



THE BIG 3

Rob van Schie

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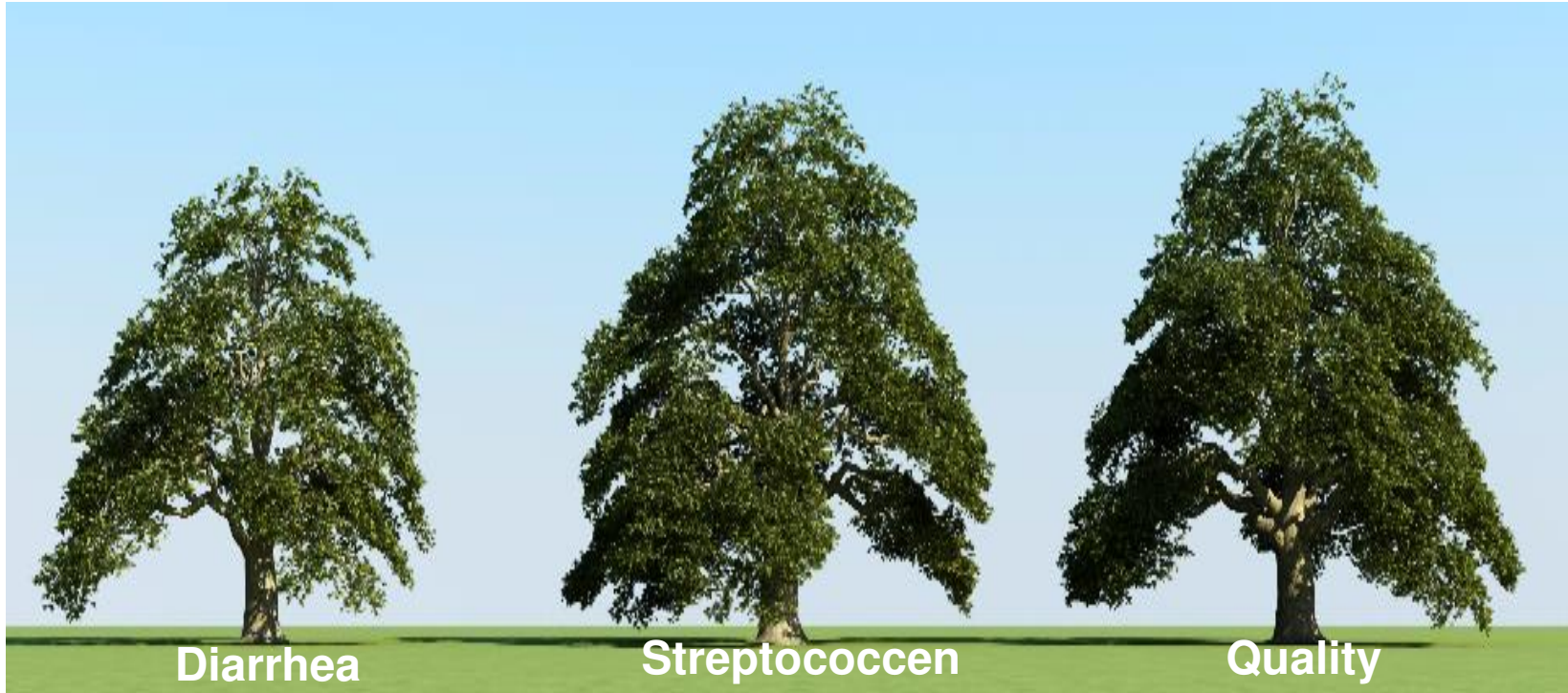


Rob van Schie,
PM piglet feed for De Heus general,
support clients Koudijs in EU

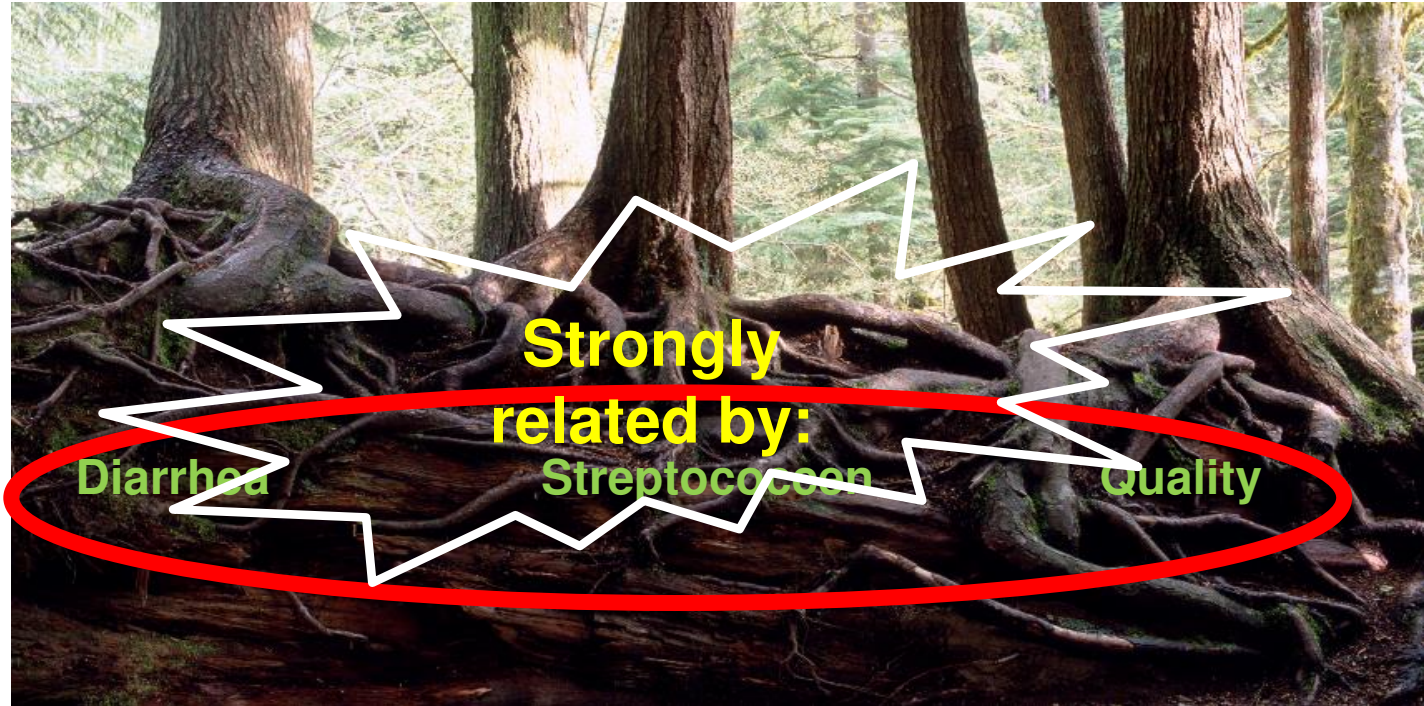
Koudijs: supplier feed mill factory's
(commercial and integrations), part of De
Heus company

