Tonisity

The effect of administering Tonisity Px with milk replacer on piglet weight gain and pre-weaning mortality

Aim

The aim of this study was to evaluate the effect of administering Tonisity Px with milk replacer in the farrowing house on piglet weight gain from day two to weaning and on pre-weaning mortality.

Materials and methods

- This evaluation was conducted on a 380-sow commercial farm in Southeast Romania, with genetics PIC Camborough/ PIC x54/ PIC 408/ PIC 337
- On average, the farm produces 2.3 litters/sow/year, with an average born alive of 15 pigs/litter (a total of 13,110 piglets/year)
- A total of 18 litters were used in the study, amounting to 270 piglets
- Weaning usually occurs on this farm at 28 days, with an average weaning weight of 6-7kg, pre-weaning mortality (PWM) is historically 15%
- Milk replacer is used on this farm starting at day two until day 15, and creep feeding is provided to piglets beginning at day 10 of age
- Piglets were allocated to two groups: Control and Tonisity Px (TPX)
- TPX piglets received 500ml/litter/day of 3% Tonisity Px solution between two and eight days of life, 500ml/litter/day of milk replacer from day two to 15, dry creep feed from day 10 to 28 and 500ml/litter/day of 3% Tonisity Px solution between days 25 and 28
- Control piglets received 500ml/litter/day of milk replacer from day two to 15 and dry creep feed from day 10 to 28
- The milk replacer and Tonisity Px were administered in round creep feed pans

Pre-weaning mortality (PWM)

Overall, the mortality in the TPX group was 17.8% less than in the Control group, representing a 33% mortality reduction with a P value of <0.05. This would result in an extra 1.82 pigs/litter, and an extra 89 pigs for every 1,000 born.

Growth performance

Tonisity Px increased weaning weight by 5.9%, and feeding Tonisity Px to all piglets resulted in a 390g weaning weight advantage.

Table 1. Basic study data.

	Overall	Control	TPX
Litters	18	9	9
Day 2 piglets	270	135	135
Day 2 piglets/litter	15	15	15
Weaned pigs	210	99	111
Weaned pigs/litter	11.6	11.0	12.3
Weaning age (days)*	28 (25-31)	28 (25-31)	28 (25-31)

*Age is presented as mean (min-max)

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A piglet's first week of life

The basis of the best achievable financial result in the sow herd is a high number of pigs per sow and per year. Optimal handling of the sow and piglets around farrowing, and in the first week of life of the piglets, are prerequisites for a good financial result.

Feed recommendations before farrowing

Make sure the sows are fed according to the recommendations and pay special attention to the fact that the sows are kept in appropriate feeding conditions. It is important to ensure the feed and feed hygiene is of a high standard. If the sows are fed with feed containing a high level of toxins, it often results in many small and weak piglets.

The farrowing barn

The optimal farrowing barn should be sectioned and each section washed, disinfected and dried out completely before each new farrowing group. From time to time, check on both the dosage of soap and disinfectant fluid, that it is being used correctly, and that the barn is dry before the heavily pregnant animals are put in. Remember to label sows that have previously had several stillborn piglets.

Day before farrowing

The day before farrowing begins, the barn temperature should be adjusted up to about 22°. Turn on heat lamps, so that the floor in the pens is 34-36° before the first pig is born. Since the smallest new-borns have a relatively large surface area and are wet when they are born, they are most at risk of quickly cooling to a body temperature below 34°. It is critical, to use a heat source and/or fresh straw behind the sow during farrowing. Do not wipe away the amniotic fluid of the new-borns as research shows this to have a slightly higher mortality rate.

When farrowing begins

Staggered working hours on the big farrowing days is a good idea; the evening round is a minimum requirement to provide timely obstetric care. The life force of the newborn pig is more decisive than its birthweight for their chance of survival. Only newborn piglets without a sucking reflex or with very low vitality die immediately. Move the smaller new-borns to a young sow, which still has colostrum and remove its own larger new-borns. This nurse must remain during the farrowing process. Good management can minimise the need for the use of extra energy supplements for the smallest new-borns. A newborn pig will have sufficient antibodies if it drinks at least 60ml of the first colostrum. If the pig drinks 250ml, it has enough energy to survive the first critical day.

When to level the litter

Litter levelling can be used in several different ways and is most often herd dependent. It should focus on survival among the piglets and not just levelling to uniform litters with the same size pigs. However, there must be a focus on the sow and pigs fitting together, so that the pigs have the best conditions during lactation. But then when are we going to litter level or use nursing sows? In the case of large litters, the largest pigs are moved, as they have usually secured colostrum before the smallest. Excess pigs should be moved to a nursing sow – large pigs to an ordinary nursing sow and small pigs to the smallest nurse.

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Field Study in Vietnam: Tonisity Px for post-weaning fall behind pigs

A field study was conducted on a farm in Phú Thọ province in Vietnam (west of Hanoi) from September 22 to October 12, 2022. A total of 200 piglets (110 in the Tonisity Px group and 90 in the control group) were tested. The piglets were weaned at 22-23 days of age, and the trial started one week later when they were 30 days old.

All the pigs involved in the trial were fall behinds and the objective was to see how Tonisity Px could help small piglets in the post-weaning phase.

In the Tonisity Px (TPX) group, piglets received 100ml of a Tonisity Px solution (3%) per head and per day, served on top of the same amount of feed (100g of feed per head per day). After they finished the feed mixed with Tonisity Px, they were given dry feed. This protocol was applied for one week. In the control group, the feed was given according to the standard farm protocol.

After the seven days of Tonisity Px on top of feed, the trial continued for another two weeks. During these two weeks, both groups were given the same feed (without Tonisity Px). Besides the mortality rate, feed intake and weight gain, the staff were asked to comment on the agility of the piglets and their visual aspect.

Trial results

Parameter	Control	Tonisity Px	Difference
Number of piglets	90	110	
Average weight at start (kg)	5.0	4.8	-4.0%
Mortality	0	0.9%	0.9%
Average weight at end (kg)	10.1	10.5	3.8%
ADG (g/head/day)	245	273	11.4%
Average feed intake/pig/day (g)	420	394	-6.1%
FCR	1.71	1.44	-15.7%

Comments:
The farm staff observed that in the TPX group, the piglets were more agile, moved faster, had brighter eyes and the skin aspect was clearly better (shinier).

- At the start of the trial, the piglets in the control group were 200g (4%) heavier on average. After three weeks, the TPX piglets were 400g (3.8%) heavier. This means that their average daily gain improved by 28 grams, or 11%
- Although the TPX piglets ate 6% less feed per day, their FCR was 16% lower which brings great economic benefits to the farm
- The post-weaning mortality levels were very low: only one piglet died during the trial

Conclusion:
This field study shows that using Tonisity Px as a post-weaning feed top-dressing can be very beneficial to support small or weak pigs, also known as “fall behinds”. This is another way that producers can use Tonisity Px.

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