



What is ABC (acid binding capacity)

- Weaned piglets are not efficient in producing gastric hydrochloric acid (HCL) yet
- The little that they produce is neutralized in contact with highly buffering ingredients

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Buffering ingredients (meq/kg):

- Limestone: + 18 000
- Zinc oxide: + 18 000
- Di-cal: + 1400 meq
- Soybean meal: + 440

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Acidifying ingredients (meq/kg):

- Formic acid: -13 550
- Citric acid: -5600
- Ca Formate: + 2150 (32% Ca)

Takeway: The more the piglet can digest efficiently, the less substrats gets to the hind guts which can cause enteric diseases.

nutrition partners
FARMHOUSE

What's New in Swine Nutrition

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Good nutrition is a pillar of good swine production. At the 2026 Producer Meetings, Jean-Phillipe Martineau from Nutrition Partners presented on some recent research

findings and provided recommendations for possible adoption into on-farm practices.

Jean-Phillipe started his presentation with nutrition approaches for nursery pigs. With new genetics, requirements are changing, with piglets needing more protein to support growth. High concentrations of crude protein (CP) can result in undigested protein substrates entering the hind gut causing disruption in the microbiome, resulting in diarrhea and reduced growth performance. The advent of synthetic amino acids can reduce the inclusion of CP in nursery diets, mitigating some of the related issues, while still meeting amino acid requirements. He emphasized that lower protein content in early nursery diets is acceptable as slightly slower growth is a fair trade for good gut health.

Having completed research trials with feed formulations to meet upcoming regulations for zinc oxide (ZO), Work is in progress that has successfully developed rations that resulted in piglets out-performing others fed a diet containing zinc. One advantage of reducing zinc concentration in rations is the increased opportunity for digestion and absorption of other comparable minerals, specifically copper (Cu). This aligns well with new CFIA allowances for a maximum of 225 ppm of copper, which has been increased 2x from previous regulations. Additional research has shown that adding the maximum allowance of CuSO4 increased ADG, creating significant payback. Jean-Phillipe noted that care must be taken in the use of CuSO4 in place of the more expensive tribasic copper chloride (TBCC), as the sulfate can have negative interactions with vitamins.

Continuing the topic of essential nutrient provision, John-Phillipe highlighted research on injectable iron. In an effort to prevent piglet anemia to in turn encourage growth, he suggested providing two doses of injectable iron – 14% of 342 piglets given one dose were considered to anemic following hemoglobin analysis, versus only 1.2% of 338 piglets given 2 doses. They also saw a significant impact on finisher end weight, leading Jean-Phillipe to call the use of affordable iron injections in the farrowing room a 'no-brainer'. At the end of this study, they saw a payback of \$2.90/pig on fixed time and \$1.25/pig on fixed weight, a significant increase in revenue.

“Nutrition is ever evolving. Staying on top of new recommendations is an important part of managing performance and feed costs..”

Moving to enzymes, Jean-Phillipe described how the use of enzymes can further reduce the concentration of residual substrates in the hindgut. The enzyme phytase breaks down the anti-nutrient phytate that is found in plant matter, releasing phosphorus and increasing digestibility. This is currently the most popular enzyme out of the three discussed. He also touched on xylanase; which breaks down complex polysaccharides to increase energy release, and protease; which breaks down polypeptides, improves protein digestibility and reduces the concentration of anti-nutritional factors.

Research on enzymes has shown a possible savings of \$0.25/pig when enzymes were included in the ration. Jean-Phillipe also suggested the use of salinomycin towards the end of the nursery stage (12-30kg), as its activity as ionophore antibiotic and coccidiostat promotes growth, improves feed efficiency, and can help control some intestinal infections. A positive economic benefit of \$0.75/pig when providing salinomycin at 25 ppm. Consistent genetic improvements ensure nutritionists must stay on top of ensuring Pigs are being provided the necessary nutrients. In a study focusing on increased standardized ileal digestible (SID) lysine in rations during the late nursery stage, researchers found that while feeding high SID lysine content did cost more it resulted in a notable payback as well as reducing the incidence of ear necrosis, which can be attributed to reduced ear biting as the pigs were satiated.

Jean-Phillipe also covered some aspects of sow nutrition; explaining a study completed on two farms by Demeter Veterinary Services in Ontario (McClellan et al., 2025), noting that two-8mL injections of iron about 48h before farrowing resulted in a decrease in farrowing duration and fewer stillborns. This is of great interest as before the study commenced about 60% of sows were anemic, and anemic sows had lower caliper scores, had more stillborns, and were removed at a rate greater than their non-anemic counterparts. He also discussed the use of oxytocin peri-vulva for sows bred with post-cervical insemination; there was some improvement (about 1%) in both conception rate and farrowing rate when compared to a control group. Though the difference was slight, he still suggests this intervention as 1% makes a big difference over time, especially at a low treatment cost of an estimated \$0.20/sow/year. Peri-vulva administration of oxytocin is suggested above

mixing oxytocin into semen bottles as there is less chance for contamination or degradation of semen quality.

The use of a pre-farrow top dress allows for greater support of farrowing sows by provision of extra energy, specific fibres, laxatives, and calcium for muscle contractions. Research compared a standard feed to standard feed with a pre-farrow top dress – sows provided the pre-farrow top up had fewer stillborns. Comparing the cost of the diet to the profit from more piglets being weaned, Jean-Phillipe explained that the payback is well worth it, especially for older sows. He also noted that more research into the interaction between iron injection and top dress is needed to understand if the treatments work well together, or if only one is needed.

Moving to finisher nutrition, Jean-Phillipe focused on research highlighting non-starch polysaccharide (NSP) enzyme use, like what was done for nursery diets. He explained that use of enzymes could maintain performance by increasing the available net energy (NE) in the diet while reducing feed costs; ultimately, a net savings of \$1.25-\$2.20/per pig was seen. He suggested exploring the use of enzymes, specifically during summer months as... Further, he explained how new strains of hybrid rye can be used in finisher diets, with inclusion as high as 50% being acceptable without resulting in any loss of performance. He noted that rye inclusion would generally never be higher than 7-10%, but it is good to know that inclusion can be increased if necessary. Regarding iodine value (IV), Jean-Phillipe noted that some plants require a low IV product (IVP) for quality assurance. Low IVP pork is desirable as the belly fat is firmer and whiter, making it more desirable to consumers in domestic and foreign markets.