De Heus is a family owned business in
production of animal feed, worldwide active.

The big 3



The big 3



Related by normal body response

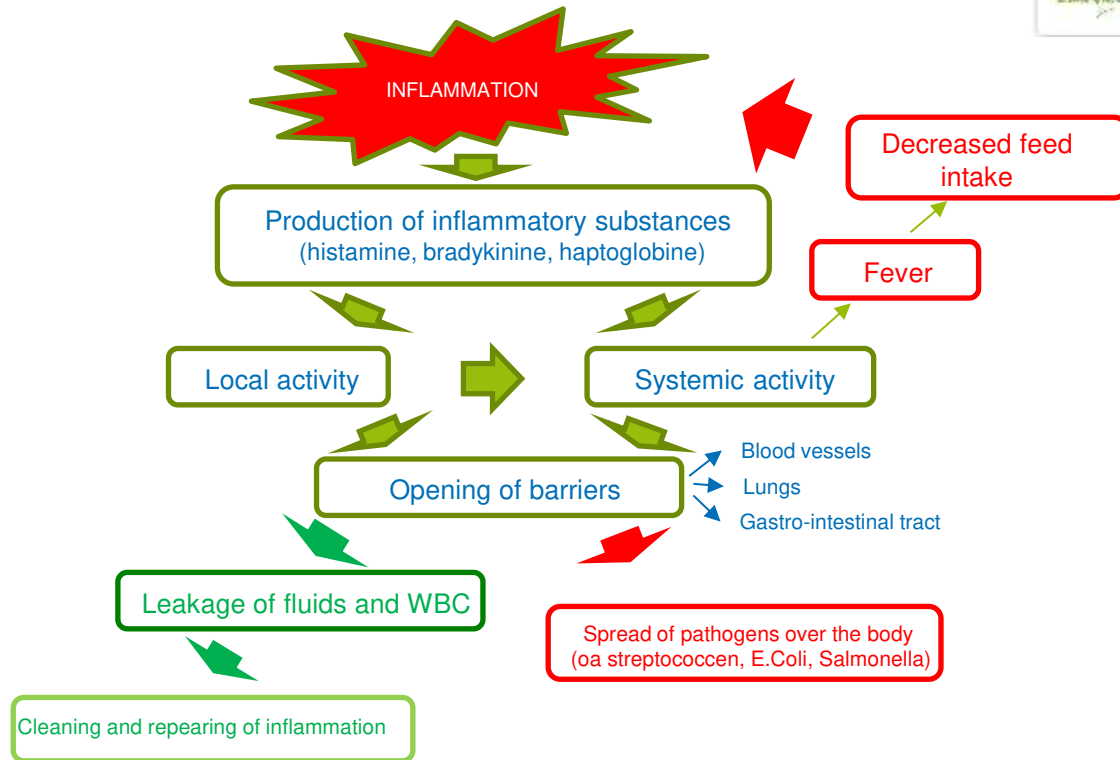


What is inflammation ?

