Welcome

PERFORMANCE MINERALS®

ZINPRO
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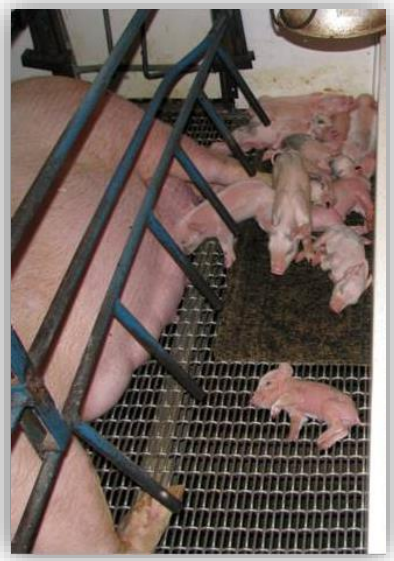
Gilt Lameness

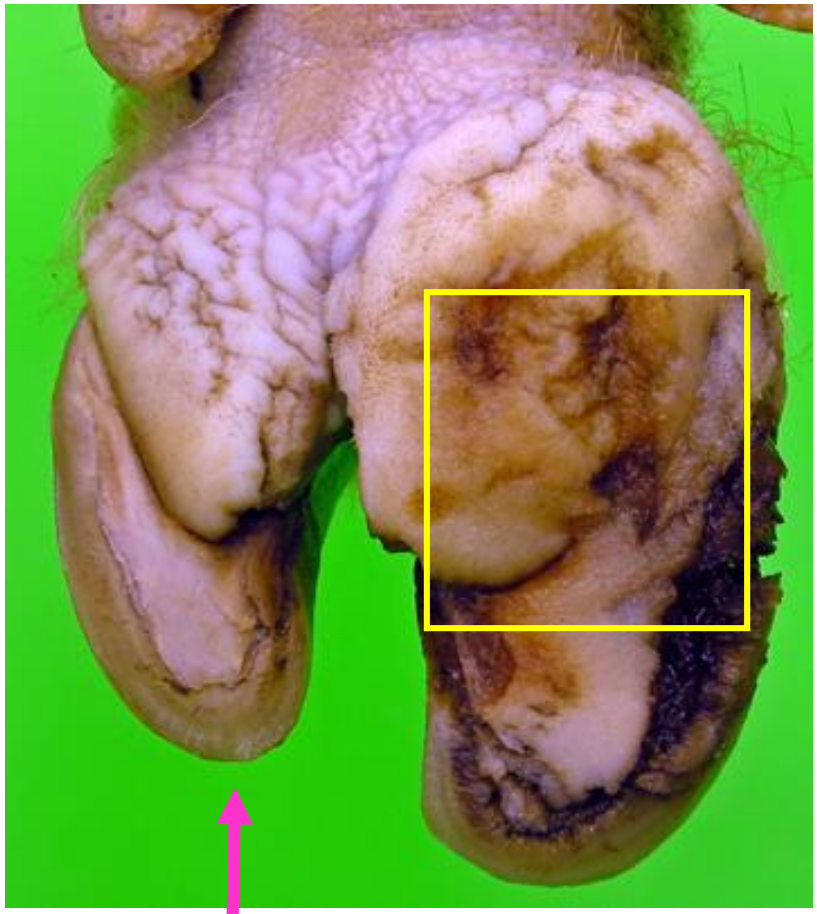
Gilt Lameness

Effects Of Lameness

	Not Lame	Lame	*P* Value
Pigs born/d	0.049 ± 0.002	0.028 ± 0.003	< 0.001
Survival at 350 d, %	44.6	23.6	< 0.001
Total days in herd	215.7 ± 4.45	148.3 ± 10.67	< 0.001



Anil, et al., 2009. J. Am. Vet. Med. Assoc. 235(6):734-738



inner claw
carries no weight !

