



The Exposome:



FARMING PIGS FOR THE WORLD THEY ACTUALLY LIVE IN

~ BY JENNA MURRAY

WHAT IF PIG NUTRITION DIDN'T JUST REFLECT THE PIG'S BIOLOGY, BUT RATHER ITS ENTIRE JOURNEY?

Welcome to the world of the exposome, a powerful innovative concept that is forcing us to rethink how we look at and think about nutrition, health, and animal performance.



WHAT IS THE 'EXPOSOME'?

The exposome refers to the full picture of everything that an animal is exposed to throughout its life. Some of the aspects looked at when considering the exposome are:

- What it eats
- The air it breathes
- The temperatures it endures
- The stress it experiences
- Even the conditions in the uterus prior to birth

All of these experiences have a cumulative effect on how the individual pig's body functions, what nutrients are absorbed, the growth curve it follows, how disease resistant it is. Looking at the impact of everything, it can be said that the exposome influences how the animal becomes who it is.

WHY AND HOW DOES THIS AFFECT FARMERS?

Pigs have been fed according to a 'standard' based on their age, weight and production status (gestating, lactating or growing). But pigs don't live in a 'standard' world.

A pig raised in a barn with good air flow in the winter will not have the same nutritional requirement as one that is struggling with heat stress in the summer months. Another example is a piglet born to a sow that experienced some form of stress, be it heat, sickness or social stress, during gestation may require some extra nutritional support later in life to ensure optimal performance.

This is where the exposome becomes useful and intriguing.

Understanding and quantifying the physiological and environmental stresses experienced by the pig, we can begin modifying their diets in real time to match what their bodies actually need.

FARMING FURTHER: FEEDING THE WHOLE EXPERIENCE

This strategy is known as adaptive nutrition, and it is the next step in sustainable, precision livestock production. Meaning:

- Adjusting feed composition in response to environmental stressors.
- Improving immune support during vaccination or disease challenges.
- Supplementing micronutrients such as vitamin D during rainy and overcast periods.
- Using diagnostic tools to uncover deficiencies before they impact growth.

WHY DOES 'FEEDING THE EXPOSOME' MATTER?

- feed efficiency by only supplying the necessary nutrients.
- Reduces waste and environmental impact.
- Enhances animal welfare and health.
- Maximizes genetic potential.

In short, it helps us 'farm further', beyond the average, beyond the standard, into a future where every pig gets what it needs to truly thrive.