

# **Effect of Tonisity Px<sup>TM</sup> administration on pre-weaning mortality under field conditions – a meta-analysis**

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# Tonistry Px – meta-analysis

- Tonistry Px
  - Product information
  - Application
- Objective
- Materials & Methods
  - Trial set-up
  - Farm characteristics
- Results
  - Pre-weaning mortality:
    - Meta-analysis
    - Descriptive analysis
  - Simulation PWM
  - ROI analysis - PWM
- Conclusions

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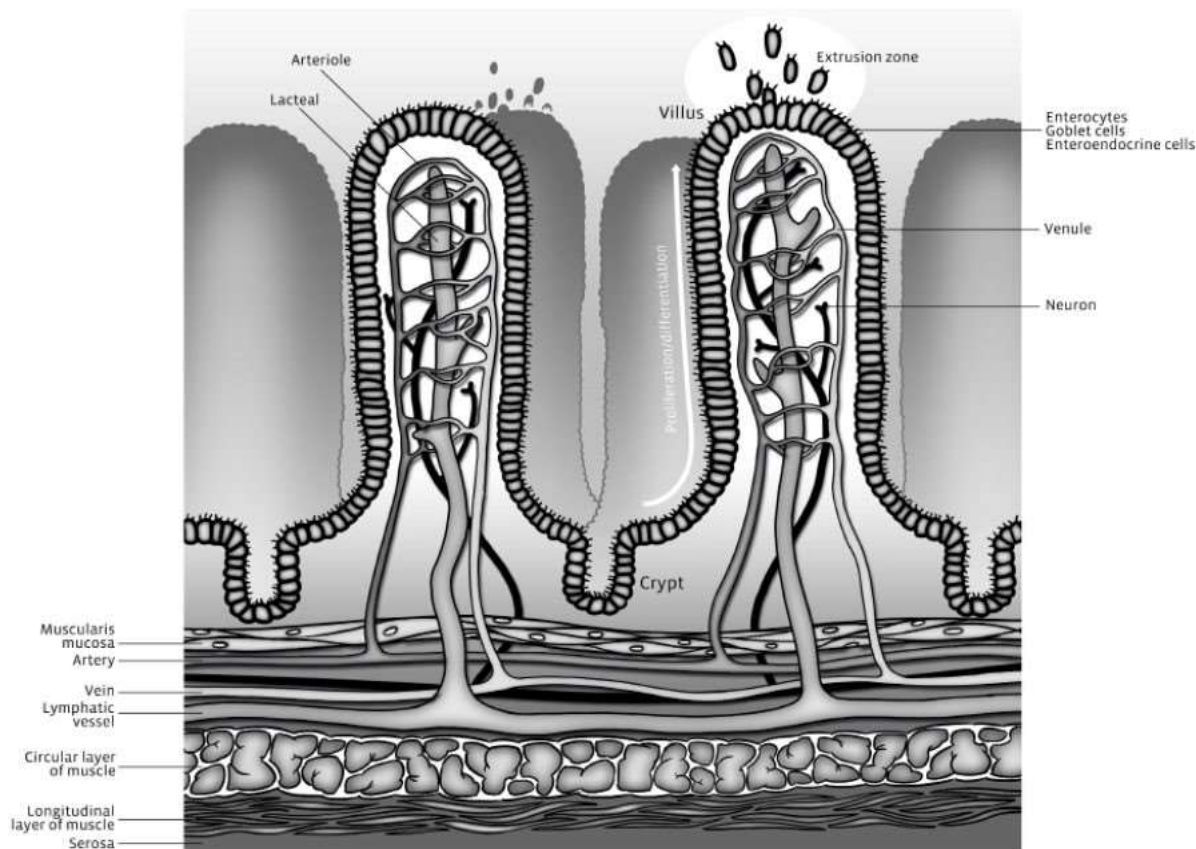
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# Problem of suckling piglet 'starvation'

- Modern sows are highly prolific
  - Farmer 'thinks' only small and weak piglets die
  - BUT also medium and good quality piglets loose body condition and finally die as 'weak piglets'
- Although piglets drink sow milk, some piglets don't get the maximum out of the milk
- Currently supplementations:
  - Electrolyte solutions
  - Artificial milk supplement
  - Yoghurt
  - ...