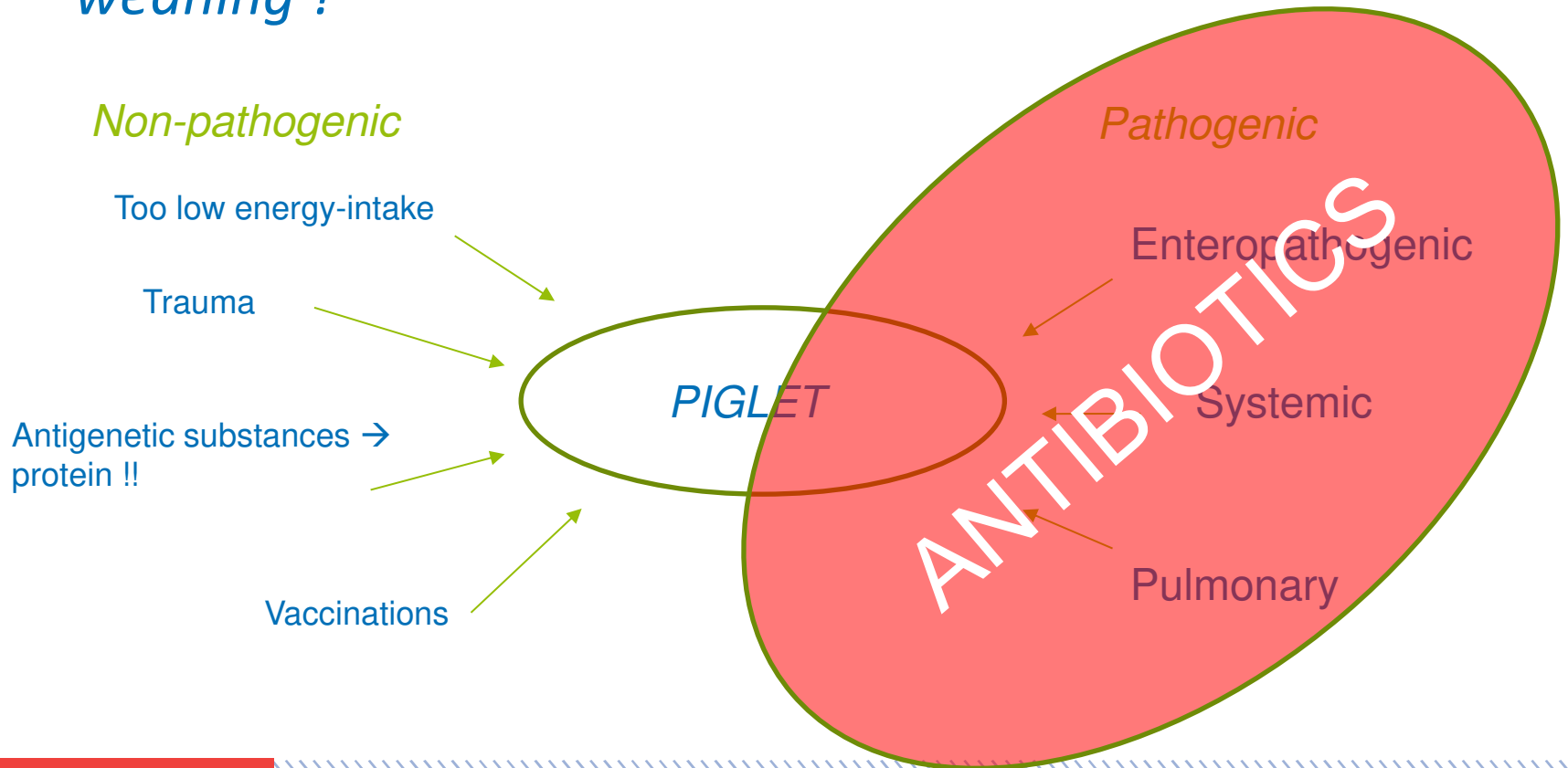
Inflammation

From Wikipedia, the free encyclopedia

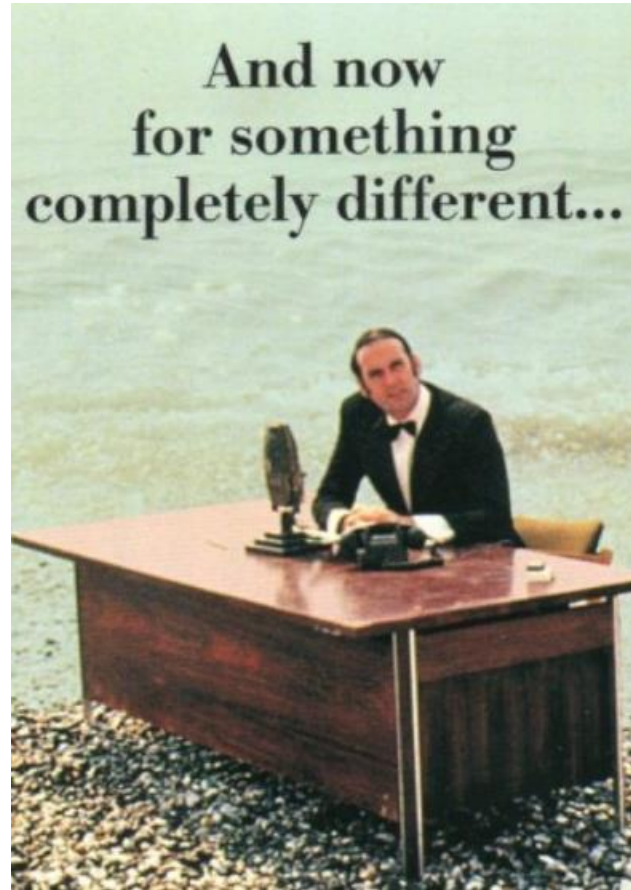
Inflammation (Latin, *inflammatio*) is part of the complex biological response of body tissues to harmful stimuli, such as [pathogens](#), damaged cells, or irritants.^[1]



Which 'triggers' do piglets meet after weaning ?



Advice



Advice by the Seagull method.....?????



Our Method



- Wished situation
- Norms (what)
- Background information (why)
- Advice (how)
- Result and advice (where to)

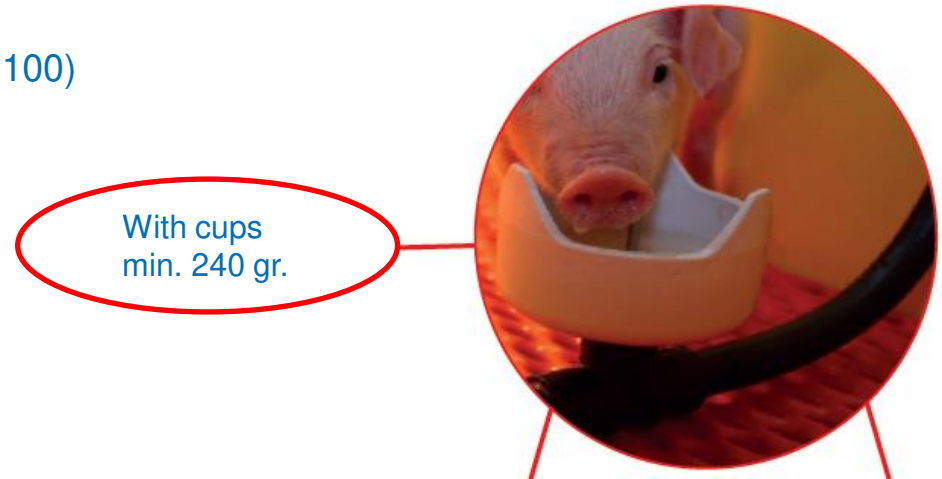
It all starts with

Norm min. litter weight in kg.:
Number of live born piglets + 4

Colostrum intake:
+ 80 gram/ piglet first 24 h (very good +100)

Start-up milk:
Birthweight X 1,8 (very good X 2,0)

Growth in rearing period
210-240 gram / day



In meanwhile we....