255kg sow

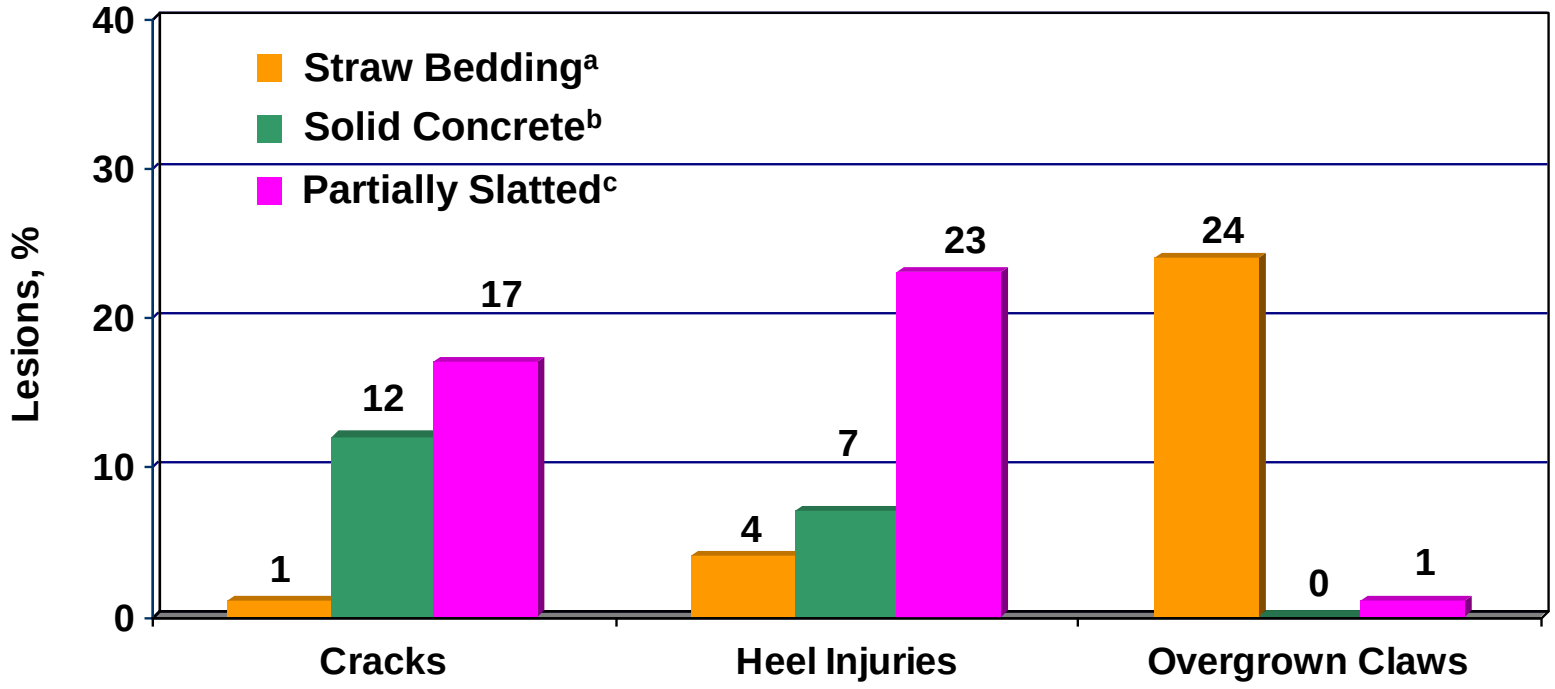
55% forehand (nữa mình) = 140kg

70kg per foot
or
70kg per heel (3x3cm) !!! **= 7.75 kg/cm$_2$**

US battle tank M 103
weight = 65'000kg
Ground pressure = **0,90 kg/cm$_2$**

HOUSING & FEET PROBLEMS

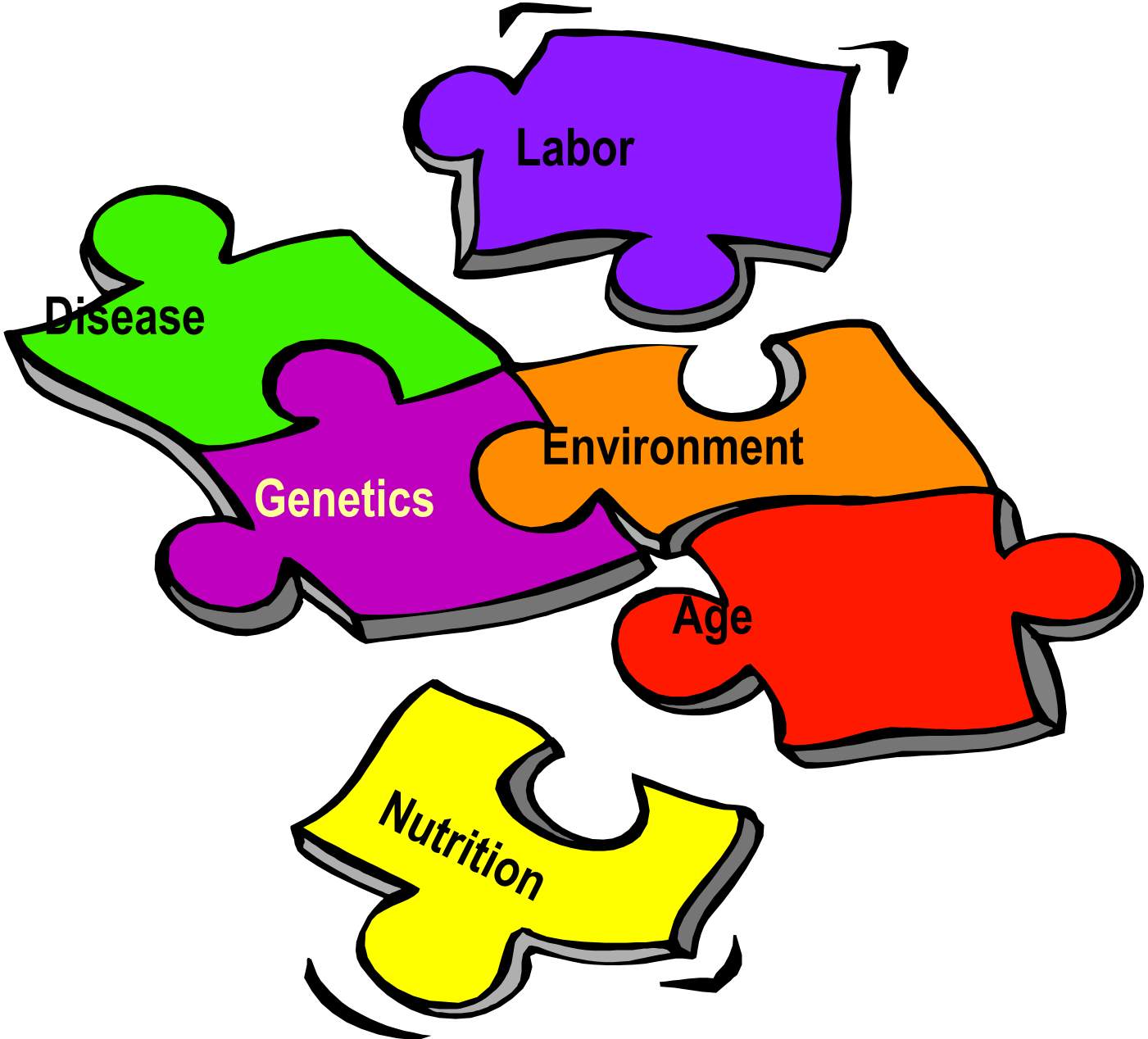
OCCURRENCE OF CLAW LESIONS

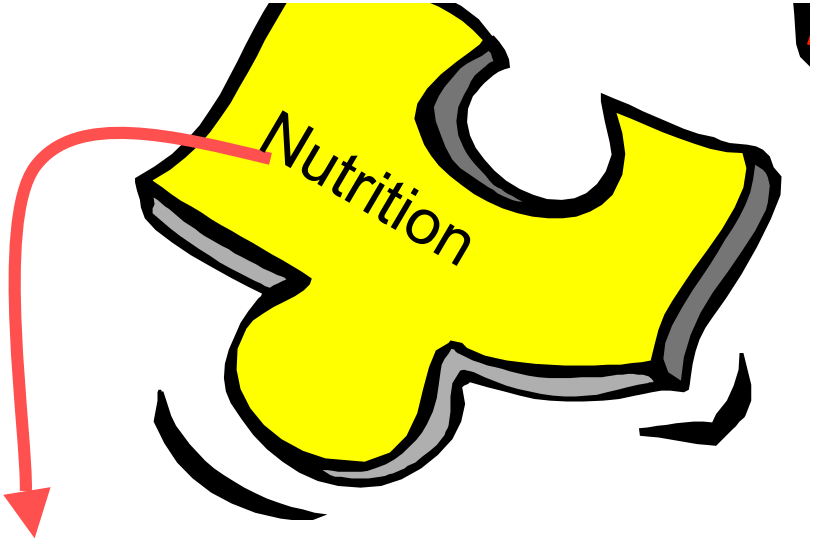


[a] 121 Sows observed
[b] 58 Sows observed
[c] 531 Sows observed

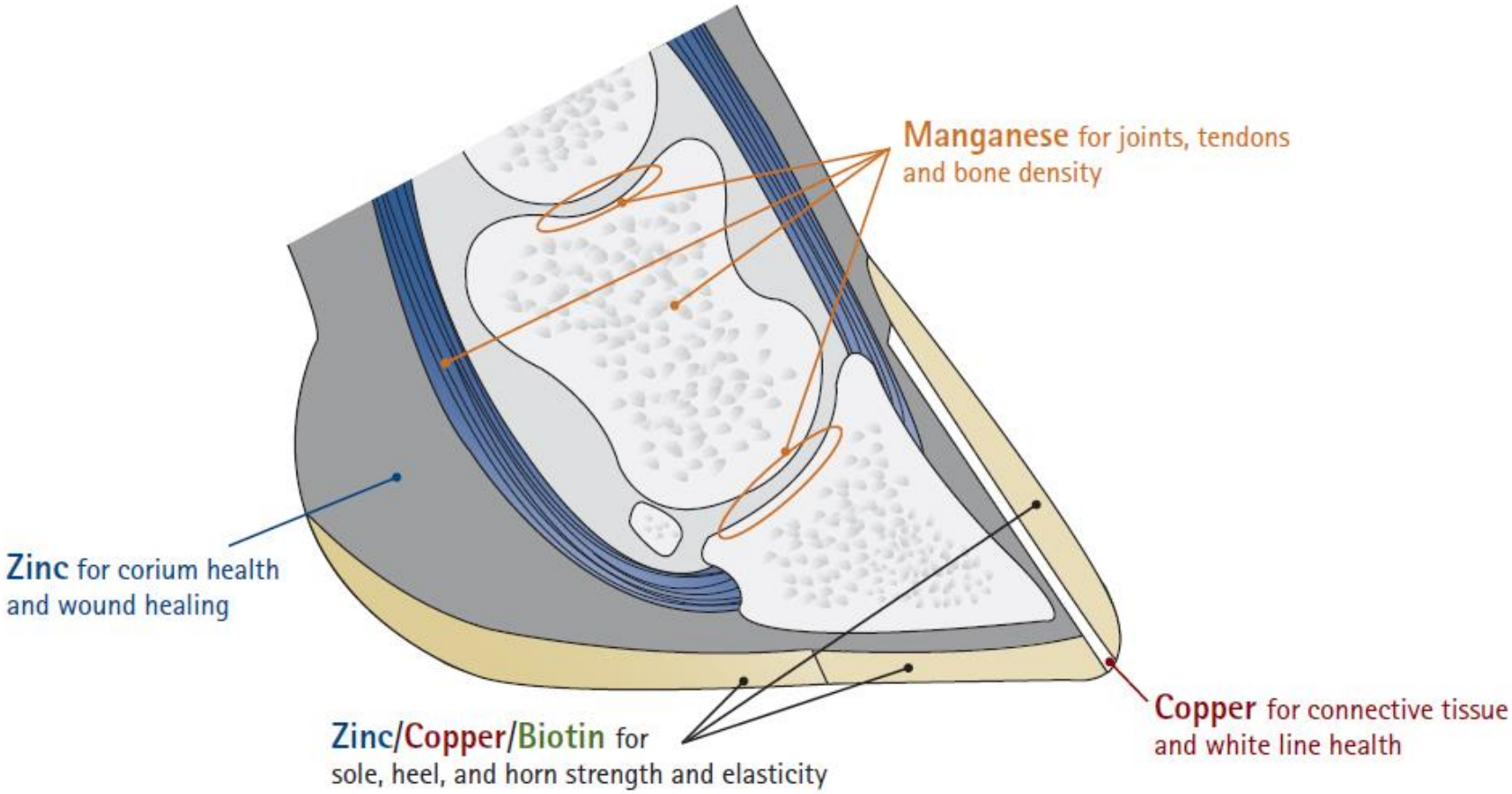
Ehlorsson, C-J. and O. Olsson, 2002, Proceedings 17th IPVS Congress, 2:442

MULTI-FACTORIAL PROBLEM





Zinpro Performance Minerals



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Organic Trace Minerals and Biotin

- **Biotin – quality of the cement**
- **Organic minerals – quality of the bricks**

Nutrients Essential For Better Feet

Nutrients:	Zn	Mn	Cu	Biotin
Keratinized tissue formation	X			X
Keratinocyte differentiation	X			
Catalyzes enzymes for keratin formation	X			X
Cartilage formation, a key component of connective tissue in the claw wall		X		
Formation of structural proteins during the horn keratinization process	X			
Strengthens horn by forming di-sulfide bonds between keratin filaments			X	
Strengthens collagen fibers by cross linking the fibers			X	
Complex lipid structure formation in intercellular cementing substance				X

