

# Tech UPDATE

Tonistry Px

## Effects of Tonistry Px™ on Pigs Reared in Facilities with Background PRRS Infection

Swine veterinarians and producers are well aware that porcine reproductive and respiratory syndrome (PRRS) poses a major threat to profitable pork production. Even with vaccination, disease breaks can occur that severely disrupt herd health and performance, or background infection can linger and pose a long-term concern. Tonistry Px is an innovative new technology that can help support optimal nutrition and health under such conditions and thereby moderate disease impacts. Tonistry Px is the first isotonic protein drink for pigs, representing a novel, cost-effective breakthrough technology that can dramatically elevate gut function and help boost herd health and productivity.

A research study investigated the effects of Tonistry Px supplementation on the survival of nursing piglets and post-weaning nursery pigs reared on farms with a background PRRS infection.<sup>1</sup>

### EXPERIMENT DESIGN

The study involved 876 sows at a 14,000-sow commercial farrowing farm that was recovering from a serious PRRS outbreak (southern US location). Sows were randomly assigned to 1 of 2 treatment groups: Tonistry Px (n=480) or untreated control (n=396). Treatments were administered to each sow's litter. Sows were farrowed in mid-June in 10 farrowing rooms. Piglets were weaned at approximately 17 days of age (range 14-20), and transported 16 to 18 hours to a commercial wean-finish facility in Iowa.

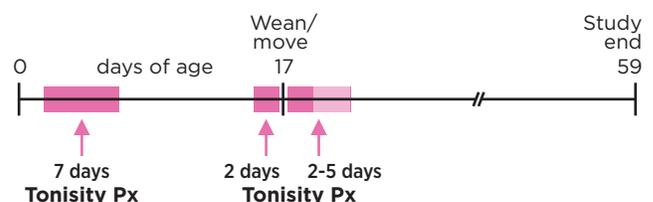
Litters born to sows in their respective treatment groups received the following supplementation programs:

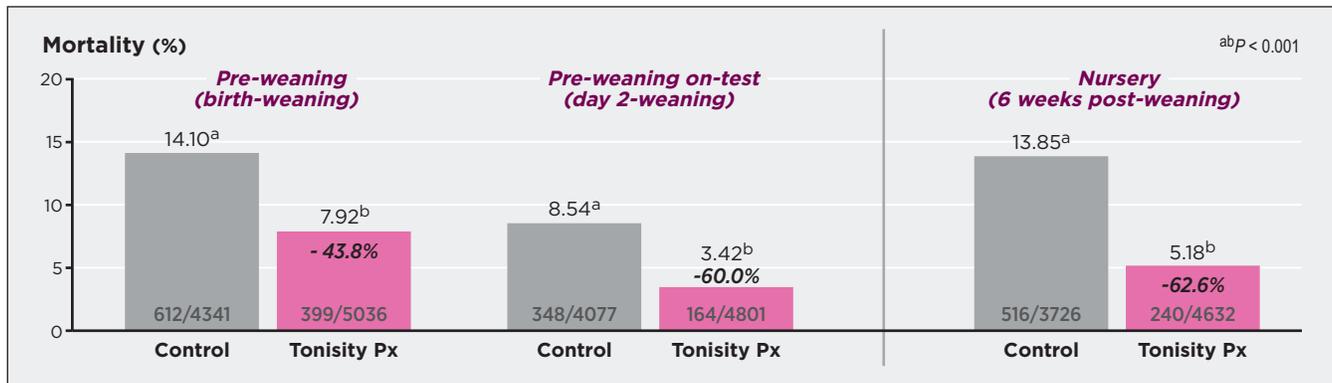
### KEY TAKEAWAYS

- Tonistry Px significantly reduced both pre-weaning and 6-week nursery mortality by 60% or more compared to controls on farms with background PRRS infection.<sup>1</sup>
- Tonistry Px generated an overall net benefit of \$21,605, providing more than a 7-fold return on investment.