- ◆ Prepare the piglets for the weaning process:

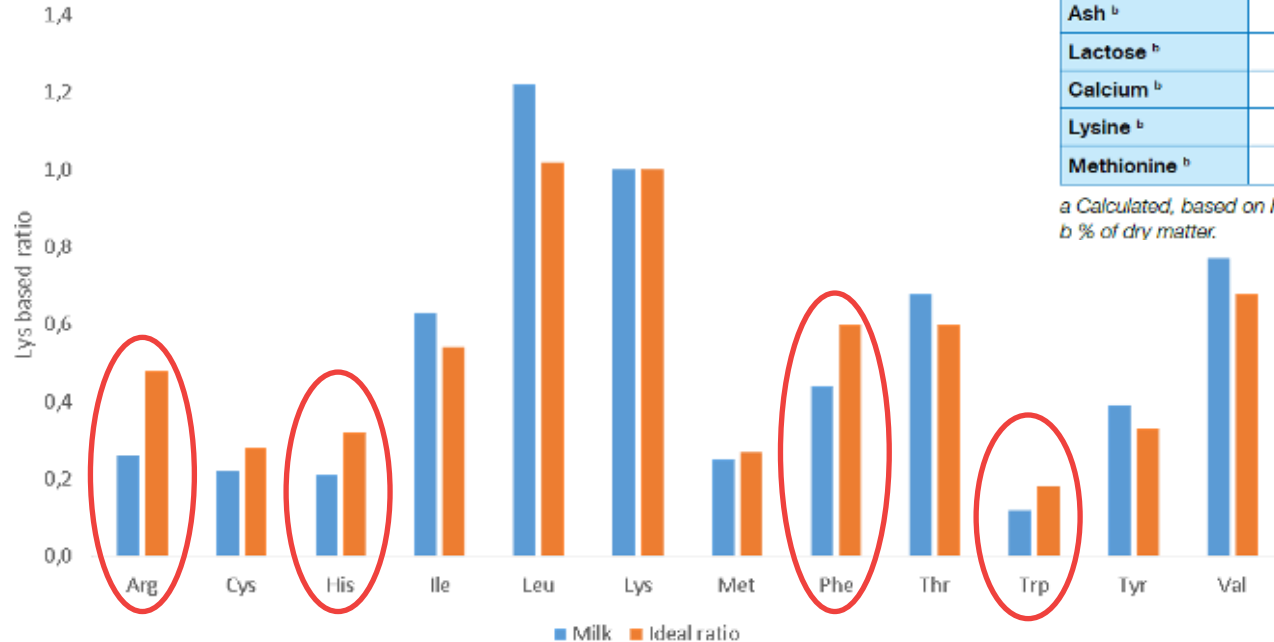
5 reasons to feed piglets before weaning

1. Survive
2. Growth & development
3. Learn to digest
4. Learn to eat
5. Learn to drink from a water nipple



Reason nr. 2 → growth & development

➤ Sow milk restricts growth by: composition



	Sow milk day 3 ^a	Sow milk day 7 ^a
Dry matter %	22.7	19.3
Crude Protein ^b	28.6	28.0
Crude fat ^b	42.7	39.4
Ash ^b	3.5	4.2
Lactose ^b	20.3	26.9
Calcium ^b		1.0
Lysine ^b		2.0
Methionine ^b		1.2

^a Calculated, based on Hurley, 2015.
^b % of dry matter.