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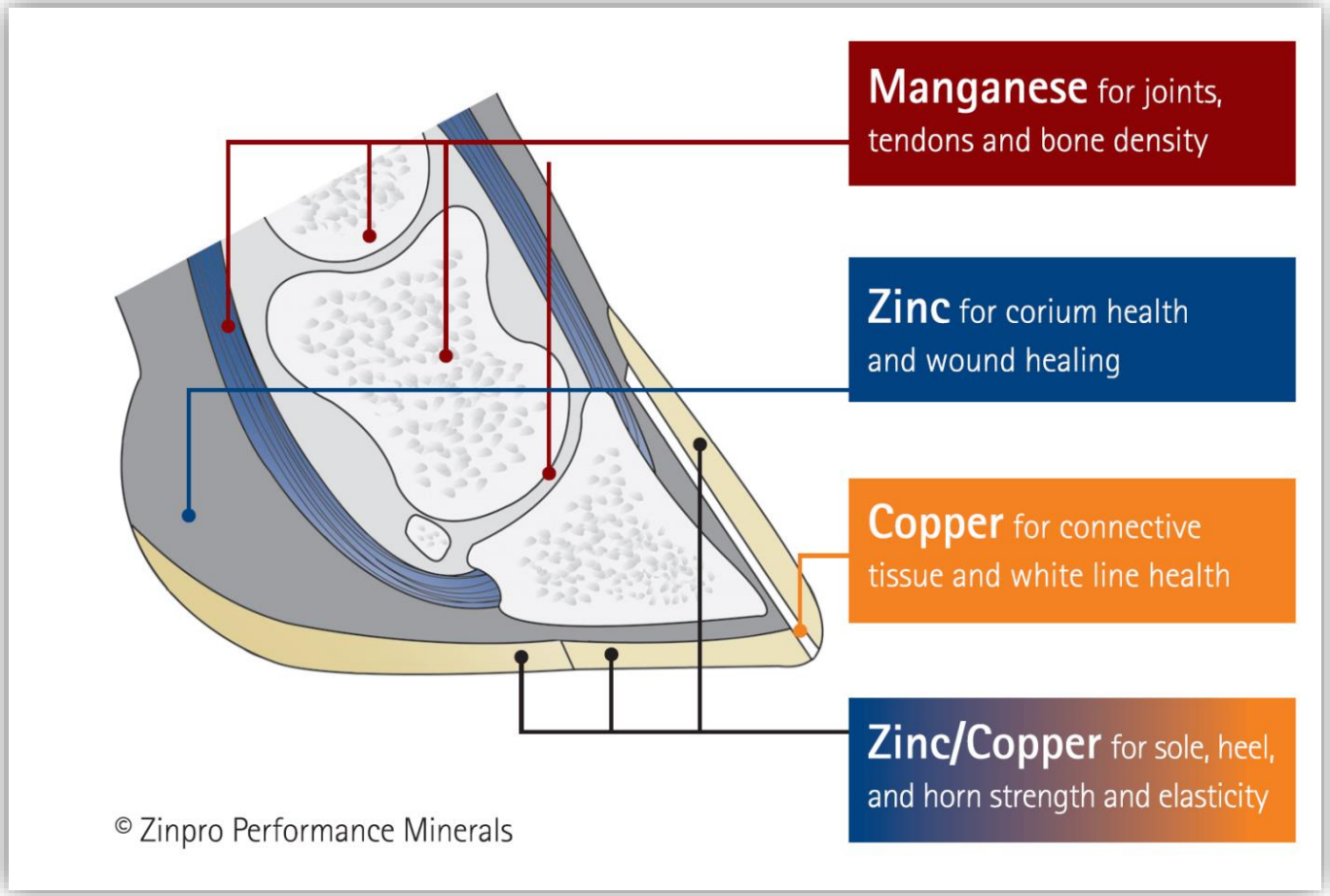
For Healthier Claws



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Evaluation of erosion at the heel

Score 0

Score 2

Score 1

Score 3

Evaluation of cracks in the claw

Score 0

Score 2

Score 1

Score 3

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FeetFirst™ FROM ZINPRO

LESION SCORING GUIDE

Produced by the Feet First™ Project: Dr. J. Deen; Dr. M. Schuttert; Dr. S. van Amstel; Dr. P. Ossent; Dr. R. van Barneveld and Zinpro Corporation.

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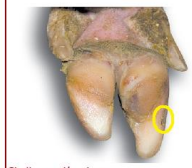
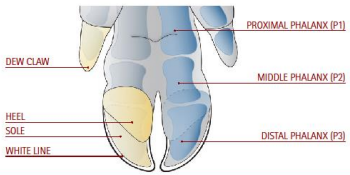
LESION DESCRIPTION	HEEL OVER-GROWTH & EROSION (HOE)	HEEL-SOLE CRACK (HSC)	WHITE LINE (WL)	CRACKED WALL HORIZONTAL (CWH)	CRACKED WALL VERTICAL (CWV)	TOES (T)	DEW CLAWS (DC)
1 MILD	 Slight overgrowth and/or erosion in soft heel tissue	 Slight separation at the juncture	 Shallow and/or short separation along white line	 Hemorrhage evident, short/shallow horizontal crack in toe wall	 Short/shallow vertical crack in wall	 One or more toes slightly longer than normal	 Slightly longer than normal
2 MODERATE	 Numerous cracks with obvious overgrowth and erosion	 Long separation at the juncture	 Long separation along white line	 Long but shallow horizontal crack in toe wall	 Long but shallow vertical crack in wall	 One or more toes significantly longer than normal	 Claws extend to floor surface when the pig is standing
3 SEVERE	 Large amount of overgrowth and erosion with cracks throughout	 Long and deep separation at the juncture	 Long and deep separation along white line	 Multiple or deep horizontal crack(s) in toe wall	 Multiple or deep vertical crack(s) in wall	 Long toes which affect gait when walking	 Claw is torn and/or partially or completely missing

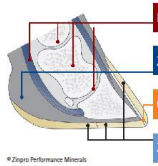
REAR VIEW OF A PIG'S FOOT



Food for feet

AVAILA SOW ZINPRO PERFORMANCE MINERALS®

AVAILA SOW – ESSENTIAL NUTRIENTS FOR BETTER FEET



- **Manganese** for joints, tendons and bone density
- **Zinc** for corium health and wound healing
- **Copper** for connective tissue and white line health
- **Zinc/Copper** for sole, heel, and horn strength and elasticity