- **Tonistry Px** (5036 liveborn pigs) —
  - From 2 to 8 days of age, and for 2 days before weaning/transport, litters offered 500 mL/day of Tonistry Px 3% solution in an open pan;
  - At arrival, Tonistry Px 3% solution offered 3 times in first 4 hours at 1 gallon/50 pigs;
  - Day 2 in nursery, same rate offered twice;
  - Days 3-5 in nursery, only 'fall-behind' pigs offered Tonistry Px 'gruel', 42 lb/100 pigs;
- **Controls** (4341 liveborn pigs) —
  - No pre-weaning supplementation;
  - Days 1-5 in nursery, pigs offered conventional electrolyte solution/gruel; fall-behind pigs offered gruel through day 15.

Tonistry Px gruel mixture was made using 3 gallons of 3% solution combined with 18 lb of feed, mixed into an 'oatmeal' consistency (weighing 42 lb).





**FIGURE 1:** Pre-weaning and nursery mortality of pigs (weaning/transport at approximately 17 days of age).

Mortality data (collected daily pre-weaning and weekly post-weaning for 6 weeks) 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

Pre-weaning mortality was greatly reduced for PRRS-exposed neonatal piglets supplemented with Tonisity Px for 7 days. Results summarized in Figure 1 indicate a significant 43.8% ( $P < 0.001$ ) reduction in birth-to-weaning death losses for the Tonisity Px group compared to controls. Similarly, mortality during the actual on-test period (day 2-weaning) fell by 60.0% ( $P < 0.001$ ) in the Tonisity Px group relative to controls. Six-week nursery (post-weaning) mortality was also dramatically reduced by 62.6% ( $P < 0.001$ ) for pigs with background PRRS infection and supplemented with Tonisity Px compared to pigs offered a conventional electrolyte supplement (Figure 1).

An economic analysis of these mortality reductions (Table 1) identified substantial financial benefits for using Tonisity Px in the PRRS-positive environment. For the weaned-pig producer, an extra 246 surviving pigs from this herd would represent \$7,134 in additional income. Likewise for the wean-finish operator, the Tonisity Px program yielded 401 extra surviving feeder pigs, representing a potential value of \$18,045. The overall net benefit of the Tonisity Px program totaled \$21,605, providing more than a 7-fold return on investment.

## REFERENCES

1. Data on file, Study Report PRO-17-017, Tonisity Int. Ltd.

Tonisity PX is an isotonic nutritional supplement designed specifically for pigs. It is not a drug and it does not contain ingredients with drug-like properties. It is not intended to diagnose, treat, cure, or prevent any disease. Any observed differences in performance are due to the nutritional and hydration properties of Tonisity Px.

**TABLE 1 – Economic assessment of study outcomes for Tonisity Px group.**

Live piglets in Tonisity Px group at day 2	4801
Additional surviving weaned pigs <sup>a</sup>	246
Value of extra surviving weaned pigs <sup>b</sup>	\$7,134
Live pigs in Tonisity Px group at arrival	4632
Additional surviving feeder pigs at 6 wk <sup>c</sup>	401
Value of extra surviving feeder pigs <sup>d</sup>	\$18,045
Total extra gross income	\$25,179
Cost of Tonisity Px and labor <sup>e</sup>	-\$3,574
Total extra net income due to Tonisity Px	\$21,605
Return on investment	7.05:1

<sup>a</sup> Mortality: 8.54% controls – 3.42% Tonisity Px = +5.12% extra pigs

<sup>b</sup> Weaner pigs valued at \$29/head

<sup>c</sup> Mortality: 13.85% controls – 5.18% Tonisity Px = +8.67% extra pigs

<sup>d</sup> Feeder pigs valued at \$45/head (6 wk post-weaning, 40 lb)

<sup>e</sup> \$2805 Tonisity Px, \$769 labor; not including cost of conventional electrolyte solution used for up to 15 days for controls

## CONCLUSIONS

Pre-weaning and post-weaning supplementation of PRRS-exposed pigs with Tonisity Px clearly generated significant health and economic benefits. By helping reduce death losses, strategic Tonisity Px supplementation allowed producers to preserve productivity and profit potential under challenging conditions involving background PRRS infection.

**Tonisity**

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