



TECH TALK

Unlocking Growth Potential in Swine Production

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Elanco

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The Challenge: Pre-Weaning Mortality (PWM)

The pork industry faces significant profit losses due to high piglet pre-weaning mortality (PWM), which can account for 10-20% of all live-born piglets.¹ Approximately 80% of these deaths occur within the first 72 hours after birth, largely due to challenges with adaptation and early development.² Birth weight (BW) is the most common indicator used to assess a piglet's likelihood of surviving to weaning. However, research indicates that lighter piglets that remain close to the average litter BW still have the potential to experience compensatory growth in later stages of life.¹

Optimizing the Nursery Phase

The post-weaning nursery period represents a high-impact opportunity to influence lifetime performance. By enhancing the diet of newly weaned nursery piglets, producers can improve their ability to gain weight and create efficient feed conversion to prepare them for a stronger entry into the grow-finish phase.

To help optimize the nursery phase, Evosure, a novel, multi-component yeast ingredient has been developed specifically for swine. Unlike single-source yeast byproducts, Evosure combines yeast cell walls, yeast cultures and enzyme-hydrolyzed yeast, which work together to enhance nutrient retention, bind pathogenic bacteria and toxins and strengthen immune response. These physiological benefits translate into measurable performance improvements, including an increase in average daily gain (ADG), improved feed conversion efficiency and heavier exit weights, helping nursery pigs establish a strong foundation for subsequent growth stages.

Proven Performance: Research-Backed Results

In nine research trials, utilizing a total of 5,616 nursery pigs, Evosure was evaluated at inclusion levels ranging from 0.88 to 2.0/ton, with feeding durations primarily set at 14 days, and some extending to 17 or 23 days.³ Each trial maintained a balanced design, with equal numbers of piglets assigned to both control and Evosure groups, with group sizes varying from 216 to 432 piglets.

The trial data demonstrated that Evosure improved performance outcomes in newly weaned pigs, resulting in stronger growth and efficiency. Specifically, pigs receiving Evosure showed a 7.3% improvement in ADG and a 6.6% improvement in feed conversion, contributing to a 3.6% increase in end body weight. These combined benefits resulted in heavier pigs at 19 days post-weaning, indicating enhanced early stage growth and improved readiness for subsequent production phases.

How It Works: Functional Yeast Components

Evosure is formulated with functional components of yeast derived from yeast cell walls, enzyme-hydrolyzed yeast and yeast cultures, each contributing varying levels of key bioactive compounds. Yeast cell walls provide high levels of β -glucans and mannan oligosaccharides, along with lower levels of nucleotides, while enzyme-hydrolyzed yeast contributes moderate to high levels of mannan oligosaccharides and nucleotides but not β -glucans or yeast metabolites.

Yeast cultures, on the other hand, supply lower levels β -glucans and mannan oligosaccharides, along with higher levels of yeast metabolites and lower nucleotide content.

Functional components of yeast play distinct and complementary roles in supporting animal health and performance. β -glucans help activate the immune response, particularly when structured as β 1,3 and β 1,6, which act as immunopotentiators by stimulating macrophages, natural killer cells, T-cells, and B-cells, while also supporting liver function and binding toxins; however, simply increasing total β -glucans does not necessarily improve functionality and may overstimulate the system. Mannan oligosaccharides promote beneficial bacteria such as bifidobacteria and lactobacillus, inhibit harmful bacteria by binding pathogens to prevent colonization, and contribute additional toxin-binding capabilities. Nucleotides vary in functionality but can support intestinal mucosa growth, improve beneficial gut microflora, enhance energy storage and transfer, and support liver, immune, and feed intake functions, though they are typically found in higher levels in sow's milk and lower levels in feed ingredients. Yeast metabolites provide additional benefits through enzymes like protease and fumarase, which aid in protein digestion and amino acid metabolism, as well as organic acids such as glutamic acid that enhance palatability and feed intake, and compounds like glucosamine that support joint health.

In addition, Evosure works through a unique development process using enzyme hydrolysis rather than acid hydrolysis, allowing its functional components to deliver maximized performance. Single-source, byproduct yeasts of other processes do not contain the proper blend of functional components to maximize performance and are typically harvested using acid hydrolysis.

Resources

1. Tucker BS, Craig JR, Morrison RS, Smits RJ, Kirkwood RN. Piglet Viability: A Review of Identification and Pre-Weaning Management Strategies. *Animals (Basel)*. 2021 Oct 6;11(10):2902. doi: 10.3390/ani11102902. PMID: 34679923; PMCID: PMC8532860.
2. Tuchscherer M., Puppe B., Tuchscherer A., Tiemann U. Early identification of neonates at risk: Traits of newborn piglets with respect to survival. *Theriogenology*. 2000;54:371–388. doi: 10.1016/S0093-691X(00)00355-1.
3. Elanco Animal Health. Data on File.