® Zinpro Performance Minerals

Claw Lesions Can Lead To Lameness

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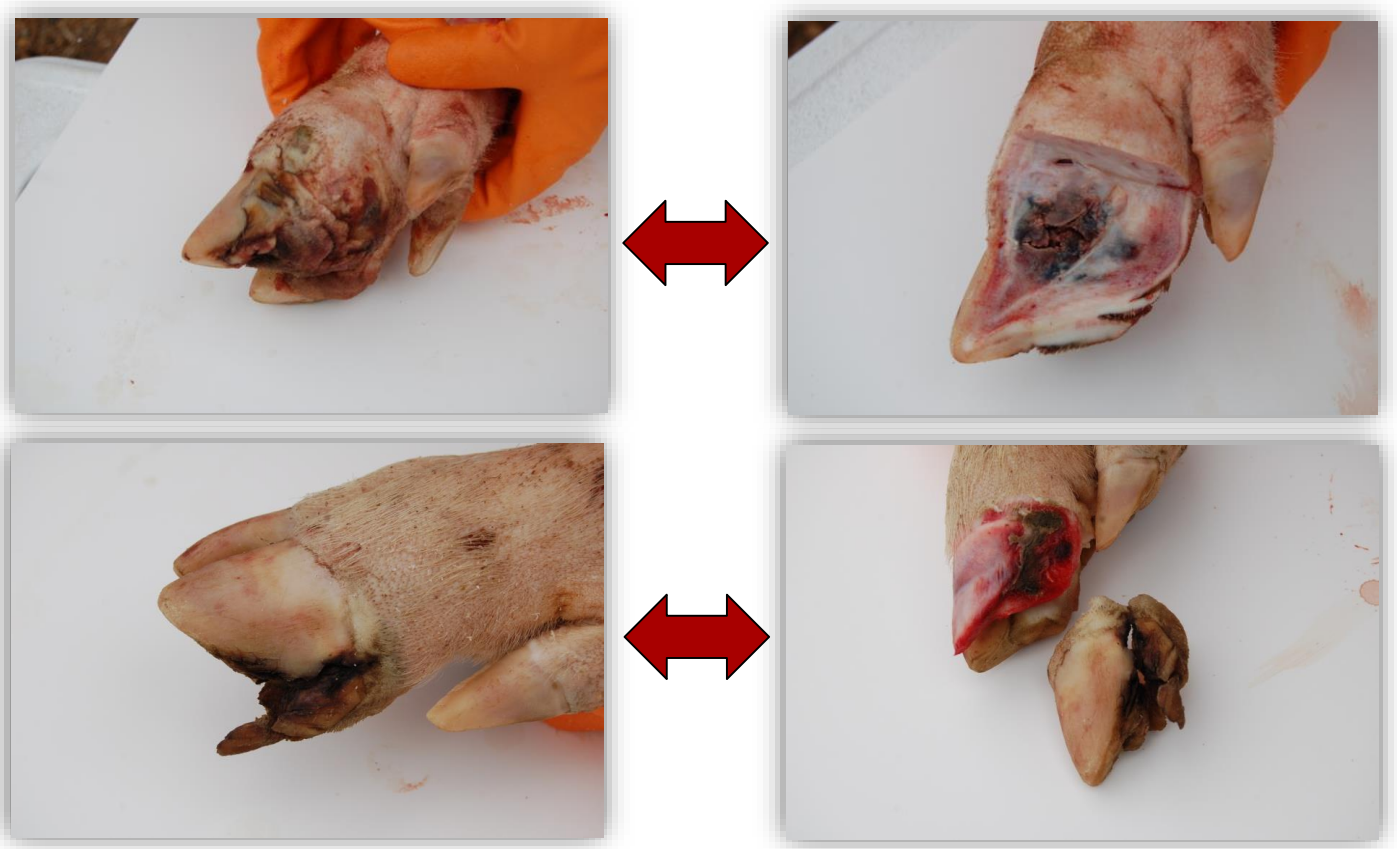
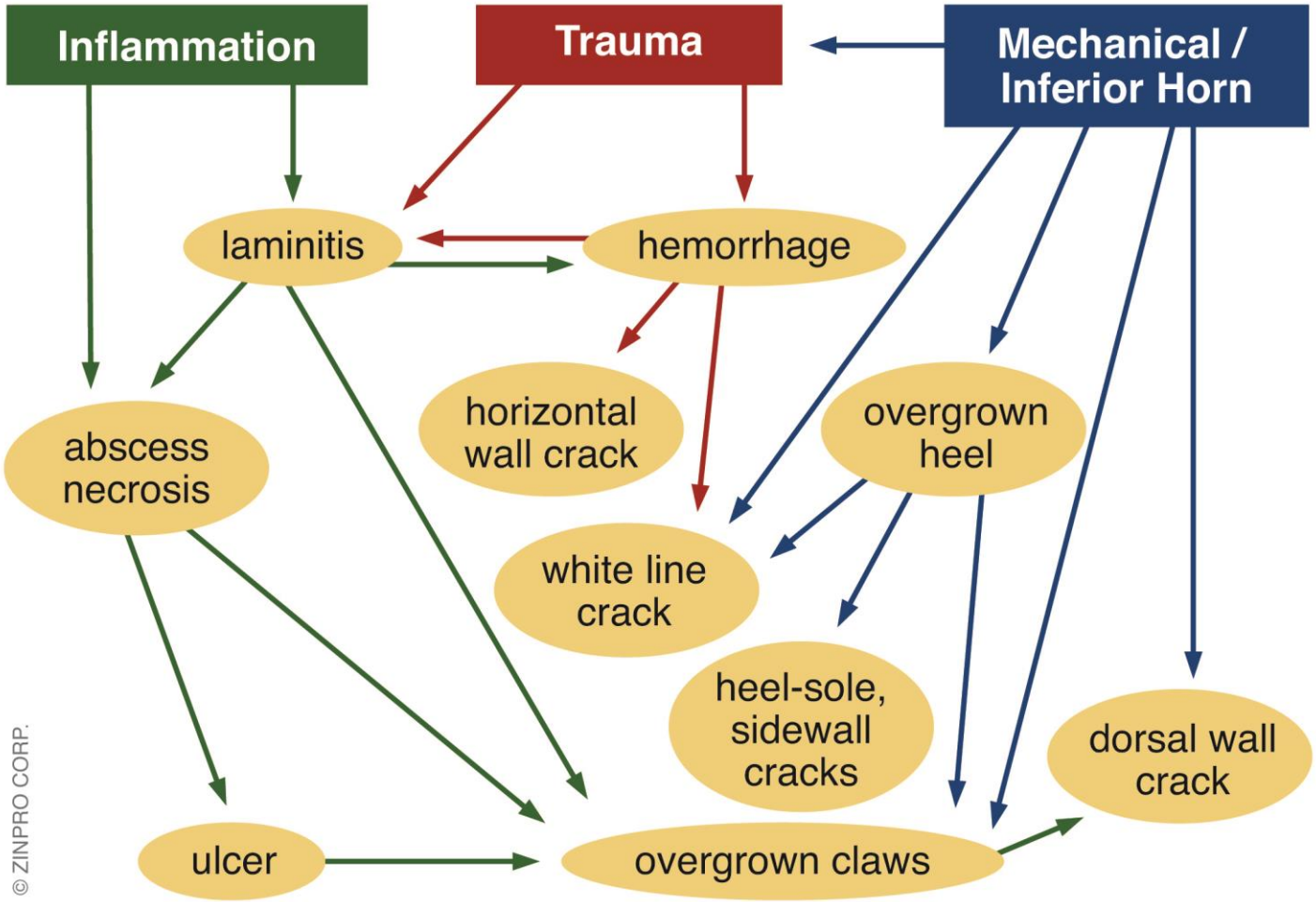
Claw Lesions And Pathology



Da Silva, A. et al., 2010. AASV. 41st Annual Meeting Proceedings. Implementing Knowledge. March 6-9. Omaha, NE. p. 425.

Sow Claw Lesion Etiology



Ossent, 2010

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เริ่มต้น

start

12สัปดาห์

3 month

16 สัปดาห์

4month

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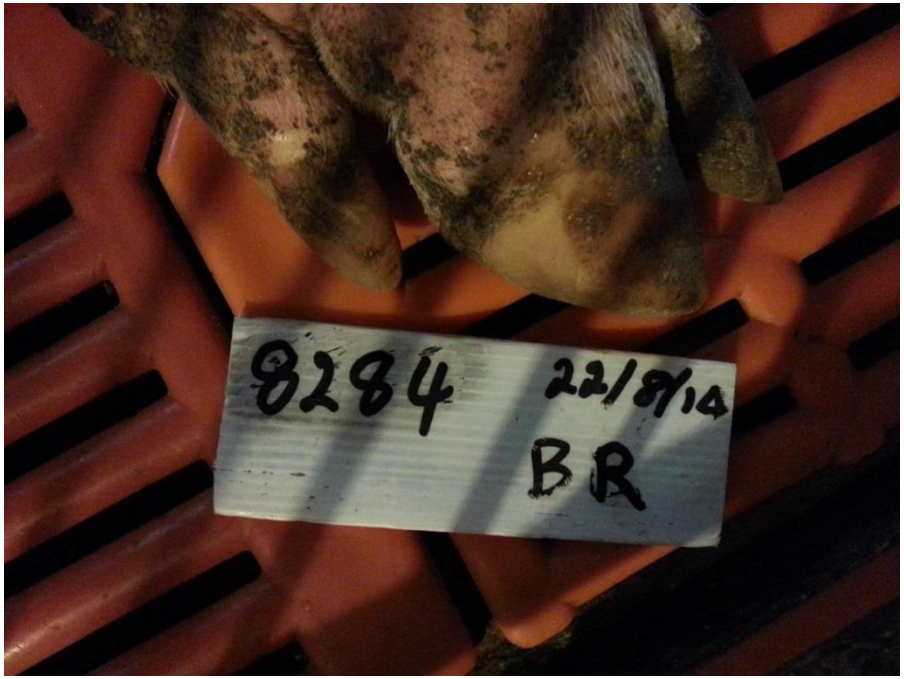

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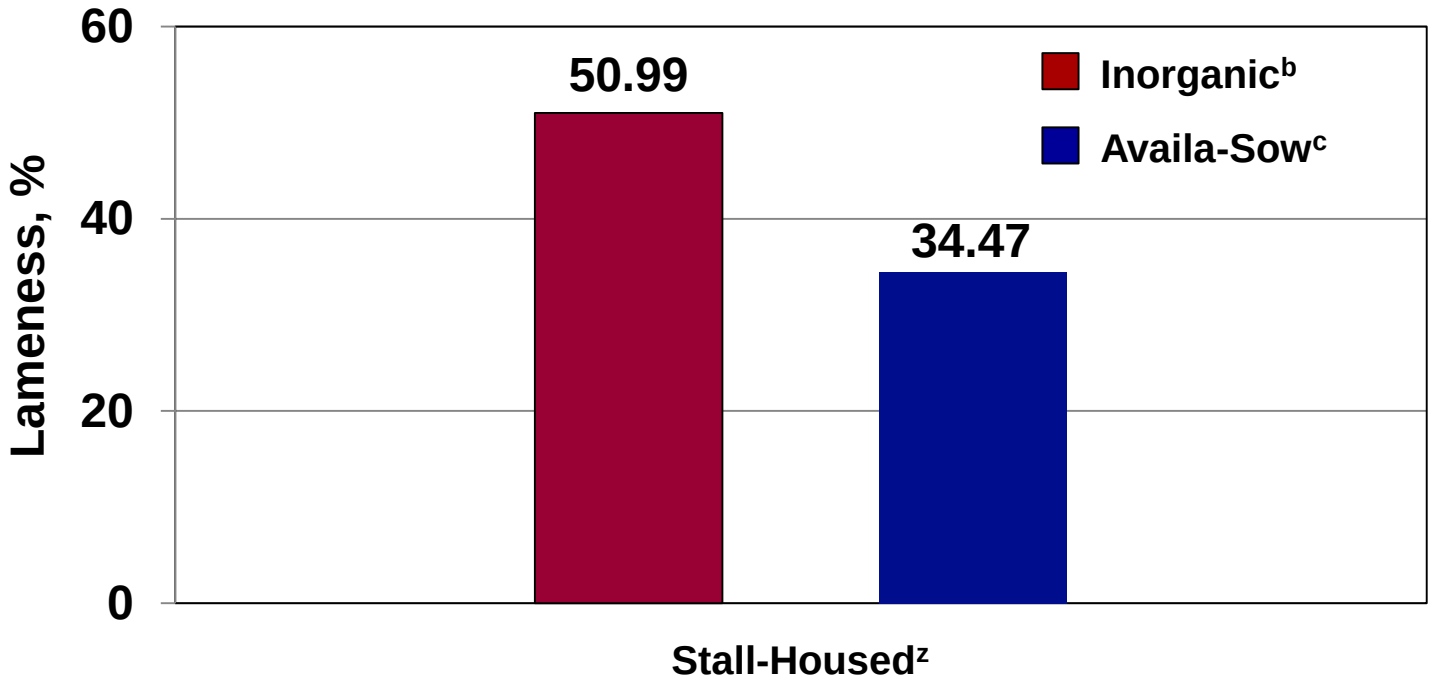
Percent Lameness[a] In Sows When Fed AA-C TM vs Inorganic



