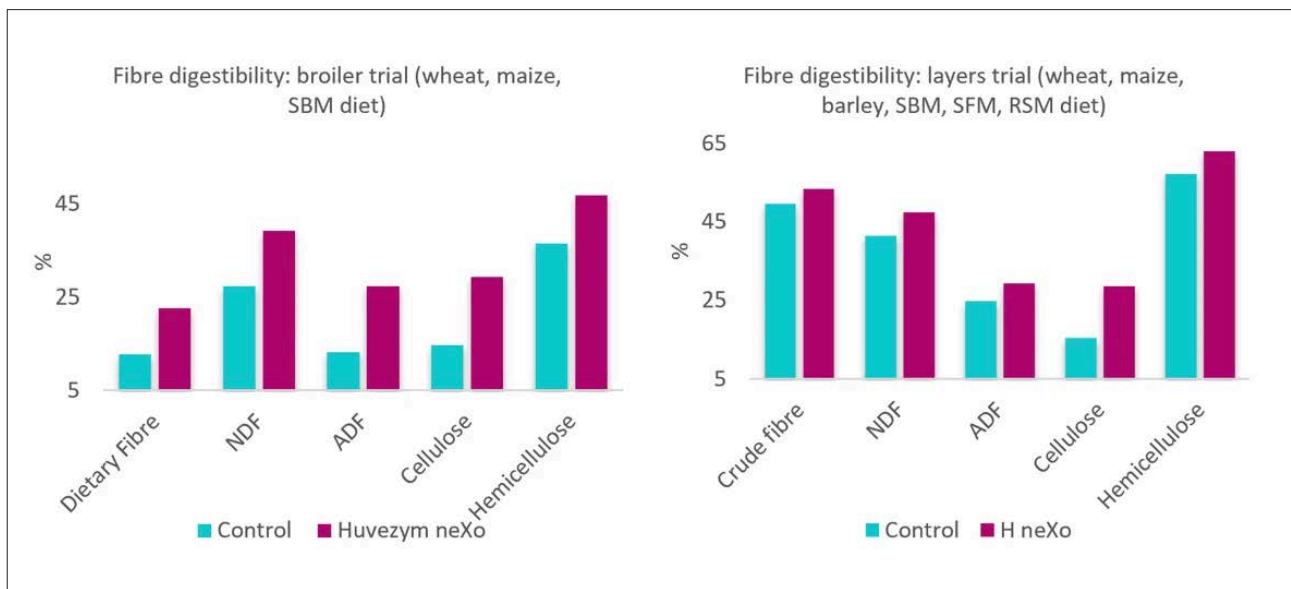


Figure 1. Effect of Huvezym neXo on fibre degradation: digestibility trials of broilers and layers fed complex fibre diets NDF = neutral detergent fibre, ADF = acid detergent fibre

Huvezym neXo hits the NSPase market as the first innovative nutritional tool in decades. Supported by state-of-the-art science, Huvezym neXo highlights the importance of cellulose degrading enzymes when fibre composition shifts to more complex NSPs. The two cellulases present in Huvezym neXo: 1,4-beta-glucanase and xyloglucanase (the only labelled xyloglucanase among feed enzymes), combined with a highly efficient xylanase, ensure optimal fibre degradation. This unique combination allows the animal to unlock the nutritional value of the fibre in their diet, and enables the nutritionist to formulate more cost effective and high-performing diets.

Why use Huvezym neXo?

Huvezym neXo is now registered in the EU for use in all swine and poultry species.

Market experience gathered from customers outside EU, as well as customer trials within the EU and extensive Huvepharma research validates Huvezym neXo as a unique nutritional tool for complex fibre challenges. Monogastric animals take advantage of the enzymatic breakdown of anti-nutritional factors and turn it into improved performance or to equivalent performance at lower feed costs.

The results shown in Figures 2 and 3 summarise performance improvements compared to a control diet in terms of final body weight and feed conversion parameters in broilers and piglets. Figure 2 shows results from four broiler grow-out trials, each using a different diet with a different level of fibre complexity (level of soluble NSPs, degree of polymerisation of arabinoxylan). Figure 3 shows the results of five piglet trials from weaning to approximately 35kg, each using a different diet with a different level of fibre complexity (level of soluble NSPs, degree of polymerisation).