# Problem of suckling piglet 'starvation'

Enterocytes need nutrients to do their job



- **Water**
- **Ions**
  - Sodium
  - Calcium
  - Magnesium
- **Sugars >> glucose**
- **Amino acids**
- **Lipids**

# Tonistry Px – product information

## Balanced combination of nutrients that feed the enterocyte

- Energy sources
  - Proteins and amino acids
  - Electrolytes
  - Acidifiers
  - Flavours
- **Rapid fuel for enterocytes**
  - **Rehydration**
  - **High palatability**

**Others feed the piglet, we feed the intestine!**

# Tonistry Px – application

## **During suckling period**

- 3% solution
- 1 dosing per day
  - 500 mL per litter per day: < 15 piglets
  - 600 mL per litter per day: > 15 piglets
- 7-day treatment: d2-8

## **Around weaning**

- 3% solution
- Pre-weaning: 500 mL per litter per day for 3 days
- Day of weaning: 50 – 100 mL per piglet
- Post-weaning: 50 – 100 mL per piglet for 3 days

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# Objective

Analyse the effect of Tonistry Px administration on pre-weaning mortality on 10 sow farms in Belgium and the Netherlands with a low to moderate pre-weaning mortality percentage

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# Trial set-up

## **During suckling period**

- 3% solution
- 1 dosing per day
  - 500 mL per litter per day: < 15 piglets
  - 600 mL per litter per day: > 15 piglets
- 7-day treatment: d2-8

## **Data registration**

- Piglet number at
  - Day 2
  - Day of weaning (or day before)
- Calculation of PWM
- Simulation of PWM reduction
- Calculation of piglet price at ROI = 1

# Farm characteristics

Farm ID	# Sows	Breed	BMS	Age@weaning	% PWM	LBP	PSY	Standard program
A	800	DanBred	4	21	7.4	15.67	32.60	Electrolyte solution
B	250	Topigs	1	26	3.9	14.83	31.23	No supplementation
C	400	Topigs	4	21	10.0	14.53	29.22	No supplementation
D	200	DanBred	4	21	4.9	16.41	35.17	No supplementation
E	1150	DanBred	1	26	13.8	16.00	30.38	Water
F	2000	Topigs	4	21	3.3	15.52	33.72	No supplementation
G	1000	DanBred	4	21	5.3	16.61	35.47	No supplementation
H	1000	DanBred	4	21	5.3	14,82	33.17	No supplementation
I	280	Hypor	3	26	8.6	15.01	29.45	No supplementation
J	250	Topigs	5	28	11.3	15,45	30.12	No supplementation