[a] Kruskal-Wallis test
[b] Sulfates provided 125 ppm Zn, 40 ppm Mn,15 ppm Cu
[c] Availa-Sow; partial substitution with 50 ppm Zn as Availa®Zn zinc amino acid complex, 20 ppm Mn as Availa®Mn manganese amino acid complex, 10 ppm Cu as Availa®Cu copper amino acid complex
[z] Reduction in lameness, $P < 0.001$

Anil, S. S., 2010. J. Anim. Sci. Vol. 88, E-Suppl. 88, P.p. 127, abstract. M333

SwBr – 124m

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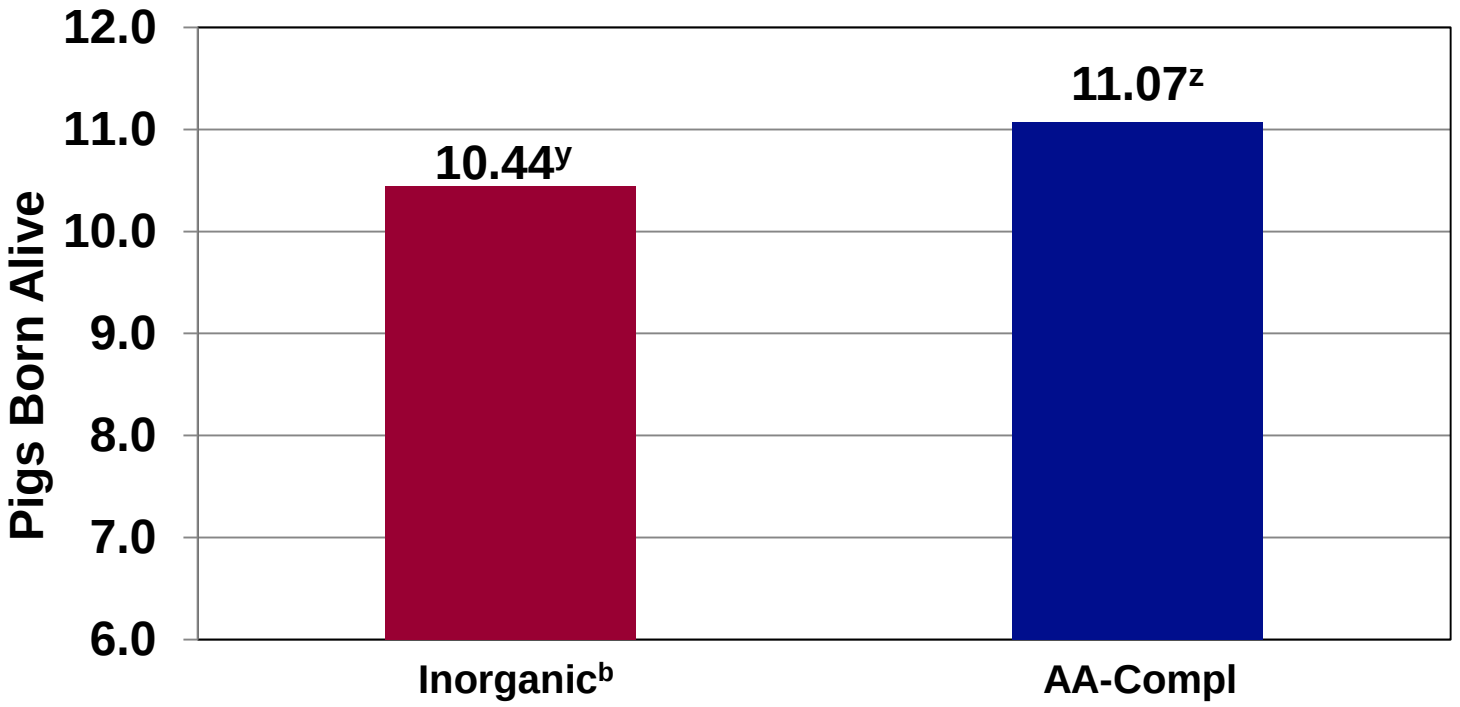
Production Performance Of Stall-Housed Sows Receiving AA-C TM[a]



[a] Availa-Sow, partial substitution with 50 ppm Zn as zinc amino acid complex, 20 ppm Mn as manganese amino acid complex, 10 ppm Cu as copper amino acid complex

[b] Sulfates provided 125 ppm Zn, 40 ppm Mn,15 ppm Cu

[yz] Means lacking a common superscript letter differ, $P < 0.05$

Anil, S. S., *et al*., 2010. Proceedings of the 21st IPVS Congress, Vancouver, Canada – July 18-21, abstract P.862

SFF - 671

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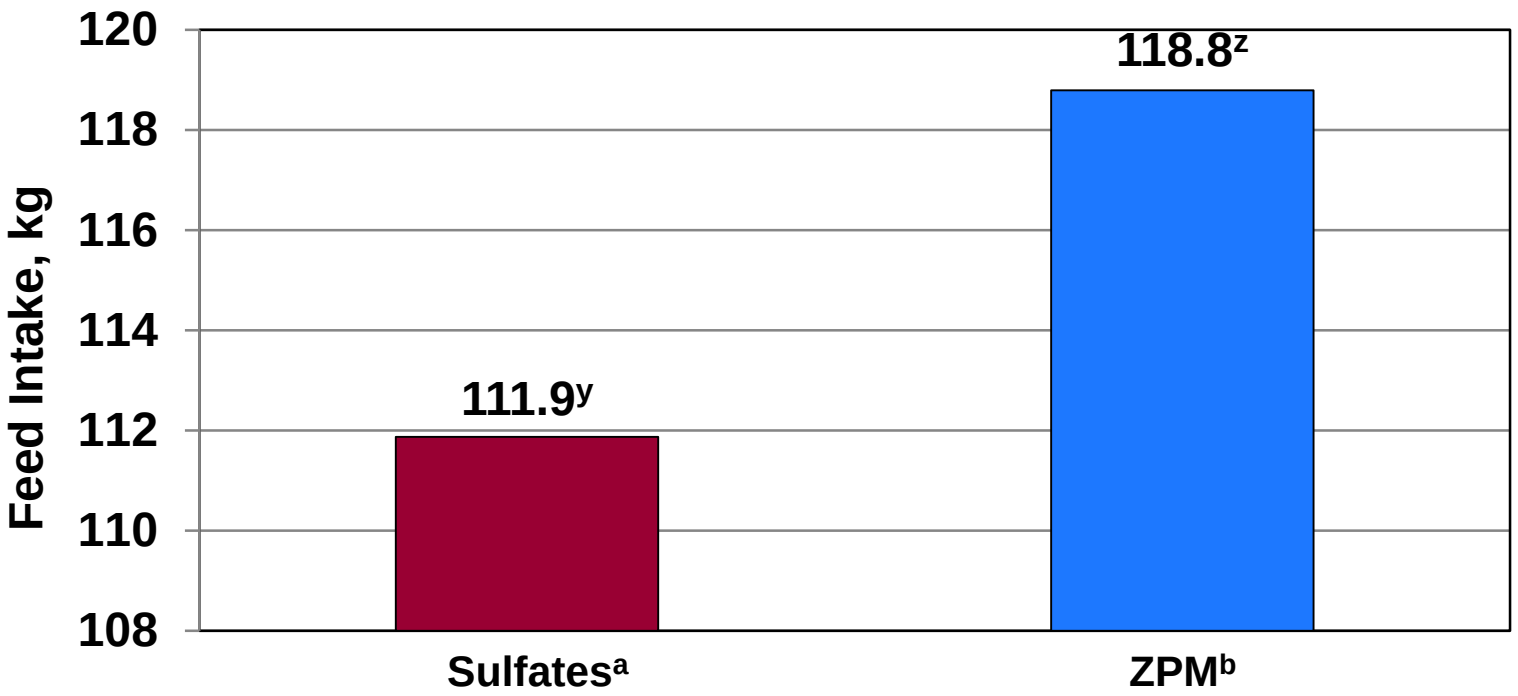
Feed Intake During 20 d Lactation