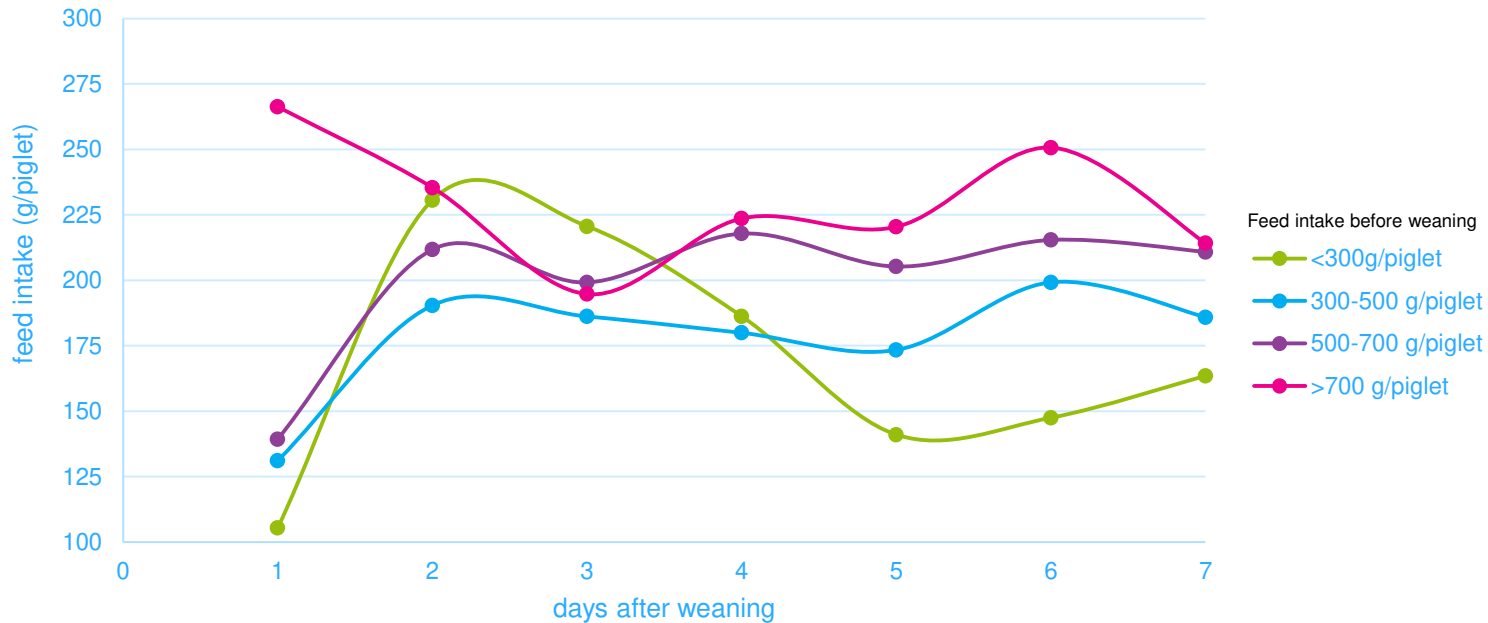
Growth & development



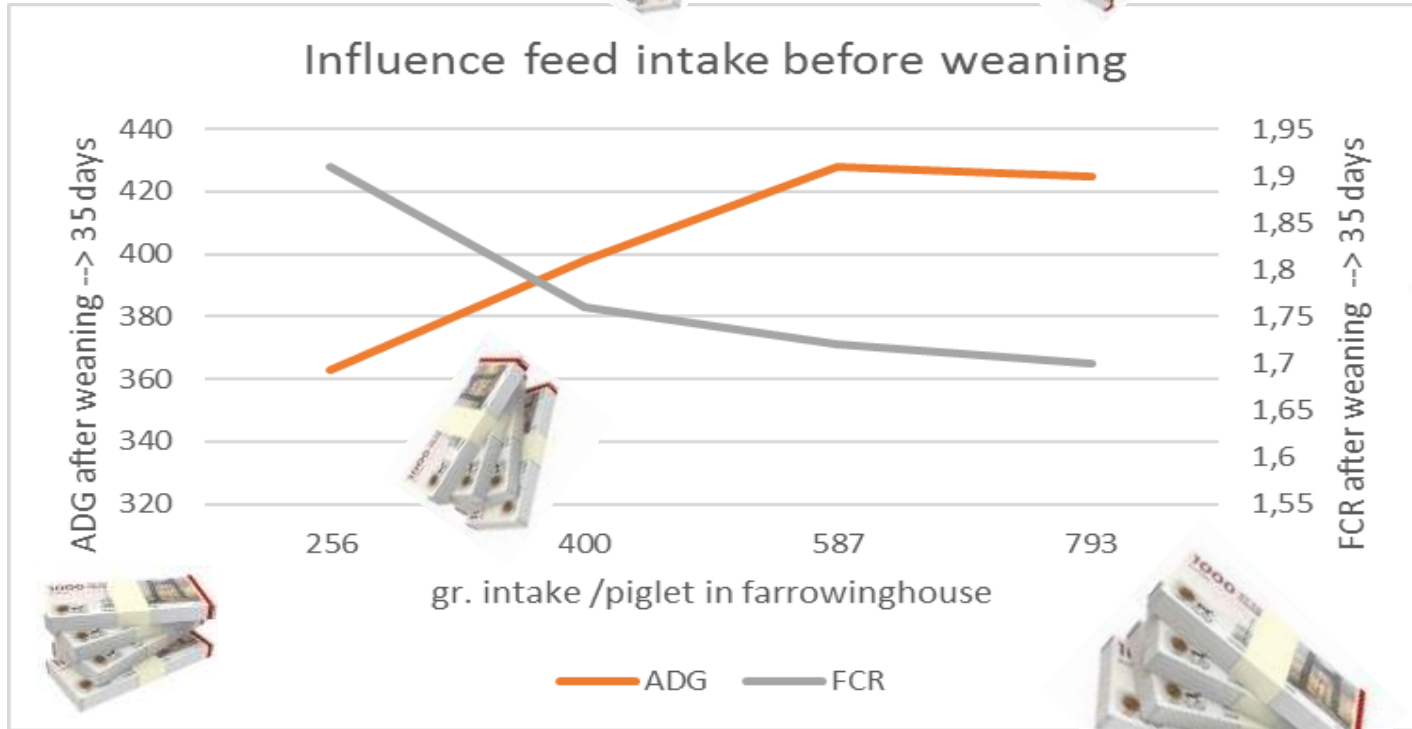
Long term effect early feeding

	no. 1 + no. 2	only no. 2	LSD	P-value
# animals	2378	2378		
Days to slaughter	175	182	0.8	<.001
Slaughtered weight	93,4	95,8	0.5	<.001
Live weight	118,0	120,1	0.6	<.001
Growth birth – slaughter	667	652	calculated	
meat%	60,2	59,5	0.1	<.001
Fat thickness	12,2	13,2	0.1	<.001
Muscle thickness	65,16	64,93	0.4	0.294

Learn to eat/digest



Learn to eat / digest

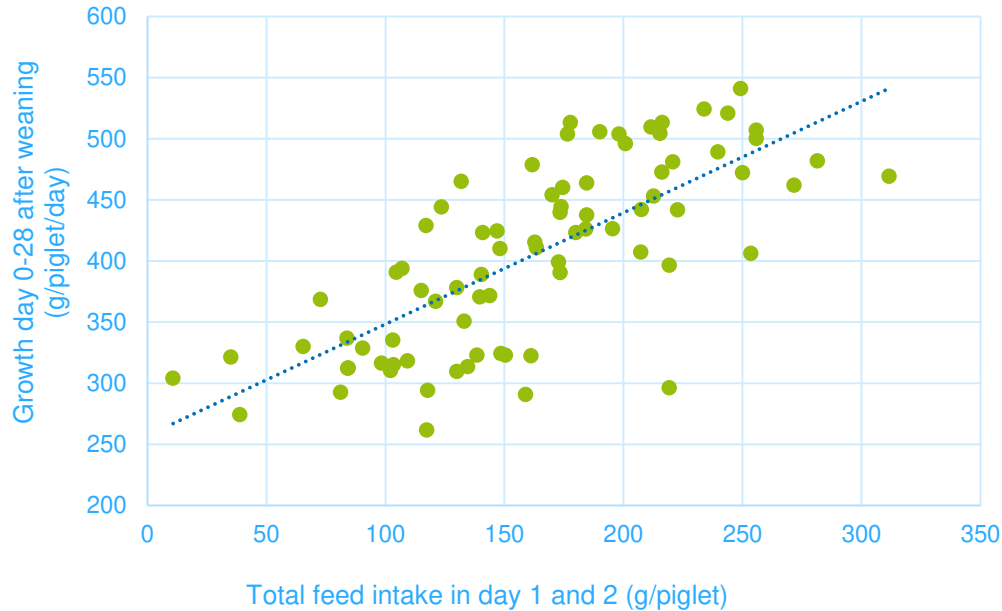


Learn to drink from a water nipple

- ◆ Before weaning 0,8-1 L milk → 20% DM
600 cc moisture
- ◆ After weaning 10% of body weight (7kg around weaning)



