Give your piglets a good start post weaning by keeping them hydrated

Reducing the impact of stress at weaning is essential to maintain the performance your pigs. A new environment and the initial separation from the sow and the littermates usually leads to the well known 'Post-Wean Lag'. This is where changes in the weaned pigs' intestinal biochemistry can contribute to diarrhea, weight loss, a decline in appetite and reduced growth. The key to avoiding this problem is to encourage pigs to drink early.

Indeed, water is probably the first and most important nutrient for animals, and different studies have shown that piglets will eat more feed if they consume enough water. Water intake will depend on different factors such as room and water temperature, water quality, accessibility and pressure of the drinking system. Right after weaning, both water and feed intake are usually low, especially when compared to the amount of water that was supplied by the sow through milk right before weaning.

Pig feed intake appears to be driven by the amount of water they drink (Quiles, 2006; Meiszberg *et al.*, 2009; Kruse *et al.*, 2011) and not the opposite. About 75% of water is consumed just before, during or after a meal (Quiles, 2006; Meiszberg *et al.*, 2009). Meiszberg *et al.* (2009) have also observed that in growing and finishing pigs, accessing more often to water supply is associated with a higher feed intake and improved growth. García-Manzanilla and Gasa (2006) have observed that piglets consume about 4 times more water than feed in the first week post-weaning. This ratio is reduced to 3.2:1 on the second week, 3:1 on the third week, and 2.8:1 one month after weaning.

Research tells us that, provided that piglets have proper access to fresh and good quality water, they will usually start drinking about 3-5 hours post-weaning. But, it takes up to 30-35 hours for 85 to 90% of the pigs to start drinking, and more than 1 week to rebalance fluid intake post-weaning. As far as feed intake is concerned, about half of the piglets start eating in the first 4 hours post-weaning but it takes more than a day to see 90% of them consuming feed (Pluske *et al.* 2003; Wilcock *et al.* 2009).

With this challenge in mind, Tonisity developed Tonisity PxW WeanBetter (PxW), a follow-on solution to Tonisity Px. Diluted in water and fed through water lines, PxW works by targeting the enterocytes, intestinal cells in the small intestine, which act as a gateway for absorbing nutrients into the bloodstream. Studies have shown that pigs are attracted to the smell of the palatable solution, consisting of amino acids, sugars, prebiotics and electrolytes, that deliver hydration and appetite stimulation during this stressful weaning transition.

In a recent trial with 848 pigs weaned at an average weight of 5.9 kg, water treated with PxW was consumed three times as much as the control over a 5-day period (see Table 1). Those piglets had also received Tonisity Px in the farrowing house. Average daily intake per pig was 0.253 litres in the control group and 0.799 in the PxW group. The 5-day cumulative intake of the control group was 1.26 litres and 3.99 litres in the PxW, representing 4.3% and 13.5% of body weight as water intake respectively. In this trial, it was also observed that 76% of the fall-behind pigs after 21 days post arrival came from the control side.

Table 1: Water intake increase with Tonisity PxW (trial 1)

	Control	Tonisity PxW	Difference (%)
Average daily intake (L/pig)	0.253	0.799	216%
% of body weight as water intake	4.30%	13.50%	216%

In a second trial involving 5,000 pigs (which had not received Tonisity Px in the farrowing house) weighing on average 5.7 kg on arrival, pigs drank 1.5 times more water than in the control group. Average daily intake per pig was 0.678 litres in the control group and 0.987 in the PxW group, leading to 11.9% and 17.3% of body weight as water intake for the respective groups. This also resulted in a 41% reduction in fall behinds and a 54% drop in mortality (see Table 2).

Table 2: Change in performance parameters with Tonisity PxW (trial 2)

	Control	Tonisity PxW	Difference (%)
Average daily intake (L/pig)	0.678	0.987	46%
% of body weight as water intake	11.90%	17.30%	46%
% of fall behinds 3 weeks after arrival	7.20%	4.28%	- 41%
% mortality 3 weeks after arrival	1.12%	0.52%	- 54%

Producers can see positive results almost immediately, by reading water meters, and evaluating initial fluid intake of the solution. This early intervention post-weaning helps stimulate water intake, as a result piglets will better cope with stress and this decreases transition time to feed. Tonisity PxW can also be given to pigs before transport, where pigs are exposed to various stress factors like space restrictions, travel conditions and transit time. It helps them cope with this challenging situation and improves their hydration.

Take away points:

- **To get pigs eating quicker and gaining weight faster after weaning, water intake is the key**
- **It can take up to 35 hours for majority of the pigs to start drinking after weaning, and more than 1 week to rebalance fluid intake post-weaning**
- **Tonisity PxW significantly improves water intake after weaning**
- **Tonisity PxW is easy to mix, apply, and there are no issues with water line residue or flow**
- **Results can be measured immediately with water meters**
- **When pigs get Tonisity Px in the farrowing house, the consumption of water treated with Tonisity PxW is even more impressive**
- **Initial trials indicate that Tonisity PxW can help reducing the fall-behinds and mortality in nursery**