[a] Supplied 125 ppm Zn as zinc sulfate, 50 ppm Mn as manganese sulfate, 35 ppm Cu as copper sulfate

[b] Zinpro Performance Minerals: Partial substitution of 40 ppm Zn as Availa®Zn zinc amino acid complex, 20 ppm Mn as Availa®Mn manganese amino acid complex, 25 ppm Cu as Availa®Cu copper amino acid complex; Added On Top, 0.4 ppm Cr as MiCroPlex® chromium methionine (marketed outside North America as Availa®Cr)

[yz] Means lacking a common superscript letter differ, $P < 0.04$

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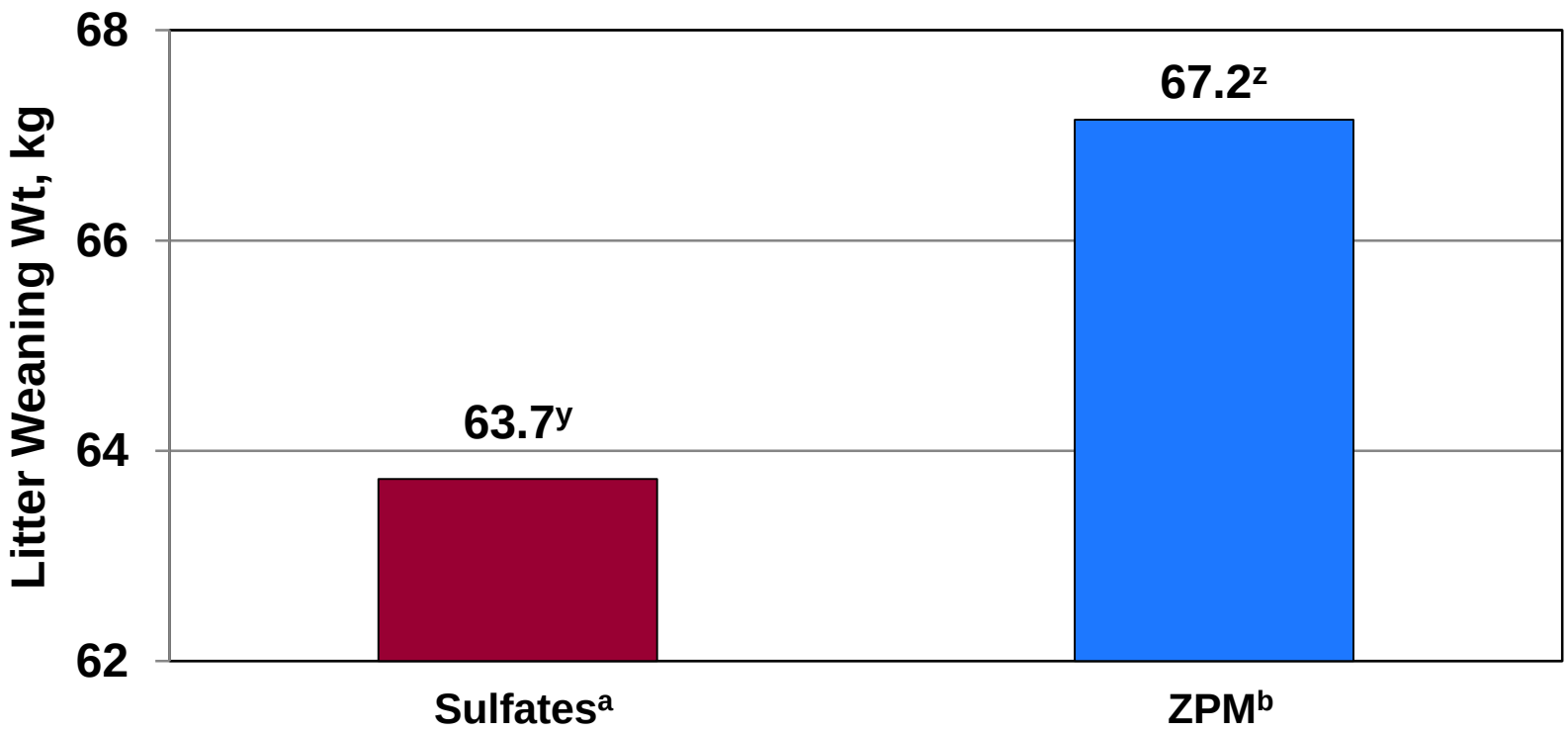
Litter Weaning Weights



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[yz] Means lacking a common superscript letter differ, $P < 0.075$

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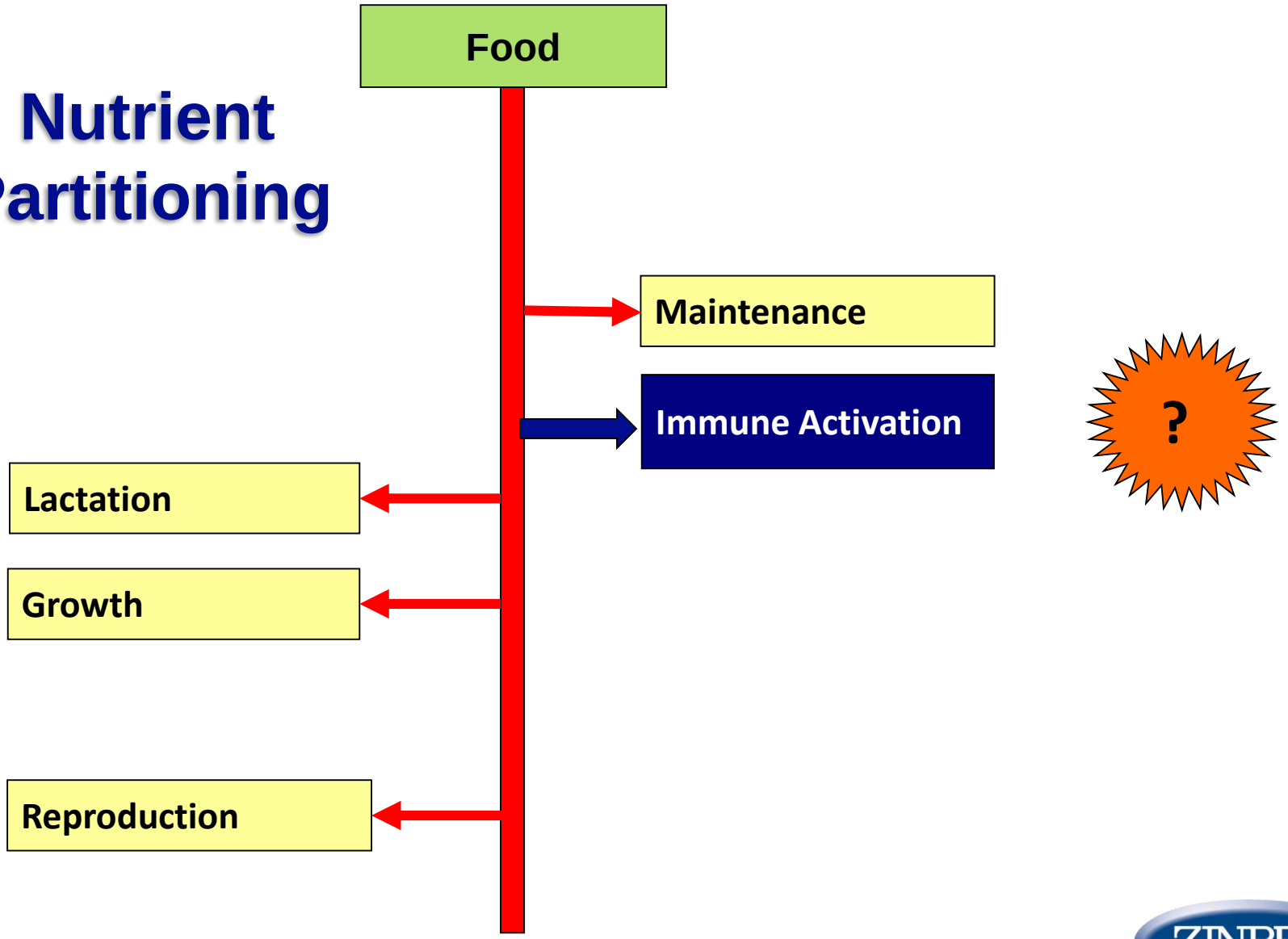
Nutrient Partitioning



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Animals Responses to Zinpro Performance Minerals

Improves:

- **Lameness**
- **Feed Intake**
- **Wean Weights**
- **Reproduction**

  Farrowing rate

  Litter size

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Sow Body Weight And Lactation Feed Intake