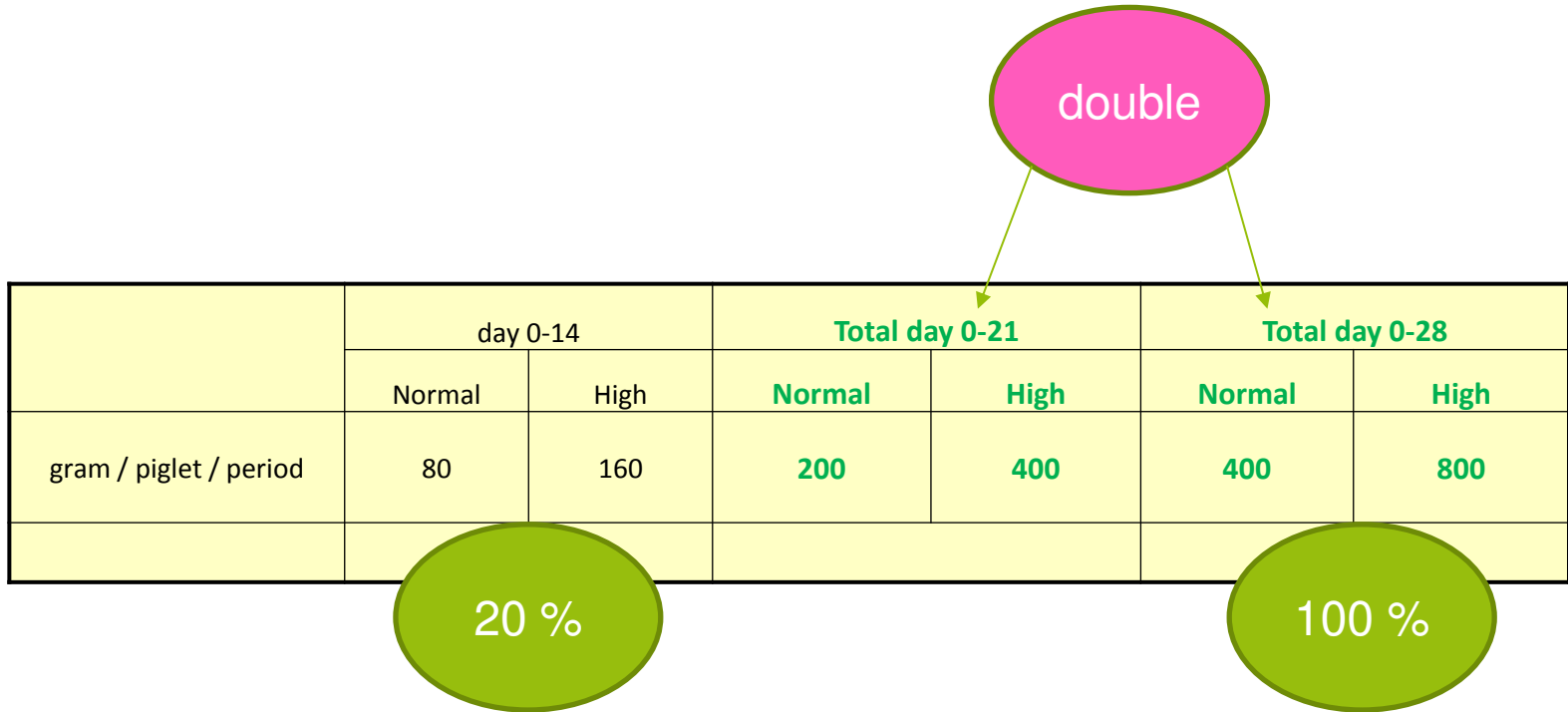
Research



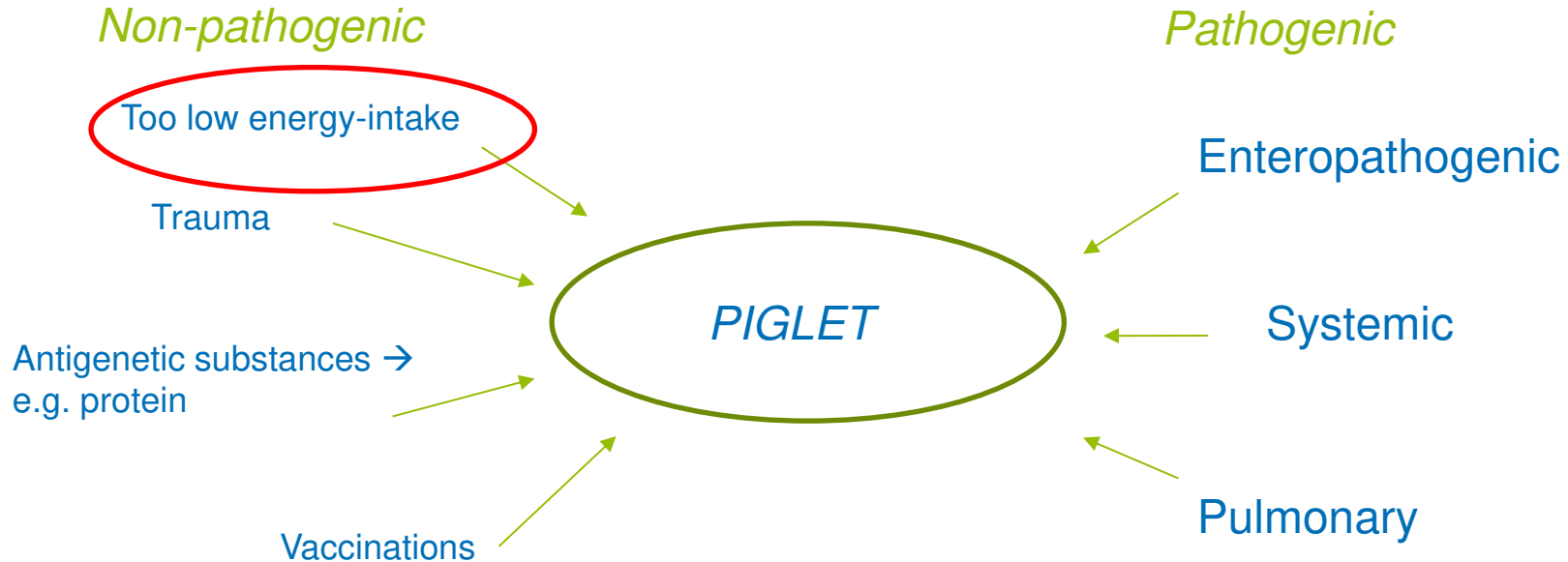
- Gastrointestinal tract better developed
- Improved health
- Less diarrhea
- Less streptococcus

