

A close-up, grayscale photograph of a pig's face, focusing on its eyes and snout. The pig's skin is wrinkled, and its eyes are small and dark. The snout is large and prominent, with two dark nostrils. The background is dark and out of focus.

Dutch experiences with reduction of antibiotics and management

Marrina Schuttert DVM
“The Swinepractice”

Introduction: Marrina Schuttert

- Daughter of a pig farmer and trader
- Veterinary medicines Utrecht University (NL) - 1993
- Veterinair Centrum Someren BV (co-owner)
- Full time swine vet



Location Someren



- Multi species
- 26 vets
- Equine clinic
- Laboratory

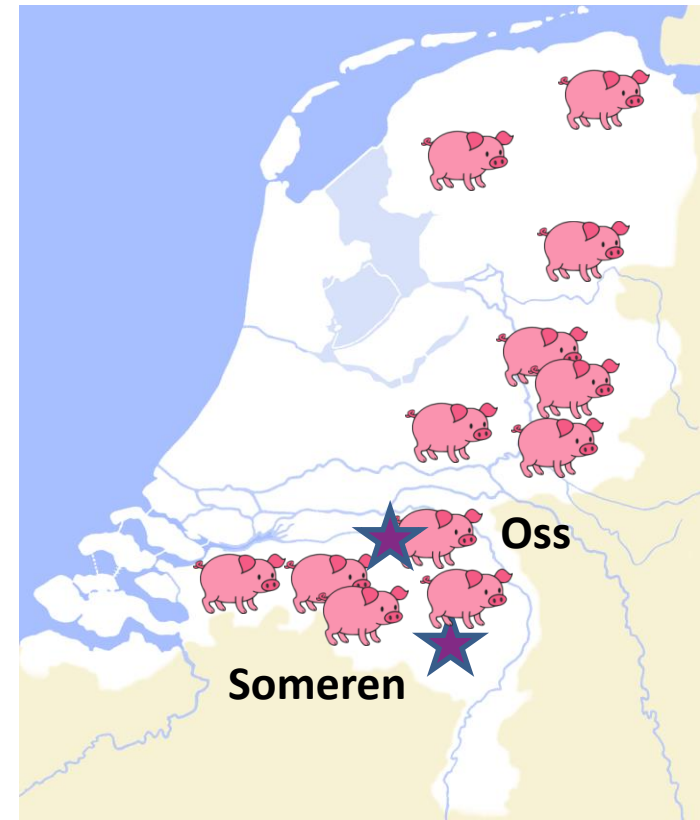
2018: new building!




“The Swinepractice”

De varkenspraktijk

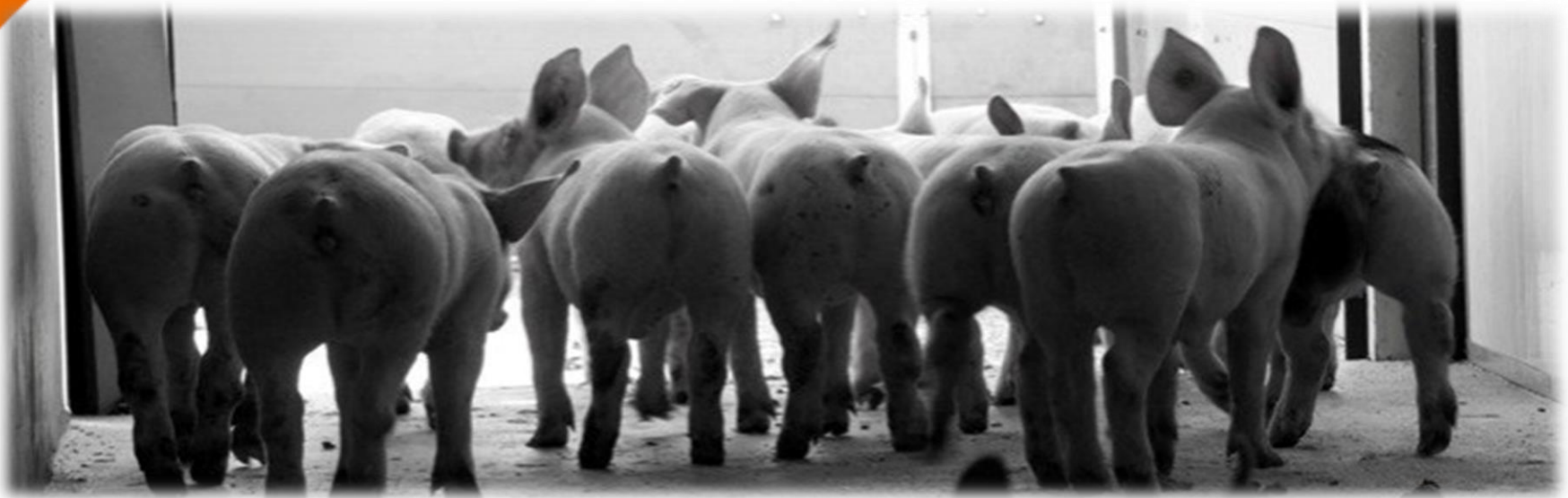
- Netherlands: ±890.000 sows
(south and east)
- De Varkenspraktijk:
 - 13 vets
 - 2 locations
 - 12-13% of swine production
 - Consultancy (Germany / Hungary / Belgium / Spain)