Item	Inorganic[a]	AA-C Minerals[b]	*P*-value
Sow body weight, kg			
After farrowing	252.8	252.0	0.620
At weaning	240.3	242.0	0.328
Sow weight change, kg			
During lactation	-12.1	-9.2	0.022
Sow feed intake[c]			
Lactation total, kg	121.5	127.7	0.005
Lactation, kg/d	5.95	6.24	0.010

[a] Inorganic: supplied 100 ppm Zn, 40 ppm Mn, 20 ppm Cu, as sulfates
[b] Availa-Sow; Partial substitution with 50 ppm Zn as Availa®Zn zinc amino acid complex, 20 ppm Mn as Availa®Mn manganese amino acid complex, 10 ppm Cu as Availa®Cu copper amino acid complex
[c] Adjusted means with lactation length as a covariate

Case Study: Spanish Multisite Production

- 65,000 sows
- 12% share of the domestic market
- More than one million pigs marketed annually
- 3 multiple site systems
- 75% parity segregation
- 68% sow replacement

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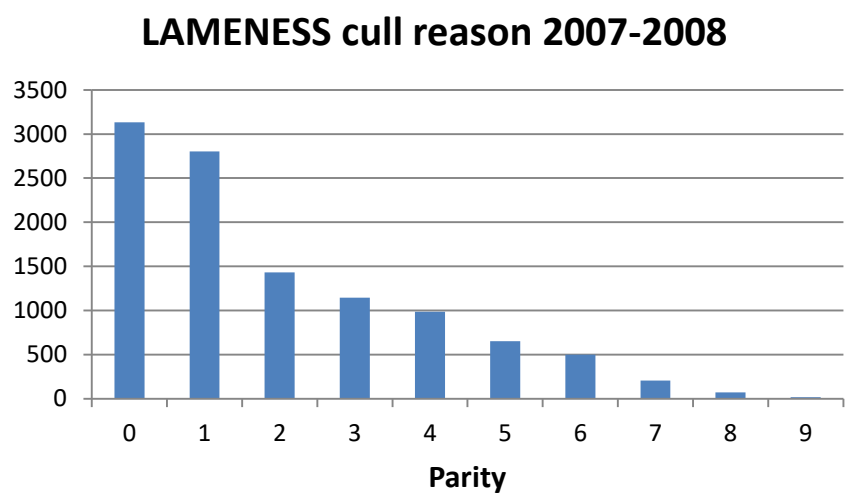
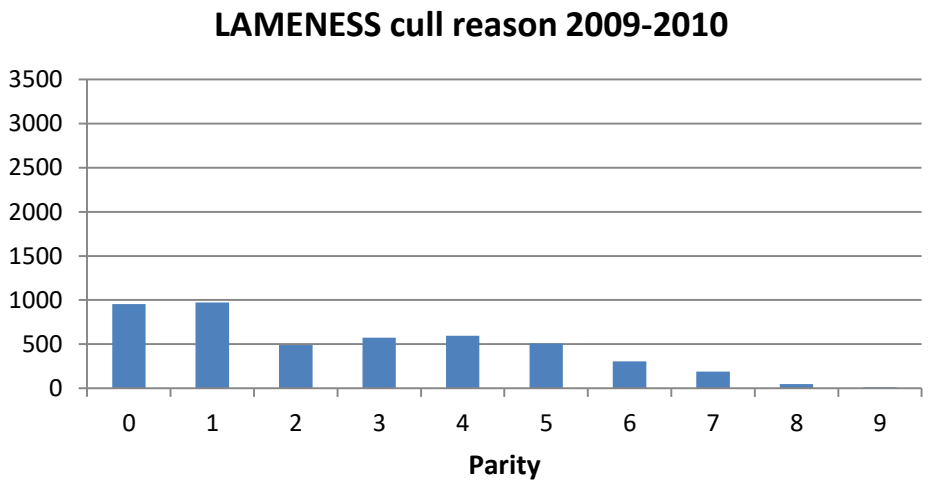
Parameter	2007-2008	2009-2010
Female culled	56%	41%
Lameness reason	16%	9%





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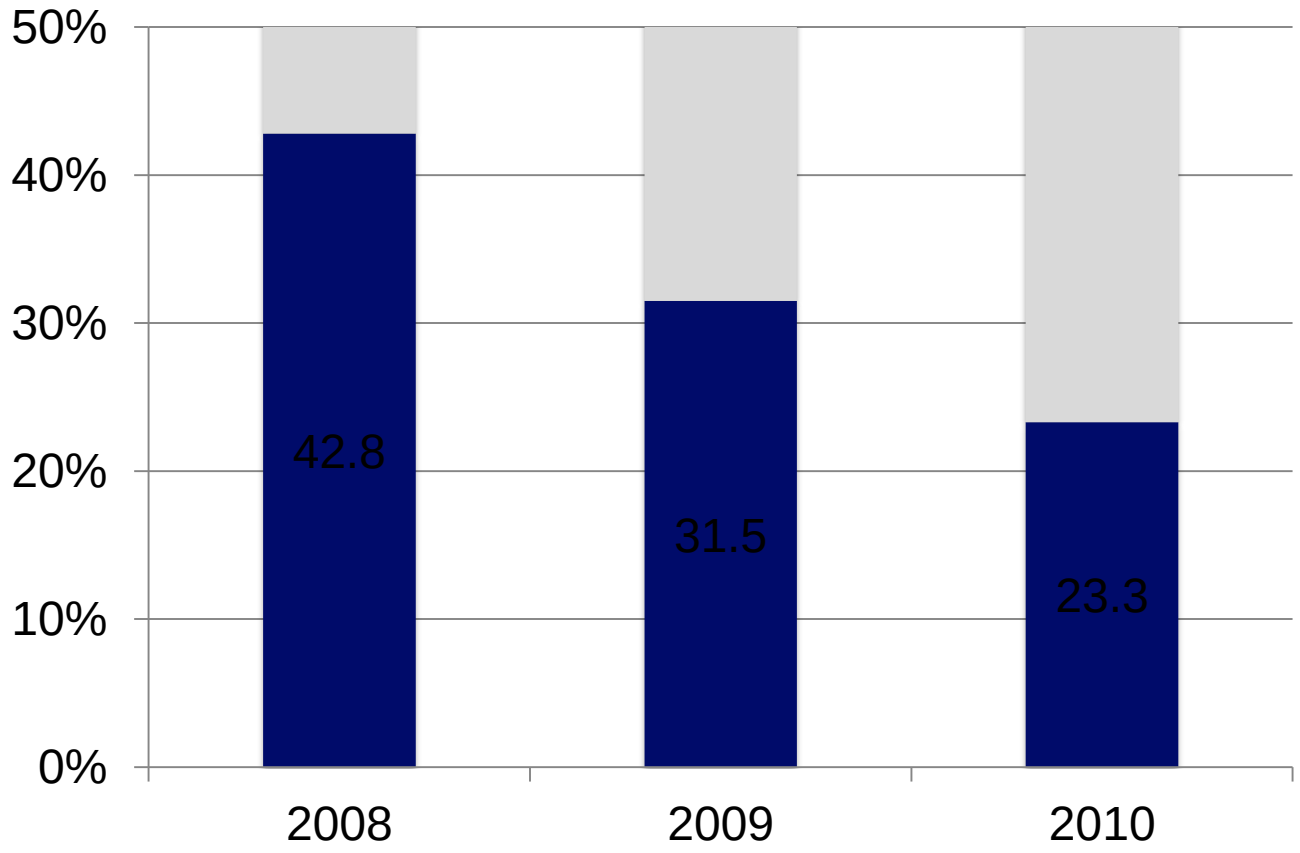
Sow Culling/Mortality Rate Trends

% Sows culled or dead before P3



Dr. Lali Coma Feliu , data reported in 2011 Barcelona, Spain

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5 Farms In Spain- Farrowing Rate % After Implementation Of Availa® Sow

Farms	2009	2010
GR 1	78.2	80.3
GR 2	77.4	81.7
GR 3	86.6	89.3
GR 4	71.9	73.9
GR 5	88.5	91.4
Mean	80.52	83.32 (85.7)

Dr. Lali Coma Feliu , data reported in 2011 Barcelona, Spain

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5 Farms In Spain- # Wean Pigs/S/Y After Implementation Of Availa® Sow

Farms	2009	2010
GR 1	25.8	26.7
GR 2	26.2	27.4
GR 3	29.7	31.0
GR 4	25.4	26.2
GR 5	28.6	30.4
Mean	27.14	28.34

