Tech UPDATE

Tonisity Px

Tonisity Px™ for Neonatal Piglets: Reduced Preweaning Mortality and Faster Growth

Preweaning mortality is one of the most costly productivity threats faced by swine producers, capable of eroding the overall productivity and profit potential of an operation. Thus, producers and veterinarians typically welcome any cost-effective management strategy that might help limit preweaning mortality in their herds, especially when no additional pharmaceuticals or antibiotics are involved. Tonisity Px™ is an innovative new technology that has shown promise as a non-drug approach for reducing preweaning mortality.

Tonisity Px™

Tonisity Px™ is the first isotonic protein drink for pigs, representing a novel, cost-effective breakthrough technology developed exclusively for swine that can dramatically elevate gut function and thereby help boost herd health and productivity. Tonisity Px is a highly palatable, readily consumed, isotonic solution of amino acids, electrolytes, and micronutrients that helps hydrate and encourage the development of a high-functioning intestinal system, especially the duodenum. Specifically, Tonisity Px nourishes enterocytes and has been shown to increase villi height[2] (taller villi absorb more nutrients/fluids).

Tonisity Px is a powder designed for mixing with water to create a 3% solution. Small amounts can then be offered (in a pan or mixed with feed) to neonatal and/or weaning-age pigs, gestating sows, or pigs of any age or class whenever stress or production milestones might typically pose health or performance set-backs.

Summary

- A university research study investigated the effects of Tonisity Px supplementation of nursing piglets on preweaning mortality and post-weaning growth performance.[1]
- Preweaning mortality fell 31.8% ($P = 0.029$) for piglets that received Tonisity Px for 7 days beginning at 2 days of age, and odds of survival were 1.55-times higher for supplemented piglets compared to controls.
- Piglets supplemented with Tonisity Px also grew faster than controls, improving ADG and net weight gain by more than 10% ($P \leq 0.015$) vs controls from 2 days of age through 20 days post-weaning.

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Experiment Design

The study involved 70 PIC sows and their litters (931 piglets) housed at a 7200-sow, farrow-to-finish operation in Iowa (farm negative for PRRS). Sows and litters were randomly assigned to 2 treatment groups:

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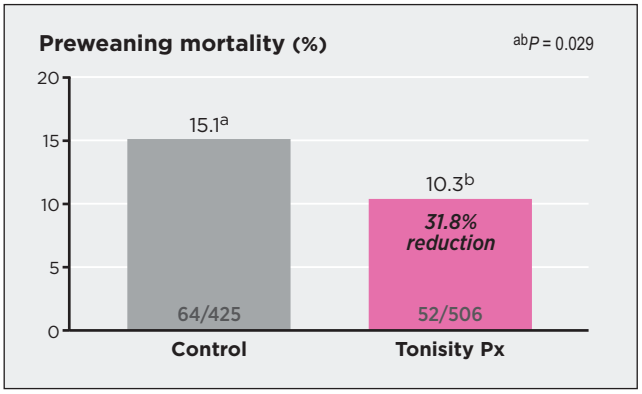

FIGURE 1: Preweaning mortality of piglets (2 to approximately 19 days of age).

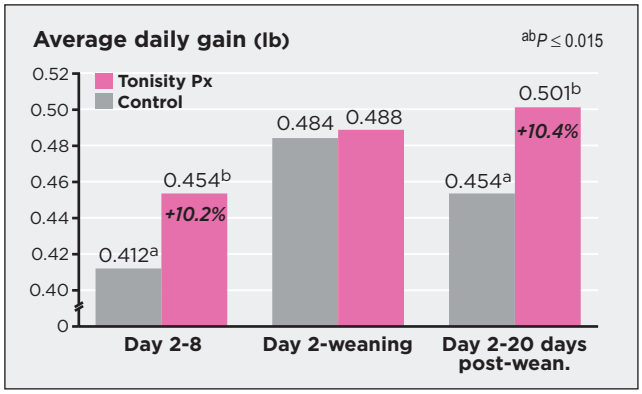

FIGURE 2: ADG from 2 days of age to various weigh dates (least squares means).

- Tonisity Px — Litters supplemented with 500 mL/day of Tonisity Px 3% solution for days 2 to 8 of age, offered in an open pan;
- Controls — no supplementation.

Piglets were individually weighed at 2 and 8 days of age, at weaning (average 19 days of age, range 15-22), and at ~20 days post-weaning (range 15-20 days post-weaning). Average daily gain (ADG) was calculated at all time points using the actual days of age at weighing. Piglets were monitored daily for death losses. Collected data regarding mortality, body weight (BW), and ADG were statistically analyzed by appropriate standard methods using each pig as an experimental unit. Significance between treatments was declared at $P \leq 0.05$.

RESULTS

Preweaning mortality was greatly reduced for neonatal piglets supplemented with Tonisity Px for 7 days. Results summarized in Figure 1 indicate a significant 31.8% ($P = 0.029$) reduction in preweaning death losses for the Tonisity Px group compared to controls, and the odds of survival in the Tonisity Px group were 1.55-times higher than that for controls. Piglets supplemented with Tonisity Px also generated significantly ($P \leq 0.006$) heavier BW than controls by 8 days of age and at 20 days post-weaning. As a result, ADG was improved over 10% ($P \leq 0.015$) for the Tonisity Px group at these 2 weigh dates (Figure 2). Over the entire study (day 2 to 20 days post-weaning), Tonisity Px piglets produced 10.7% (1.75 lb/hd; ($P = 0.006$) additional net weight gain vs controls (Figure 3).

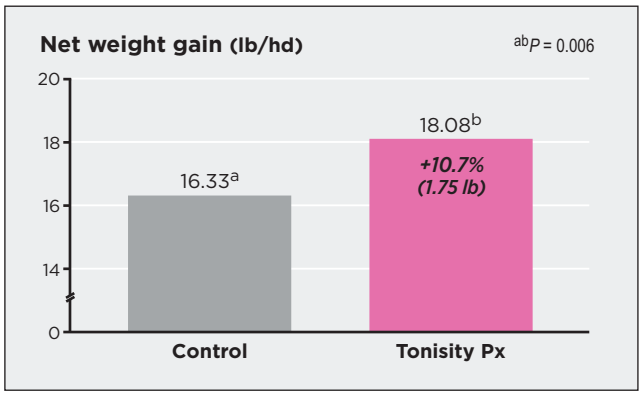

FIGURE 3: Net weight gain from 2 days of age to 20 days post-weaning (least squares means).

CONCLUSIONS

Early-life supplementation of neonatal piglets with Tonisity Px for 1 week helped significantly reduce preweaning mortality while simultaneously boosting growth performance through 20 days post-weaning. These benefits were achieved at a large commercial farrow-to-finish operation in Iowa without involving use of any additional pharmaceuticals or antibiotics. Tonisity Px™ clearly showed promise as a non-drug strategy for reducing preweaning mortality and thus optimizing long-term profit potential.

REFERENCES

1. Data on file, Study Report TON-USA-034, Tonisity Int. Ltd.
2. Firth AM, Cano GL, Alujas AM. Effect of Tonisity Px™ administration on intestinal morphology. *Am Assoc Swine Vet* 2017; poster presentation.

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