In both represented species, as the level of soluble NSPs in the diet increases (wheat/barley) or as the degree of polymerisation increases (maize diets), the magnitude of the effect of Huvezym neXo also increases. This supports the described mode of action and opens the door to various reformulation strategies, including the use of alternative raw materials or reformulating diets at a lower cost while maintaining performance.

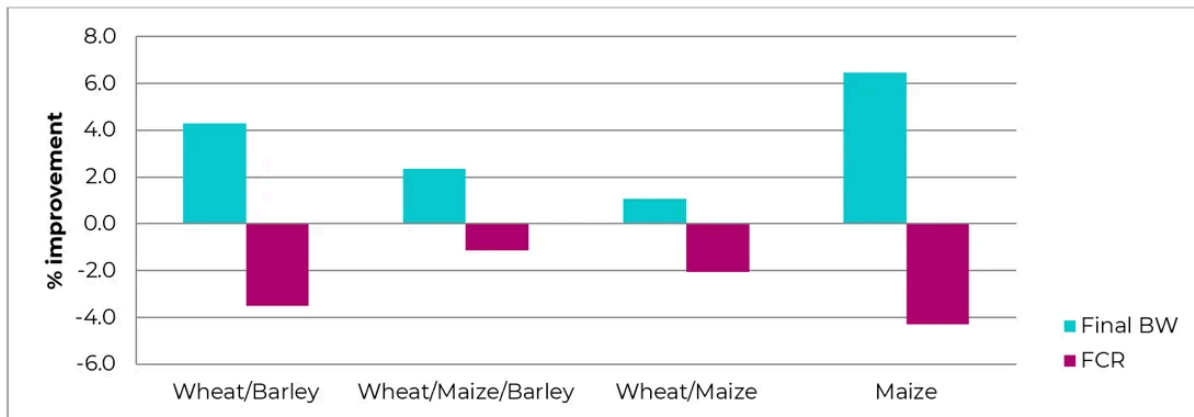


Figure 2. Performance improvements compared to a control group in terms of final body weight (BW) and feed conversion rate (FCR) in four broiler trials each using a different diet

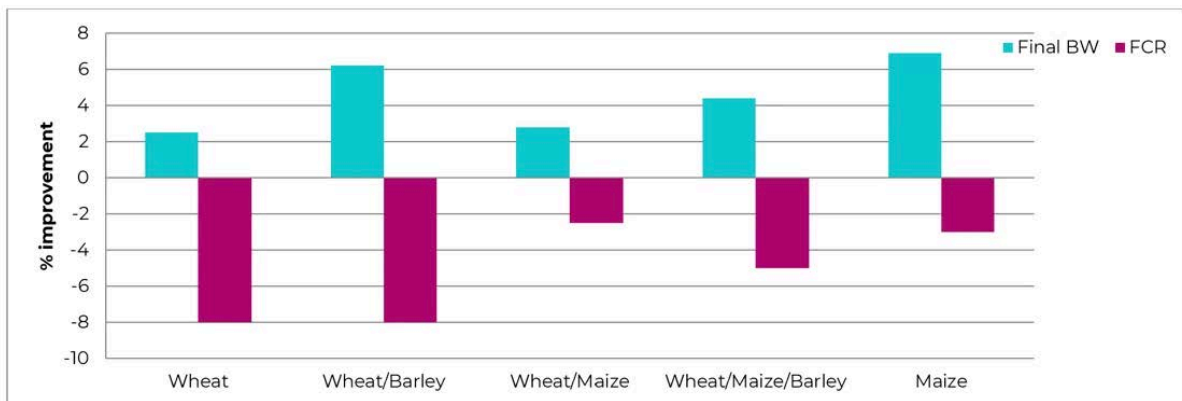


Figure 3. Performance improvements compared to a control group in terms of final body weight (BW) and feed conversion rate (FCR) in five piglet trials each using a different diet

Conclusion: Huvezym neXo the NEW nutritional tool for optimal animal performance

Huvezym neXo is a validated nutritional tool to enable animals to get the most out of fibre, especially when complex fibre is part of the diet formulation. Its efficiency is reflected in improved animal performance and a healthier gut.

In addition, Huvezym neXo is a tool for more cost-effective feed formulation, allowing the use of alternative feedstuffs without compromising animal performance.¹

¹ Due to the high arabinoxylan polymerisation degree of maize, it is considered that feeds formulated with >20% maize are classified as complex fibre diets.

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