Dr. Lali Coma Feliu , data reported in 2011 Barcelona, Spain

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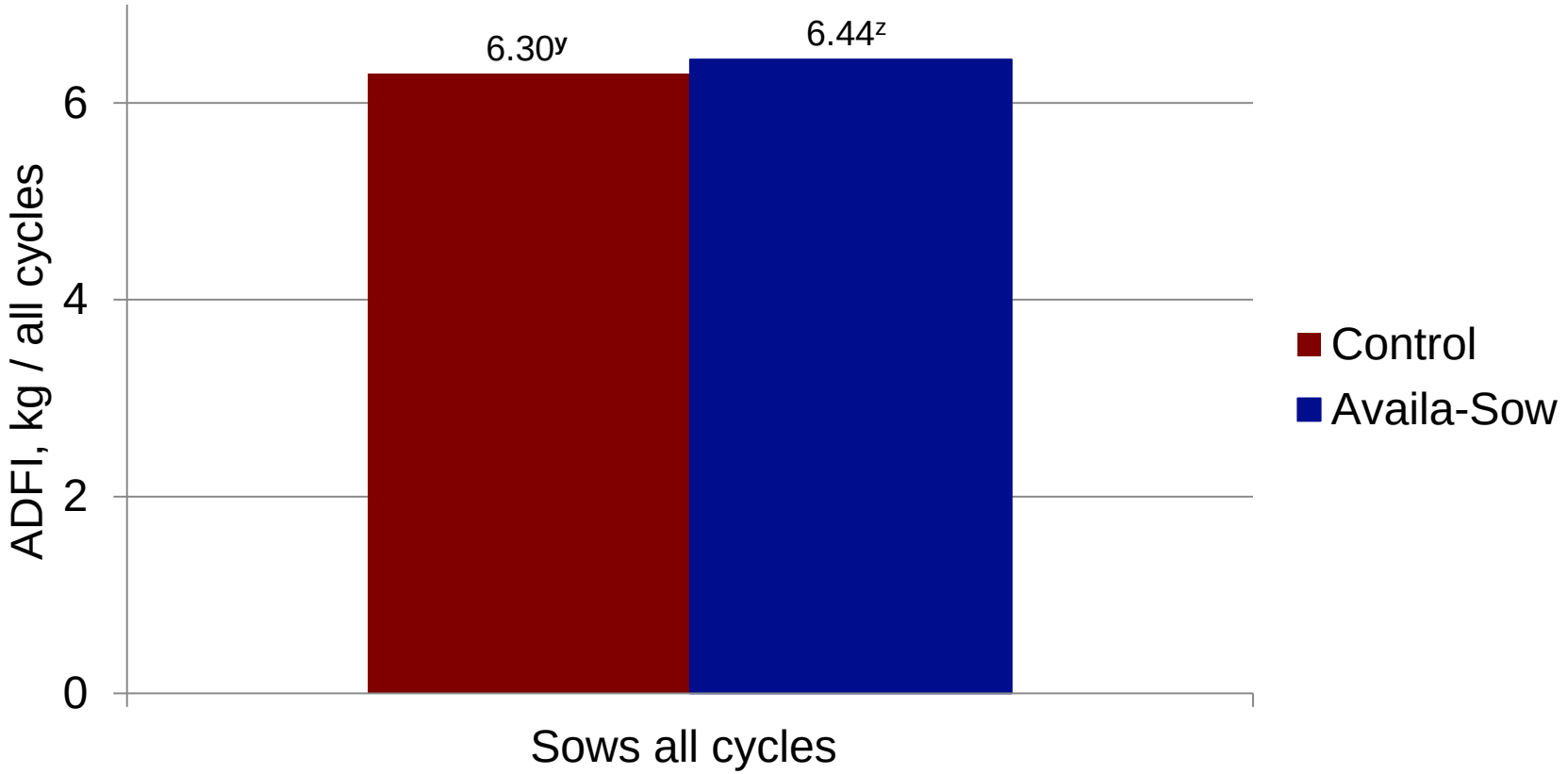
Three Parity Availa®Sow[a] Study: Sow Lactation ADFI[b], kg



[a] Availa-Sow provided as partial substitution of mineral sulfates; Zn 50 mg/kg, supplied as Zinc amino acid complex; Mn, 20 mg/kg, supplied as Mn amino acid complex; Cu, 10 mg/kg; supplied as Cu amino acid complex.

[b] Individual sow data (2,466) from each of 3 farrowing cycles were used as experimental units with 1,218 reps/trt

[yz] Letters differing P < 0.02. .

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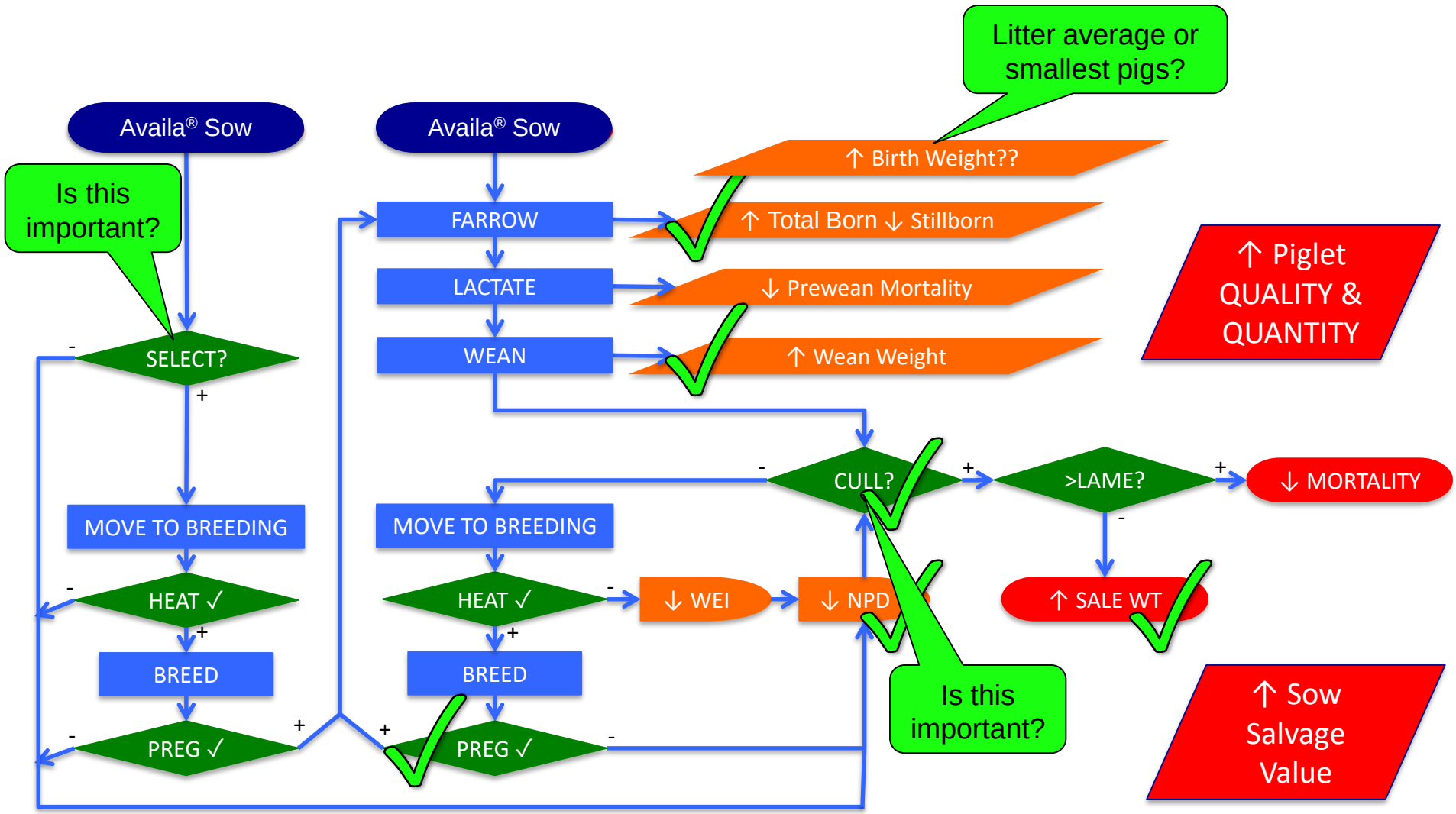
“Availa® Sow ” effects on sow performance



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Availa Sow Feet First

Cost/Benefit

Sow Investment

Sow cost	250 USD
Availa Sow Feet First cost/ton	8USD
Feed consumption/Year	1095Kg
Cost of Availa FF/sow/year	8.76USD

Improvement

Piglet increase 1 piglet/year	50USD
Reduce Sow culling 5%	12.5USD
Reduce medication cost 10%	0.45USD
Better health status	

Profit from using Availa Sow FF **54.19**USD/sow/year

ROI = 1: 8

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Availa Sow Feet First

Cost/Benefit for Gilt

Gilt Investment

Gilt cost	9000 Baht	$300
Availa Sow Feet First cost/ton	127.5 Baht	$ 40
Feed consumption(30-130 kg)	240Kg	240kg
Cost of Availa FF/gilt	30.6baht	$1

Improvement

Improve gilt selection use 5%	600B.	$20
Reduce FCR by 0.1	99B.	$3.2
Reduce medication cost 10%	12B.	$0.4

Better health status, better sow, longevity

Profit from using Availa Sow FF during gilt period **688**B/sow/year**$23**

ROI = 1: 30

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FeetFirst®

All kinds of feet – one expert.

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