



Season 6, Episode 10: Defining Resiliency and the Research Driving Swine Health Forward

Dr. Jenelle Dunkelberger, Global Health & Behavior Platform Lead at Topigs Norsvin, and Dr. Lucina Galina, Technical Project Director at PIC share how they are working to improve resiliency in pigs, and how swine producers can work on improving resiliency in their herds.

Background

New technologies are emerging in the swine industry to resolve emerging issues, such as resiliency. Drs. Jenelle Dunkelberger and Lucina Galina shared their advancements towards increasing resiliency at the 2025 International Conference on Pig Livability in November 2025. Both emphasized that resiliency needs to be prioritized, though it will take time to see widespread results.

Breeding Strategies for Resiliency

There are two primary approaches to genetic improvement for resiliency: traditional breeding and gene editing. Traditional breeding is the concept of strategically selecting pigs with favorable genes that are present in the population and increasing those traits over generations. Gene editing modifies genes within the pig. Therefore, introducing specific traits or disease resistance can be achieved through gene editing. Gene editing is faster, but traditional breeding remains a practical tool for producers.

Challenges in Enhancing Resiliency

A significant challenge for data collection in this field is measurement. Pigs raised in Specific Pathogen Free (SPF) environments are not exposed to the real-world stressors needed to evaluate their performance under pressure. Another challenge is the lack of data on sow removals. The leading causes of sow removals include sudden death, feet and leg problems, and vaginal or uterine prolapse. Improved data collection on these issues could help identify genetic patterns that enhance sow health.

Technological Advancements

Technology is being developed to detect and score skeletal conditions such as osteochondrosis, enabling accurate, timely evaluation. Previously, evaluation was difficult and time-consuming, but there is hope to continue advancing the technology to expand its scope and examine other regions of the pig's skeleton.

Takeaways

Livability is not the only trait the swine industry should seek to improve. Improving resiliency allows pigs not only to survive but to thrive. Traditional breeding provides producers with the opportunity to improve their herd by identifying favorable resiliency traits and leveraging them. The use of technology can be beneficial in controlling the spread of diseases like PRRS and preventing mutations of the disease. While technology is emerging for this, progress takes time. Once the technology is sound, there will be an opportunity to improve pig health and disease resistance vastly.

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