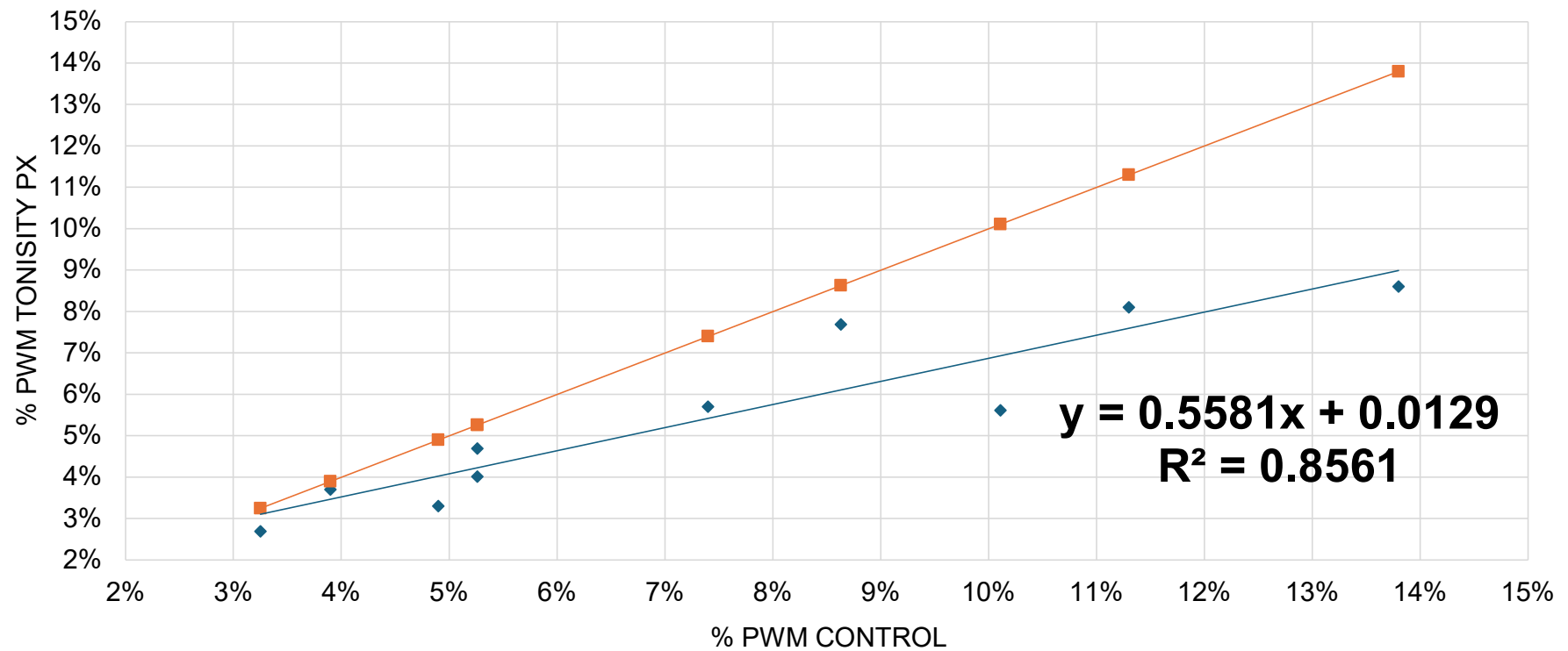
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## Sterfte voor spenen – controle vs. Tonisity Px

Farm ID	PWM control (%)	PWM Tonisity Px (%)	% PWM reduction
A	7.4	5.7	23.0
B	3.9	3.7	5.1
C	10.0	5.6	44.5
D	4.9	3.3	32.7
E	13.8	8.6	37.7
F	3.3	2.7	17.2
G	5.3	4.7	10.8
H	5.3	4.0	23.8
I	8.6	8.6	10.9
J	11.3	8.1	28.3

# Meta-analyse: effect Tonisity Px



# Descriptive analysis – sow breed / weaning age / # live born piglets

Parameter	PWM control (%)	PWM Tonisity Px (%)	% PWM reduction
All farms	7.38 ± 1.11	5.41 ± 0.67	23.40 ± 4.01
Sow breed			
DanBred	7.99 ± 1.52	5.73 ± 0.89	26.04 ± 3.79
Other breeds	6.47 ± 1.71	4.92 ± 1.10	19.44 ± 8.71
Weaning age			
21 d	6.03 ± 1.98	4.33 ± 0.50	25.33 ± 4.85
26-28 d	9.41 ± 2.12	7.02 ± 1.12	20.51 ± 7.55
Live born piglets			
LBP < 16	6.92 ± 1.84	5.00 ± 1.04	24.27 ± 4.91
LBP ≥ 16	7.84 ± 1.41	5.82 ± 0.91	22.52 ± 6.92



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# Simulation – reduction PWM