A photograph of several young pink piglets huddled together. One piglet in the foreground is looking towards the camera. A white thought bubble with a purple outline is positioned on the left side of the image, containing the text 'How can I stay healthy with less antibiotics??'. Three small white circles with purple outlines lead from the bubble towards the piglet's head.

How can I
stay healthy
with less
antibiotics??

HERD HEALTH MANAGEMENT



15 Important steps (Madec)

1. all in all out
2. limited cross-fostering
3. improving colostrum intake
4. cleaning and disinfection (reduce the germs in de surrounding)
5. low stocking density
6. good access to clean water
7. good access to a good quality of feed
8. no mixing of pigs = Contact structure (reduce transmission of germs)



15 Important steps (Madec)

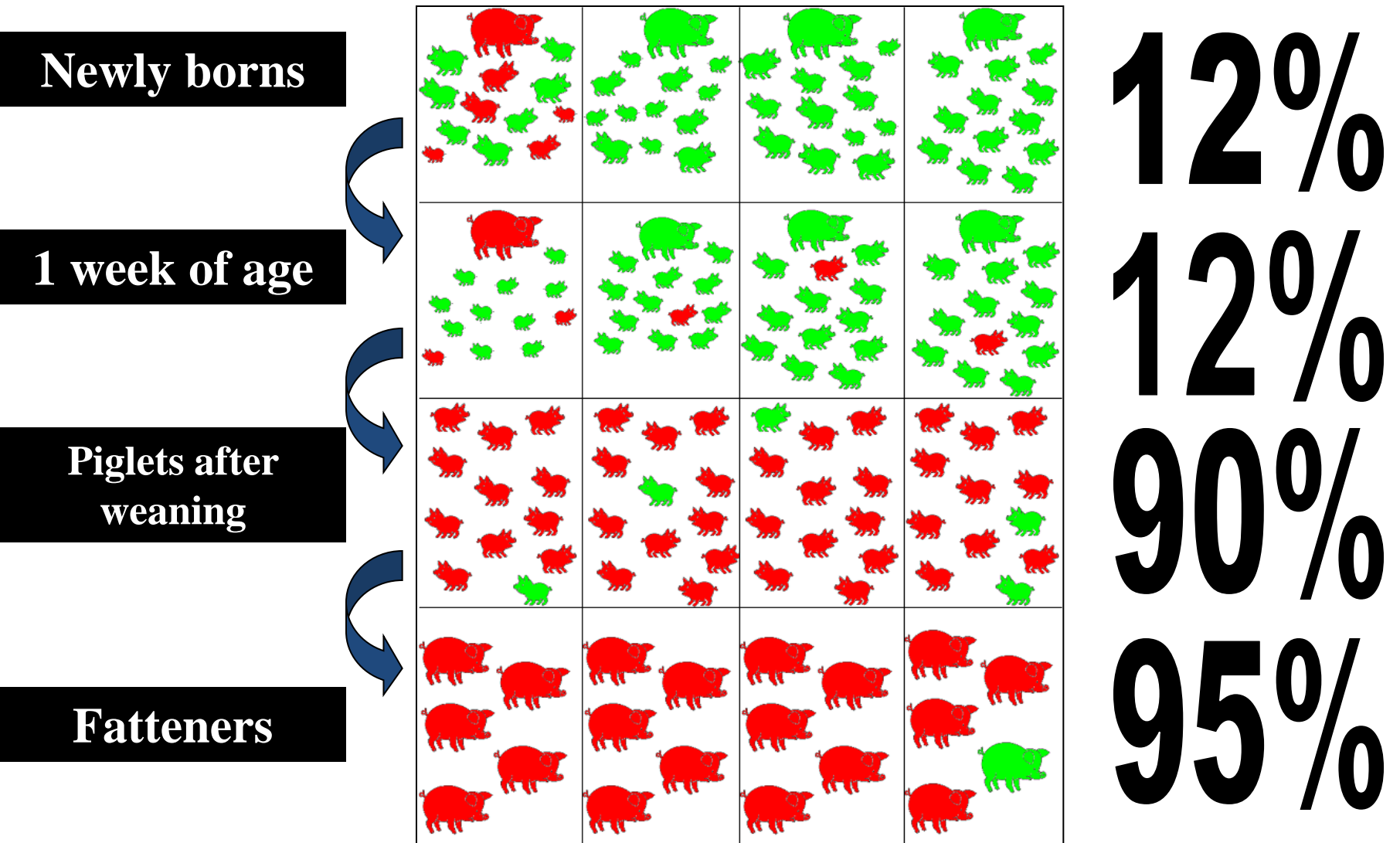
9. a good vaccination protocol
(decrease susceptibility for germs)
10. parasites treatment
11. separated farrowing - post weaning -
grow/finisher facilities
12. proper treatment of sick pigs
13. protocol to euthanize of sick pigs
(Remove Infectious animals)
14. strict hygiene in treatments of pigs
15. controlled temperature and a
good air quality.