Finally, improved growth

Intake norms before weaning



Which 'triggers' do piglets meet after weaning ?



Feed intake after weaning

FEED INTAKE AFTER WEANING						
	Weaning 21 days			Weaning 28 days		
	<i>Days</i>	<i>minimum</i>	<i>optimum</i>	<i>days</i>	<i>minimum</i>	<i>optimum</i>
First....days	4	400	500	3	400	500
First Week	7	1000	1600	7	1100	1700

Remark : Too high and too low feed intake are attention points !!!

Which 'triggers' do piglets meet after weaning ?

Non-pathogenic

Too low energy-intake

Trauma

Antigenetic substances →
e.g. microbiotic disorder

Vaccinations



Pathogenic

Enteropathogenic

Systemic

Pulmonary

Diarrhea after weaning :


Days after weaning	What do we see?
Day 1-2	<ul style="list-style-type: none"> • Diarrhea fluid as water, individually wet piglets • Piglets with diarrhea are thin, no mortality • Light and heavy piglets are sensitive • Can take long time before it improves (specially light piglets)
Day 3-4	<ul style="list-style-type: none"> • M • B • D • P
Day 5 and later	<ul style="list-style-type: none"> • D • N • C • M



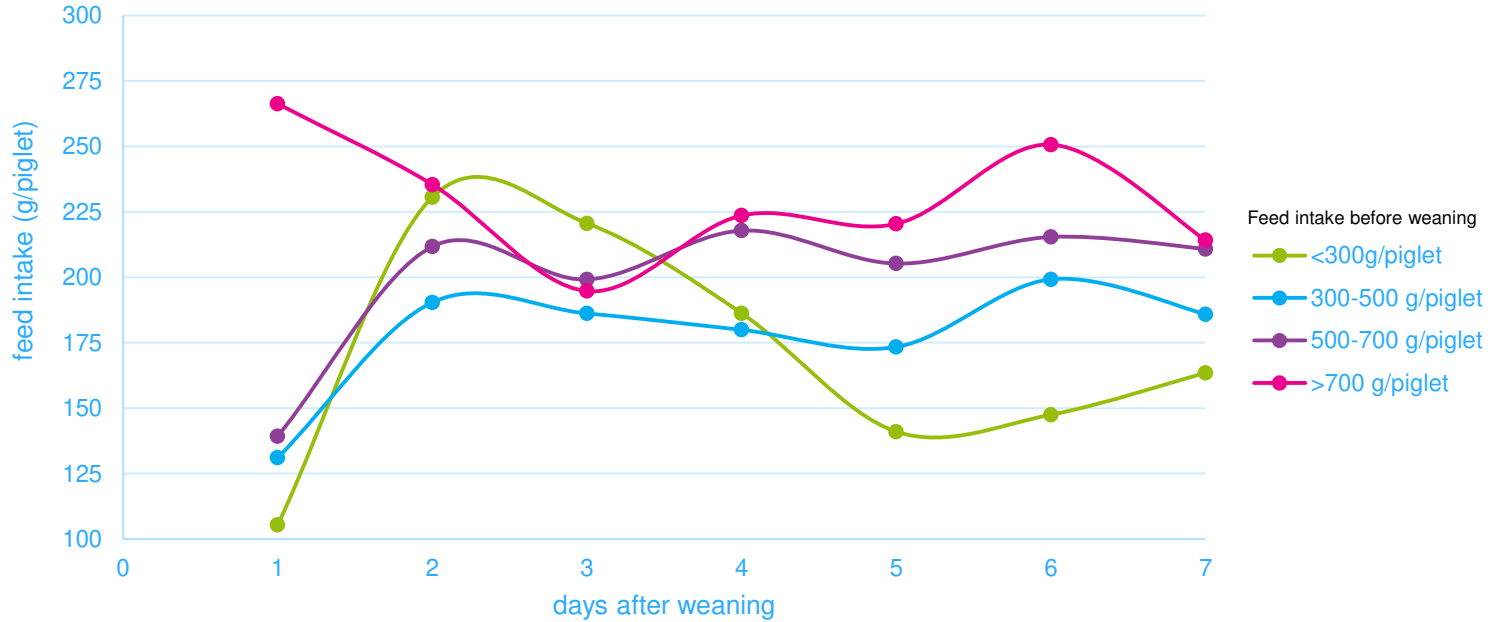
Solve diarrhea after weaning :

Days after weaning	Attention points
Day 1-2	<ul style="list-style-type: none">• [Redacted]• [Redacted]• [Redacted]• [Redacted]
Day 3-4	
Day 5 and later	

Solve diarrhea after weaning :

