



SWINE SOLUTIONS

Working to wean more pigs per sow

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We live in a fascinating time in agriculture, and the swine industry is no exception. While we have faced many challenges across all facets of the industry, we have continued to see advancements in genetics, husbandry practices, nutrition and health, leading to a relative surge in productivity. On our farm and many others, we have doubled the annual piglet production per sow from our sow herds in just three generations of our families' raising pigs, even as the number of resources to achieve this has continued to decline.

However, these advancements have not come without a cost. We produce far more pork per sow than we did in our grandparents' time. Yet, we observe a concerning upwards trend in piglet and sow attrition in the farrowing house, namely in stillborn rates, pre-wean mortality and sow mortality. Our industry advances in all areas, from genetics to husbandry, from health to nutrition. Through these changes, we must continue to re-educate ourselves on how to sufficiently care for our ever-changing animals while not forgetting important principles.

Let's take a step into the farrowing house of the sow farm. In this crucial part of the farm, we truly set a precedent for how our operation will perform, both physically and financially. Table 1 displays some benchmarking numbers from PigChamp's 2020 report. The challenge with reading this report is that each parameter is divided as top 10%, median or bottom 10%. Top just means highest numerical value, not the best, and the inverse is true for bottom. With that in mind, here are the top 10%, median and bottom 10% production numbers from PigChamp's 2020 benchmarking report:

Table 1: PigChamp's 2020 Benchmarking Report (abridged)

	Top 10%	Median	Bottom 10%
Total born	16.2	15	13.73
Born alive	14.5	13.5	12.39
Stillborn	0.66	1.09	1.61
Pre-wean mortality	9.56%	14.3%	20.9%

Taking the sum of the stillborn and pre-wean mortality numbers demonstrates that we are losing between 13.5–32.6% of piglets that were alive at the onset of the farrowing process until weaning. Where does your farm fall in this range? This is a huge area of opportunity, so I would like to discuss some available tools to help improve piglet survivability on your farm.

Day one pig care

Hands-on care in the farrowing house is by far the best means of improving the farrowing outcome and subsequent health of both the sow and her litter on the farm. Many farms have implemented 24-hour care protocols with great success, and the labor cost is quickly offset by improved piglet survivability. Remember that the overnight crew is there only for piglet care; if you give them too many jobs, your benefits will quickly disappear. Use good hygiene and lubrication when assisting with deliveries; a clean OB sleeve for each sow is far less costly than transmitting pathogens like *Streptococcus suis* through the farrowing house. Tracking farrowing numbers on individual sow cards helps to monitor how she is progressing through the farrowing process. Knowing the indications of a sow having trouble with her delivery is crucial to succeeding. Being around during the delivery also allows for the team to dry the piglets, whether with a towel or a drying agent, and to make sure they are getting the critically important milk colostrum into their bellies, through a combination of split-suckling techniques and close monitoring of the piglets nursing. I cannot overstate how much good care and attention to these details will help both the sow and the piglets to get started with their time together in the farrowing crate.

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Pre-farrowing feeding strategies

Modern facilities continue to look for ways to make the workload as efficient as possible, so more time can be spent observing and caring for our animals. There are a lot of philosophies on feeding sows prior to farrowing, but new data suggests that there are clear benefits to certain feeding strategies over others in the pre-farrowing window. In the 2018 paper, "Impact of sow energy status during farrowing on farrowing kinetics, frequency of stillborn piglets, and farrowing assistance," Danish authors Feyera et al. suggested that at least three daily meals might improve the energy status of the sow during the farrowing process, improving the sow's ability to farrow and reducing her need for assistance and risk of developing stillborns during the process. Anecdotally, we have seen similar improvements on farms moving from a single daily feeding to up to four smaller feedings but keeping the total amount fed per day the same.

Metabolic control strategies

We know that calcium is required for muscle contraction, which becomes essential during the farrowing process. Think about blood calcium as the hydraulic fluid of the body. In contrast, oxytocin is a signaling hormone that would be the equivalent of pulling a lever or pushing a foot pedal to operate your farm's hydraulic equipment. It does not matter how hard or fast you push it; if your equipment is low on hydraulic fluid, the equipment just will not move as fast. This is very much like how oxytocin and blood calcium interact in the body. The challenge is getting the calcium from the feed in the gut into the body's stockpile in the bone and then mobilizing the stockpile to be useable in the bloodstream when the need arises.

Our colleagues in the dairy industry have known this for some time. I remember when I was in practice, we would often get called out late at night to administer intravenous calcium gluconate to a "down cow." Apart from delivering a live calf, it was one of the most instantly gratifying calls one could take, since the cow would literally go from looking to be on death's doorstep to once again standing and chewing her cud once the calcium had been adequately administered. The nutrition teams caught wind of this and realized that by feeding a dietary cation-anion difference (DCAD) diet, they could acidify the cow's bloodstream, which would trigger a release of bone-bound calcium into the bloodstream for the cow to utilize. Once the dairies I worked with started getting on board with this, my number of late evening calls declined.

In sows, low blood calcium concentration could result in prolonged farrowing, tetany, recumbency, posterior paralysis and sudden death, all of which may increase the rate of piglet mortality and unplanned culling in a sow herd. As mentioned above, it is not a problem with getting enough calcium into them during gestation, but rather getting their bodies to sufficiently utilize the calcium stores we have given them through good feeding practices. Giving intravenous calcium gluconate is not as fun for sows as dairy cows, and intramuscular injections will not get them to where they need to be in time to do any good. As a result, we saw a need to develop a different strategy to implement a DCAD diet-style strategy onto sow farms to aid in this challenge.

Through a series of trials, we developed an encapsulated calcium chloride product, [TransRite Sow Ultra](#), that can be fed as a top-dress to sows prior to farrowing. It is palatable for the sow and will not reduce feed intake if fed correctly. Through repeated urinalysis of sows consuming the product, we have demonstrated that two to three days of providing TransRite Sow Ultra was indeed able to induce a mild, compensatory metabolic acidosis. Finally, ongoing on-farm trials have demonstrated that providing this metabolic alteration can indeed reduce stillborn pigs and, in some cases, shorten the duration of farrowing.

TransRite Sow Ultra is a specially formulated top-dress designed to provide the proper cation-anion balance in sows due to farrow. Adjusting metabolic pH prior to farrowing with TransRite Sow Ultra has been shown to address farrowing stress and farrowing duration, lower stillborn rates, and maximize feed intake post-farrowing since sows have a shorter post-partum recovery time. As such, TransRite Sow Ultra has been demonstrated to be a valuable tool to implement in the farrowing house to aid in improving day one piglet care and reducing labor needs during the farrowing process.