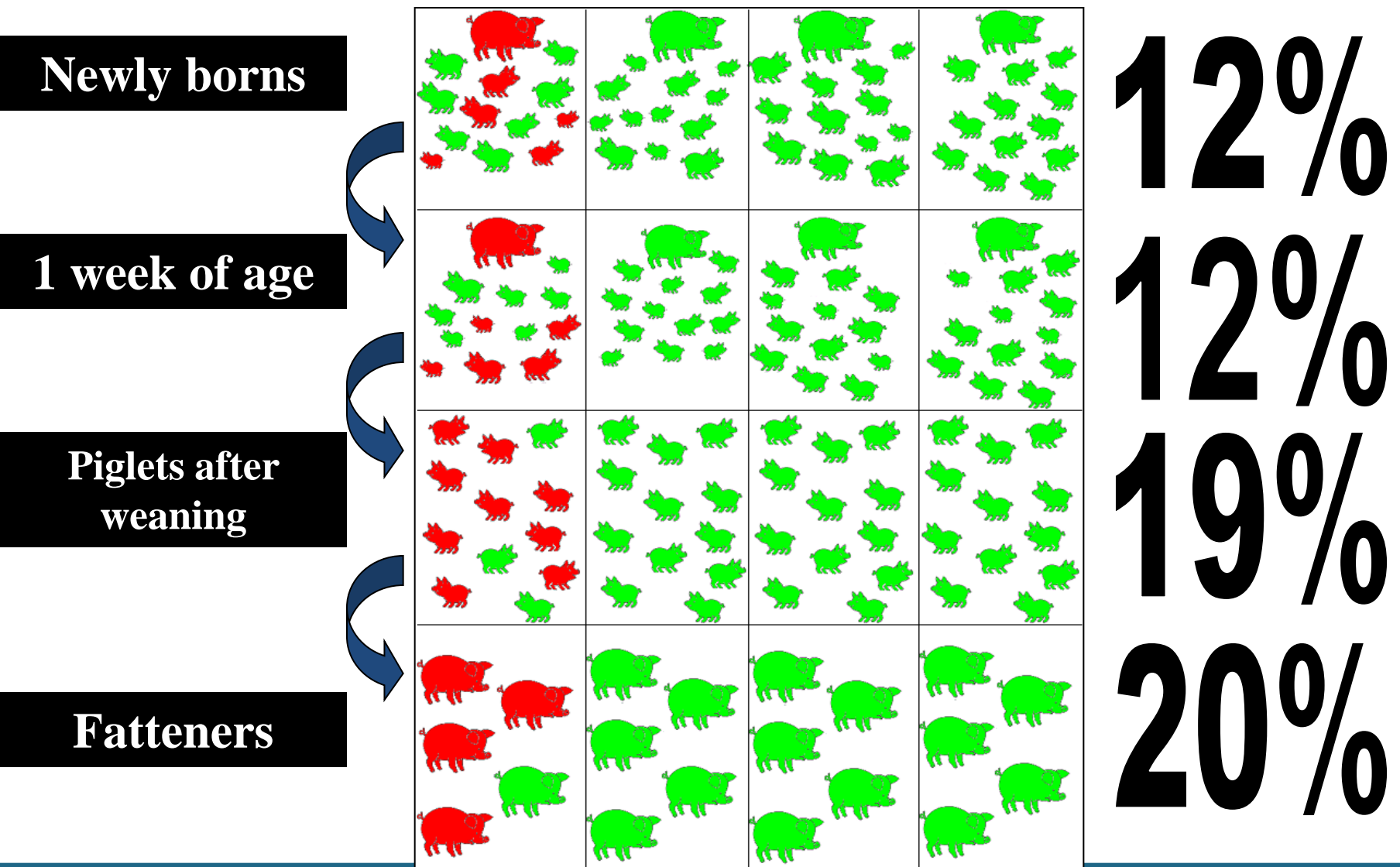
Practical aspects of Herd Health Management



