



# The Power of Tonistry Px and How it can Change the Current Milk Replacer Model

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## Background

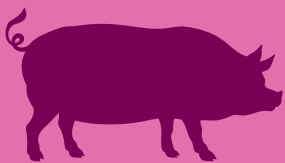
Modern sows are producing increasingly larger litters these days, sometimes more than 40 piglets born per sow per year.

This is made possible thanks to a number of factors including improved swine genetics, enhanced nutrition as well as better health and managing practices. However, the pig industry is still struggling to properly

manage these large litters and give them a good start. For instance, some sows may not be able to achieve sufficient milk production levels due to common health issues like 'mastitis', reduced

appetite or dehydration during the hotter summer months. Secondly, it is often a 'fight for survival' when some sows do not have enough functioning teats to feed their growing litters. This usually leads to increased mortality and fall behinds, especially amongst the weaker and smaller piglets. As a result, farm managers have been looking for solutions such as 'liquid milk replacer' to ensure that all piglets are receiving viable amounts of milk and are getting the best start to life.

More and more farms are considering the use of liquid milk replacers, however they are facing several challenges such as the need to use a suitable and expensive equipment to deliver the product, potential hygiene issues, and a relatively high cost per piglet.



**MORE THAN 40**  
piglets born per  
sow per year

# » Tonisity Px

## A real alternative to milk replacers

Tonisity Px, the first isotonic complementary feed for pigs that can be used as early as Day 2 of life, supplies all the necessary nutrients required for optimum enterocyte functionality (enterocytes are epithelial cells that line the villi of the small intestine; they are the entry points along the small intestine that readily absorb amino acids, simple sugars and fatty acids before they are transferred into the bloodstream).

The isotonic composition of Tonisity Px supports the metabolic functionality of the enterocyte cells and helps to feed the cells from within. By supporting these enterocytes, Tonisity Px gives pigs an advantage earlier in life and helps to improve piglet health and productivity leading to lower pre-weaning mortality and faster growth up to slaughter.

## Milk replacers and Tonisity Px

### 2 different concepts



Both Tonisity Px and Milk Replacers can be used in the first few weeks of a piglet's life. However, Tonisity Px differs from the milk replacers with regards to its calorie content and targeted functionality. In general, milk replacers work by providing extra calories to each feeding piglet whereas Tonisity Px operates by instead targeting the enterocytes, leading to better development of the piglet's small intestine and improved nutrient uptake. A recent scientific study demonstrated that better performances can be achieved with Tonisity Px, even if it brings only 1/10 the number of calories compared to its milk replacer counterpart.



# The Research

A study was conducted under the supervision of Dr. Carola van der Peet-Schwering at the Swine Innovation Centre (VIC Sterksel) at Wageningen University, Netherlands, on a total of 80 sows and their litters (n = 1240 piglets). These litters were randomly assigned to 4 different study groups; a control group with normal suckling only (C); a group receiving only 3% Tonisity Px solution 500ml/litter/day (Px); a group receiving both Tonisity Px and Milk Replacer in separate pans (Px + MR) and finally a group receiving only Milk Replacer (MR). All litters received their supplements from Days 2-8 post-birth, but the volume of milk replacer was increased daily from 100 to 1200 mL in agreement with the manufacturer's recommendations. Cross fostering was allowed within the first 24 hours within study groups, resulting in a standardized litter size of 15 piglets with similar average piglet weights in each group at Day 2. The amount of Tonisity Px or milk replacer consumed by each litter was measured daily. Creep feed was provided to all groups after day 9, and piglets from (Px) and (Px+MR) groups also received a combination of a 3% Px solution and gruel for 3 days before weaning and 3 days after weaning. All piglets were weighed at day 9, at weaning (26 days of age), and on days 7, 14 and 35 post-weaning.

At the end of this study, it was found that, because of the higher quantity offered, the average volume intake per piglet was highest in the (Px + MR) and (MR) groups, and approximately double when compared to the (Px) group. Secondly, because of different energy values of the solutions, it is important to note that the (Px) piglets received on average only 2.5 extra kcal/day compared to 40kcal/day in the (Px + MR) group and 45kcal/day in the (MR) group. In terms of performance, the average piglet weight at weaning in the control group was 7.09kg while piglets receiving the Tonisity Px solution had an average weight of 7.60kg; the piglets in the (Px + MR) and (MR) groups had an average weight of 7.33kg and 7.31kg, respectively.

After weaning, it was observed that Px-group pigs had a significantly higher feed intake in the first 7 days. From 7-35 days post-weaning, daily gain and feed intake in the Px and MR pigs were equal, and significantly higher than in the other study groups. At 35 days post-weaning, Px pigs were 1.5 kg heavier than Control pigs and 0.7 - 1.7 kg heavier than pigs in either of the MR groups (P < 0.001).



**Average piglet weight at weaning**





Therefore, despite smaller volumes of Tonisity Px being distributed compared to the Milk Replacer products, the Px group actually performed better than the MR

group. This supports the fact that Tonisity Px can lead to better absorption of nutrients overall despite yielding a lower calorie intake than their Milk Replacer counterparts.

The key message from this scientific study, and other field trials performed since then, is that piglets receiving Tonisity Px prior to weaning perform better than those litters receiving a Milk Replacer on its own or in conjunction with Tonisity Px. Also, these studies show that the usage of Tonisity Px results in increased weight gain during the post-weaning phase, and the advantage remains visible up to slaughter.

This is remarkable considering that Tonisity Px intake is much lower than that of a milk replacer, and the fact that the energy contribution of Tonisity Px is only 1/10 the calories of a milk replacer. This can be explained by the enterotrophic effects of Tonisity Px's isotonic formula, which leads to better absorption of available nutrients. As a company, Tonisity is paving the way in animal health nutrition by successfully shining a light on the importance of the 'enterocytes' and how feeding these cells alone can have a huge impact on the overall health and performance of young animals.

## Mixing Instructions

Tonisity  
Px Powder



Fresh  
Water



Tonisity Px Solution



Tonisity Px comes in a powder format that mixes easily with water and remains in suspension when used in a pan. Tonisity Px does not require to use warm water or costly equipment and therefore fits conveniently into all farm management systems. What's more with a taste profile pigs can't resist, it ensures a better hygiene and provides the hydration and intestinal support needed for a fast, healthy start. Additionally, Tonisity Px reduces stress and facilitates a faster transition to solid feed. Piglet growth is encouraged with positive effects up to slaughter. Last but not least, the cost per piglet is lower with Tonisity Px when compared to a milk replacer, which results in a better return on investment for the producer.

**For more information or to order Tonisity Px:**

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**Tonisity Px**