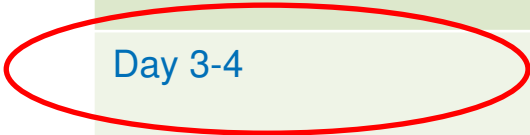
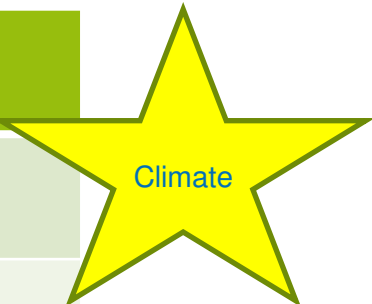
Days after weaning	Attention points
Day 1-2	
Day 3-4	<ul style="list-style-type: none">• 
Day 5 and later	

Training



Solve diarrhea after weaning :

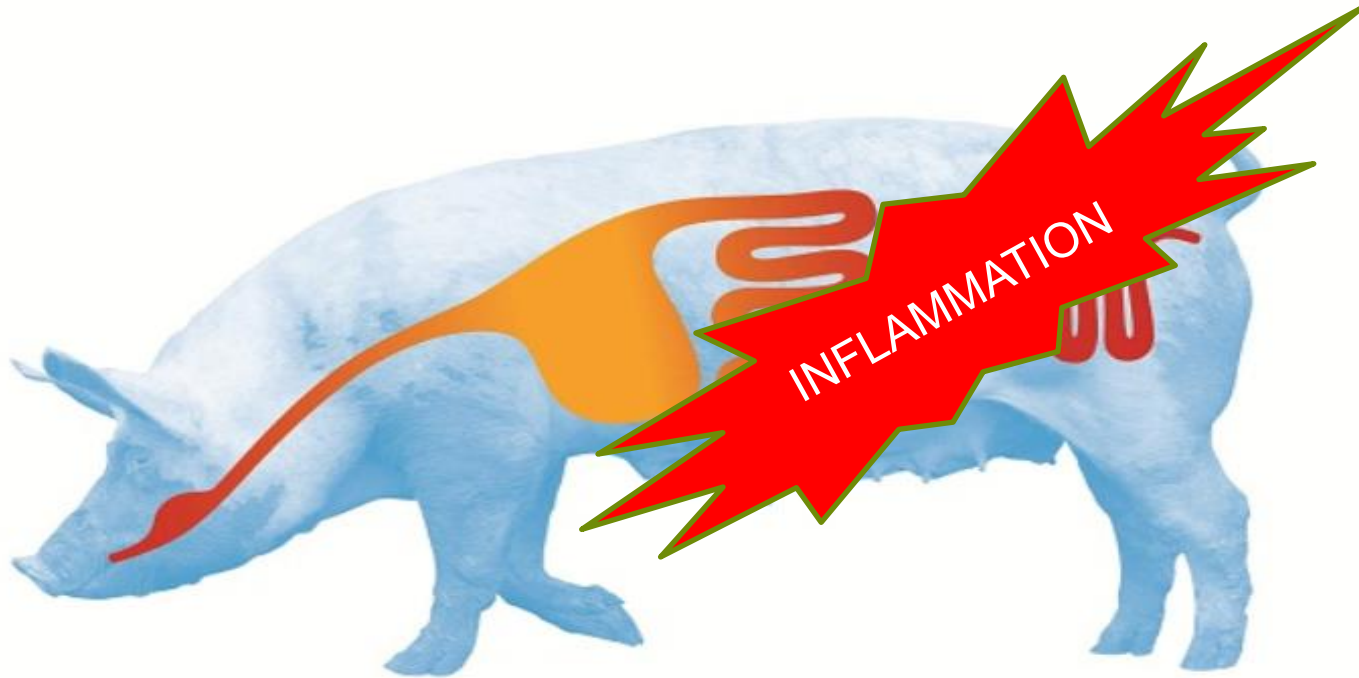
Days after weaning	Attention points
Day 1-2	
Day 3-4	<ul style="list-style-type: none"> • Training •
Day 5 and later	



Diarrhea after weaning :

Days after weaning	Attention points
Day 1-2	
Day 3-4	
Day 5 and later	<ul style="list-style-type: none">• [Redacted]• [Redacted]

Body response on diarrhea??



How to minimise further inflammation?

What do we know and what not?

◆ Protein 

◆ Starch 



◆ Amino acids, specific elements 



◆ Crude fibre 



Effect on immune system and intestinal integrity → less immunological reactions



Smaller Lymph nodes between intestines

Effect of crude fibre on weight of stomach :

Treatment	Stomach, %	Liver %	S.I. %	L.I. %	Kidney %	Lung %	Reminder %
1	0.84	3.06	4.54	2.89	0.67	2.06	1.36
2	0.94	2.98	4.35	2.4	0.6	2.07	1.22
3	1.07	3,8	5.26	2.72	0.78	2.19	1.43
4	1.18	3.44	5.62	2.71	0.73	2.52	1.29
SEM	0.04	0.125	0.2	0.14	0.032	0.103	0.071
<i>P</i>	0.001	0.148	0.017	0.854	0.254	0.107	0.976

Effect of bigger stomach on stomach pH :

Treatment	Gut Full, kg	Gut empty, kg	Stomach, pH	S.I. pH	Gut fill, kg	Gut fill, %	Empty BW, %
1	2.76	1.46	4.84	6.67	1.30	7.93	92.1
2	2.58	1.34	2.69	6.75	1.25	7.56	92.4
3	2.91	1.47	3.35	6.68	1.44	9.35	90.7
4	3.36	1.57	2.63	6.79	1.80	11.0	89.0
SEM	0.097	0.03	0.03	0.04	0.07	0.52	0.01
<i>P</i>	0.011	0.123	0.022	0.372	0.006	0.015	0,015

Summery

- ◆ Inflammation
- ◆ Seagull method
- ◆ Norms
- ◆ 5 reasons to feed piglets
- ◆ Birthweight and performance
- ◆ Intake before and after weaning
- ◆ 3 stages of diarrhea
- ◆ Starch and crude fibre knowledge but also in progress



Thank you