Limited cross-fostering : Restrict mixing litters



Keeping litters together:



Cross-fostering

- Not the first 12 hours (colostrum!)
- The first born piglets (mark them after birth)
- From 1 sow to 1 other sow



First energy than antibodies

IgG Concentrations in Colostrum



Adapted from Le Dividich et al., 2006

Split – suckling

ONDERWERP: Immunocrit

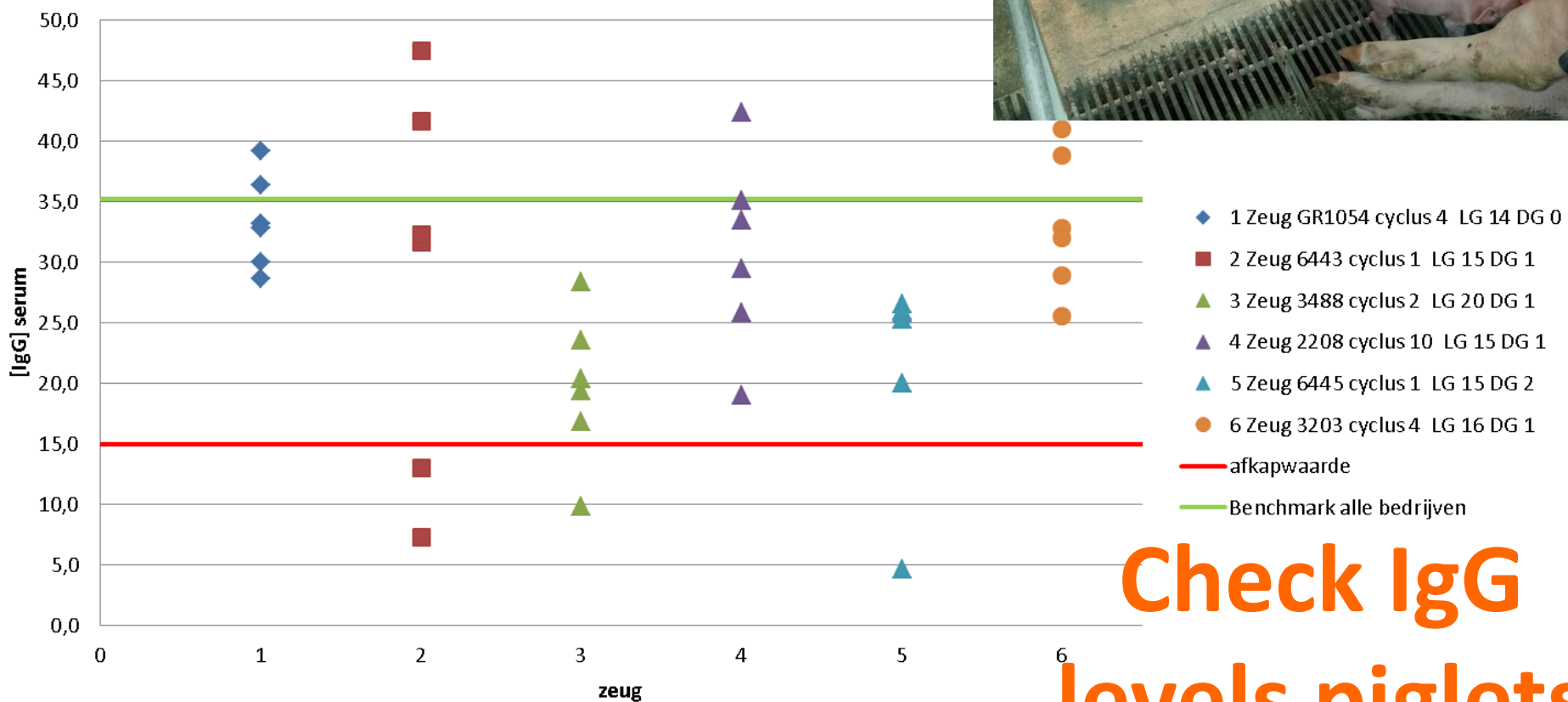
Gemiddelde [IgG] : 27,9 mg/ml

Gemiddelde overige bedrijven: 35,2 mg/ml

Waarden tov overige bedrijven: 79,25%



[IgG] per toom
individuele biggen per zeug boven elkaar v



Check IgG
levels piglets

Important before weaning

- Colostrum intake: > 250 ml/pig
- Weaning age: > 25 days
- Feed intake before weaning: > 450 gr/pig
- Learn to eat and digest solid feed
- Water intake before weaning !
(use of the nipple)



Water intake after weaning

Extra water:

- Nippel bar / extra drink cup
- First 3 days extra water in water bowl



Feed intake

Pigs like to eat
together !



Use clothes and disposable gloves, materials in different colors: it works!



Internal biosecurity

Different compartments for:

- Gilts/ Quarantaine
- Sows in gestation
- Farrowing units (one age/farrowing group /compartment)