Initial PWM	PWM Tonisity Px	Simulated PWM reduction	Extra piglets/ litter	Extra piglets per 1000 piglets born	Weaned piglet price at ROI = 1 breakpoint (€)	Piglet price end-nursery at ROI = 1 breakpoint (€)
4,0%	3,52%	-11,9%	0,08	5	€ 81,66	€ 106,66
5,0%	4,08%	-18,4%	0,15	9	€ 42,41	€ 67,41
6,0%	4,64%	-22,7%	0,22	14	€ 28,65	€ 53,65
7,0%	5,20%	-25,8%	0,29	18	€ 21,63	€ 46,63
8,0%	5,75%	-28,1%	0,36	22	€ 17,37	€ 42,37
9,0%	6,31%	-29,9%	0,43	27	€ 14,51	€ 39,51
10,0%	6,87%	-31,3%	0,50	31	€ 12,46	€ 37,46
11,0%	7,43%	-32,5%	0,57	36	€ 10,92	€ 35,92
12,0%	7,99%	-33,4%	0,64	40	€ 9,72	€ 34,72
13,0%	8,55%	-34,3%	0,71	45	€ 8,75	€ 33,75
14,0%	9,10%	-35,0%	0,78	49	€ 7,96	€ 32,96
15,0%	9,66%	-35,6%	0,85	53	€ 7,31	€ 32,31

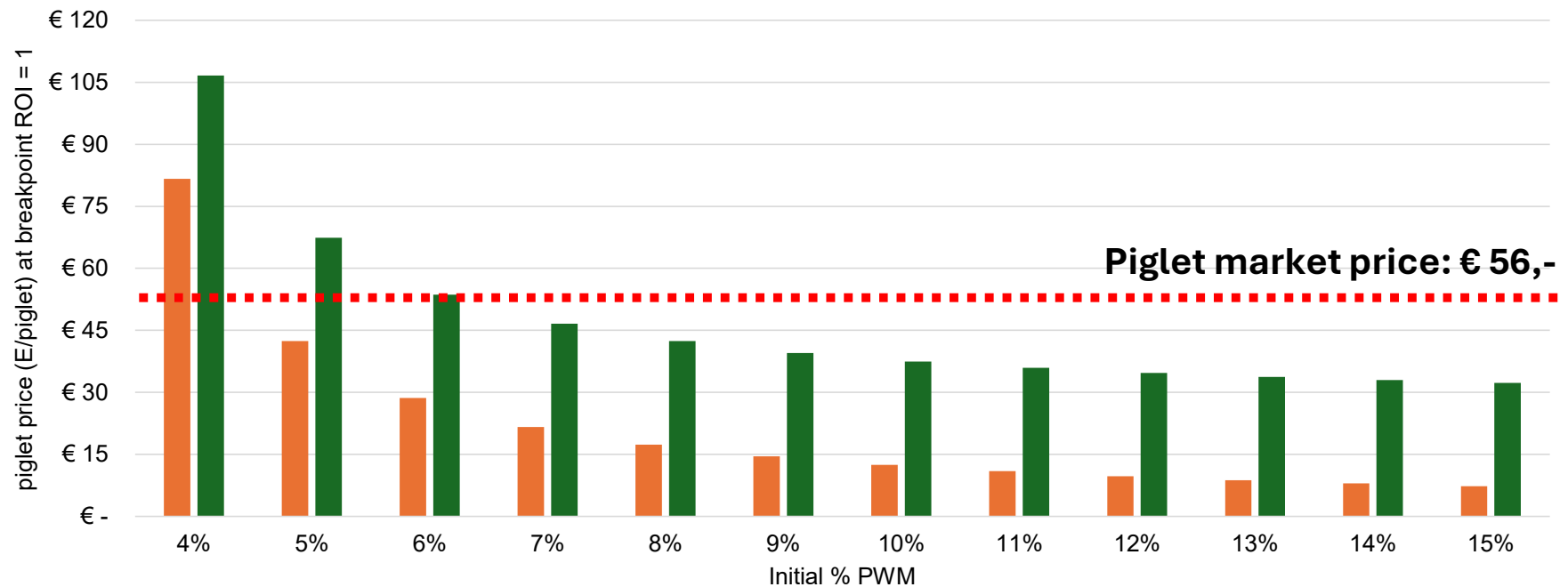
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# Sterftepercentage voor spenen: ROI analyse



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# Conclusions

- The administration of TPx from d2 to d8 during lactation resulted in a significant reduction of PWM in 10 farms under field conditions in Belgium and the Netherlands.
- Supplementation of TPx resulted in a positive ROI (= or  $> 1$ ) when PWM at farm level was equal to or higher than 6.0% under current end-nursery piglet market prices (Sept 2024)