

# LEADERSHIP LENS PART 1 — FROM INGREDIENTS TO HIGH-QUALITY PRODUCT

## How Precise Nutrient Delivery Drives Successful Pork Production

In the past 10 to 20 years, the pork industry has successfully integrated technology and improved data collection by leaps and bounds.

During the same period, consumer awareness and influence has grown exponentially, as producers have come to recognize the importance of capturing the protein portion of the plate, from both a meat quality and a profitability standpoint.

So how is the ability to collect the production data helping us meet the demand for high-quality product while running pork operations at profitable levels? What impact does speed of information and knowledge play in expanding possible nutritional goals for pigs, and how can that help pig producers be more responsive to changing market conditions?

For insight into the new digital nutrition space, we posed these and other questions to Chad Pilcher, PhD, swine nutritionist at Provimi and John Patience, PhD, professor of Applied Swine Nutrition in the Department of Animal Science at Iowa State University.

“As flooded as we are by data and information, it does no good unless it’s driving successful production,” says Pilcher. “Our goal is to turn data into decisions.”

By measuring key nutrients and energy components via near infrared imaging (NIR) and wet chemistry, swine nutritionists at Provimi are able to capture the right data, then quickly visualize, customize and summarize using the Cargill Nutrition Cloud to return data to producers, nutrition professionals and formulation systems.

By matching key data metrics to the production

goals, marketing intentions and industry challenges, what once was dry data is now actionable knowledge.

“We have developed this digital nutrition space to help pig producers and nutrition professionals make faster, more informed decisions on pig nutrient supply and demand to, ultimately, optimize pork system profit,” Pilcher says. “Rather than just having historical data, we are working toward real-time analysis that will enable producers to be more nimble in the face of fast-changing market conditions.”

In addition to helping with decisions like choosing suppliers (see graphic), another example of where data has helped to optimize production and meet the biological demands of pigs is the need to focus on age versus weight in nursery diets.

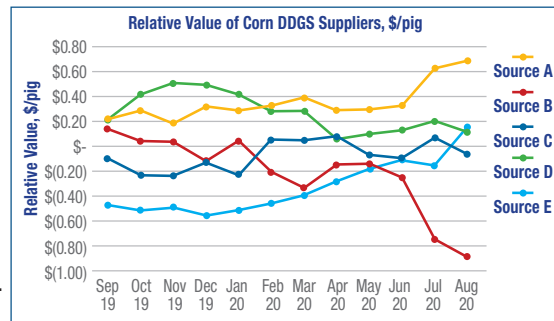
“We choose to focus more on the age and developmental stage of the pig rather than the traditional weight-based model,” Pilcher says. “Piglets may vary in weight at a certain age, but biologically, they only develop the ability to digest and absorb nutrients, as they age. This is part of why the transition from milk to solid feed can be so challenging. If the pig’s system hasn’t developed yet, it’s going to have problems digesting solids.”

“We are also learning that many of the ingredients we select for pig diets will affect the health of the pigs or at least, their susceptibility to disease,” says Patience. “We call these ‘functional properties’ of ingredients, meaning that, in addition to supplying nutrients to the pigs, ingredients also affect such things as

the ability to resist disease, as one example.”

Ingredients also play a role in meat quality, though some traits, such as fat, can be impacted more by nutritional supply than others.

“Increasingly, we see the need to understand how the interactions of amino acids among themselves will impact pig performance,” says Patience. “Failure to supply not only the right numbers, but the right balance of nutrients, will have an impact. For example, supplying excess energy relative to amino acids will slow growth and produce a fatter carcass.”



Not understanding the true variability of nutrient makeup by supplier can lead to dollars left on the table for producers.

“What we feed the pig will impact the taste and color of the resulting pork,” Patience explains. “However, to impact taste in any meaningful way, quite dramatic changes in diet composition are normally required. The quantity of the fat and the composition of the fat are much easier to impact than taste, although all of these are interrelated.”

Next up in the Leadership Lens Series: **“Measuring Tomorrow’s Success Today – How Picking the Right Suppliers and Ingredients Impacts the Bottom Line.”**

For more information on digital nutrition and Provimi’s age-based approach to optimal swine nutrition, visit [provimiUS.com](http://provimiUS.com).

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—Chad Pilcher,  
PhD, swine nutritionist