- Weaner (same age /farrowing/litter/ group/pen)
- Fatteners (no mixing; keep litters /week groups / farrowing groups together)



Hygiëne

- Cleaning & disinfection
- No feed back!!

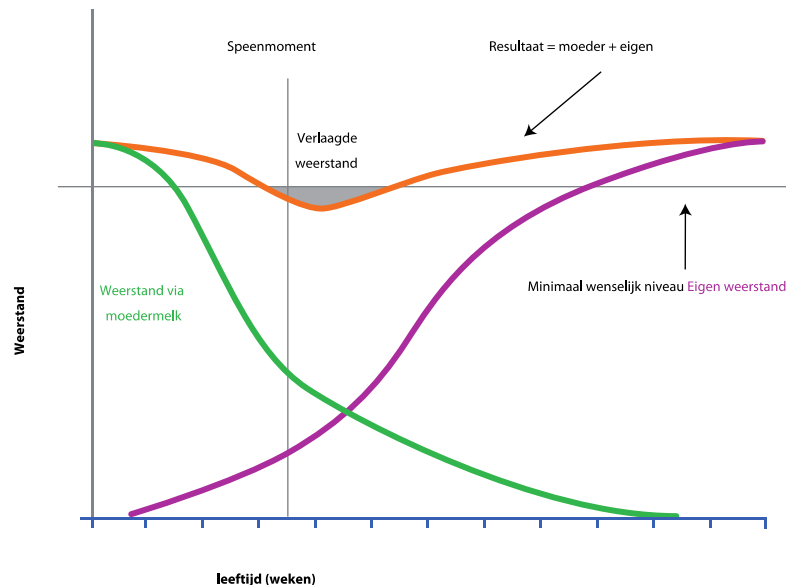


Challenges in weaned piglets



Challenges in abrupt weaning of young piglets

- Stress
- Immunity
- Milk -> Feed components + water
- Microbiome



Problems post weaning

- Low feed intake or anorexia
- Diarrhea
- Health problems
 - Strep. suis infections
 - Oedema disease
 - Respiratory disease
 - Etc.



A practical *case* of post weaning diarrhea

- 500 sows closed herd
 - 5-week system
- Post weaning
 - Diarrhea within 1 day
 - Growth retardation
 - Lack of uniformity
 - High mortality (> 5%)
 - Use of antibiotics (colistine)



Plan of action



Data collection

- Piglets
- Housing
- Weaning process
- Water
- Feed
- Health



Piglets

- Age
- Weight
 - Litter
 - Individual
- Feed intake before weaning
 - 21 days > 300 gram/piglet
 - 28 days > 500 gram/piglet
- Health



Housing

- Layout
 - Group size (10-25)
 - Feeding/drinking places
 - Functional spaces
- Hygiene
- Climate
 - Temperature
 - CO₂/NH₃
 - Moist
 - Air flow



Case: Temperature

	Temp (>28 °C)	Temp (>28 °C)	Temp (>27 °C)
Department	Day 1 (=time of weaning)	Day 2	Day 7
7	24,1	26,0	28,5
8	23,1	25,6	27,9
9	20,9	25,8	26,5
10	19,8	25,6	27
11	20,5	27,7	28,2
12	20,2	27,1	28,5
13	19	27,2	27,8
14	16,4	26	26,3
15	17,5	26,2	27,1

Weaning process

- Farrowing room before removal
 - Time without sow
 - Time without feed in trough piglets
- Pig flow
- Transport
- Animal handling
- Weaning department
 - Temperature
 - Time until feed in trough after weaning
 - Water availability



Case: Weaning process

- Removal sows 8.00-9.30 h
- Removal piglets 10.00-12.00 h
 - Mixing
 - High density of piglets
 - Sorting by weight
- No feed in trough piglets in farrowing-room on the day of removal
- First feed in trough after lunch
- Temperature too low



Water

- Intake
- Quality
 - Chemical composition
 - Pollution
 - Bacteria
 - Yeast
 - Mold/fungi



Case: Water intake

	Department 19 Intake (l/day)	Department 11 Intake (l/day)
0-1 days	0,47	0,90
1-2 days	0,41	1,12
2-5 days	0,29	0,99
5-7 days	0,73	1,21



Feed

- Intake

- 21 days:
 - 0,5 kg 0-4 days
 - 1,5 kg 0-7 days
- 28 days
 - 0,5 kg 0-3 days
 - 2,0 kg 0-7 days



- Stimulation of feed intake first 3 days
- Composition/transitions



Case: feed intake

Days after weaning	Department 19 (g/day)	Department 11 (g/day)	(g/day)
1	50 feed 1	150 feed 1	165
2	114 feed 2	177 feed 2	180
3-5	124 feed 2	174 feed 2	210
6-7	184 feed 2	195 feed 2	250
Total	904	1239	1475

Health of piglets

- Diseases
- Vaccination
 - Type of vaccination
 - Moment
- Medication of piglets
 - "standard" medication of piglets in farrowing stable
 - group medication after weaning



Case: Plan of action

- Piglets
- Housing
 - Layout
 - Climate
- Weaning process
- Water
- Feed
 - Composition
 - Stimulation first 3 days after weaning
- Health



Case: feed intake after intervention

Days after weaning	Department 19 (g/day)	Department 11 (g/day)	(g/day)
1	66 feed 1	149 feed 1	165
2	164 feed 1	157 feed 1/2	180
3	248 feed 1	214 feed 2	210
4	248 feed 2	214 feed 2	210
5	248 feed 2	214 feed 2	210
6	214 feed 2	222 feed 2	250
7	214 feed 2	222 feed 2	250
Total	1402	1392	1475

Case: Result

- First week after weaning good healthy piglets.
- BUT....
 - PROBLEMS FROM DAY 10 AFTER WEANING
 - Lack of uniformity
 - Mortality (Oedema disease)



Case: feed intake

Days after weaning	Department 19 (g/day)	Department 11 (g/day)
1	66 feed 1	149 feed 1
2	164 feed 1	157 feed 1/2
3	248 feed 1	214 feed 2
4	248 feed 2	214 feed 2
5	248 feed 2	214 feed 2
6	214 feed 2	222 feed 2
7	214 feed 2	222 feed 2
8	270 feed 2/3	270 feed 2/3
9	330 feed 2/3	330 feed 2/3
10	410 feed 2/3	410 feed 2/3

Health – Post mortal

Nr	Identificatie	Materiaal	Onderzoek	Methode
E. coli F4 virulentie factoren Typering				
001	Big 1 Geen nummer		Niet aangetoond	
002	Big 2 Geen nummer		Niet aangetoond	
003	1337301–4101		Niet aangetoond	
E. coli F18 virulentie factoren Typering				
001	Big 1 Geen nummer		Aangetoond	
002	Big 2 Geen nummer		Aangetoond	
003	1337301–4101		Aangetoond	
E. coli F41 virulentie factoren Typering				
001	Big 1 Geen nummer		Niet aangetoond	
002	Big 2 Geen nummer		Niet aangetoond	
003	1337301–4101		Niet aangetoond	
E. coli STX2e virulentie factoren Typering				
001	Big 1 Geen nummer		Aangetoond	
002	Big 2 Geen nummer		Aangetoond	
003	1337301–4101		Aangetoond	

Plan of action part 2

- Stimulating feed intake day 4-7
 - Composition feed 2
- Vaccination
 - Shigatoxine
 - Ecoporc shiga
 - day 4





**Thank you for your
attention !**