

A close-up photograph of a pig's face, showing its eyes, ears, and large, pink, textured snout. The pig has light-colored, slightly curly hair. The background is dark and out of focus.

Dutch experiences with herd diagnosis, batch medication and reduction of antibiotics

R. Janssen DVM
“The Swinepractice”

Content

- “The Swinepractice” / De Varkenspraktijk
- Antibiotic reduction, rules and guidelines in the Netherlands.
- How to diagnose bacterial infections?
- Herd health management
- Practical aspects
- The future in Europe

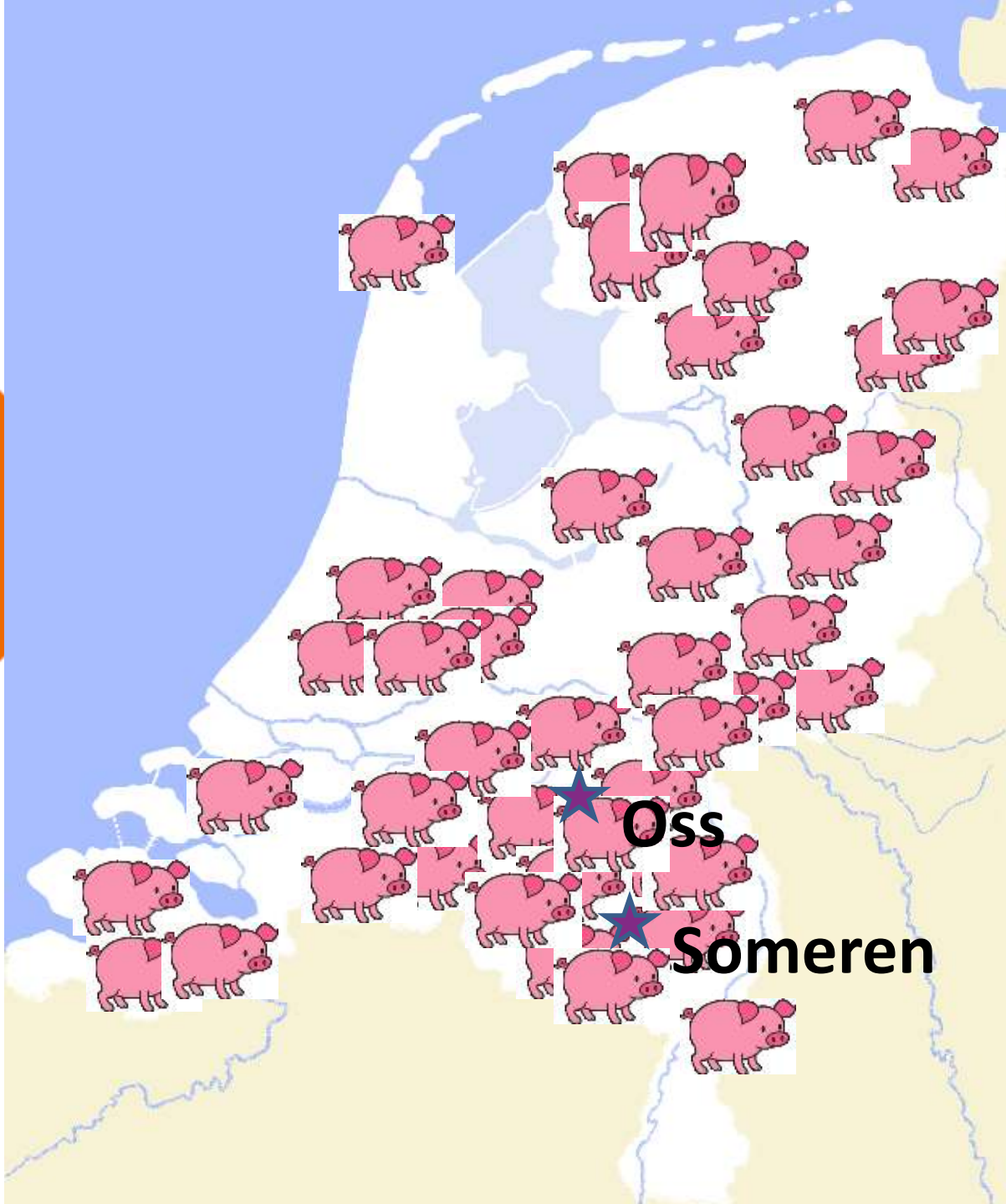


“The Swinepractice”

De varkenspraktijk



2 Locations:
Someren
+
Oss



History 2008 -2009



Within the EU:
The Netherlands had
the **lowest** use of antibiotics in human medicine and
the **highest** use of antibiotics in veterinary medicine.



History



From 2000 in Dutch hospitals more patients are found with multi-resistant bacteria (MRSA and ESBL's)

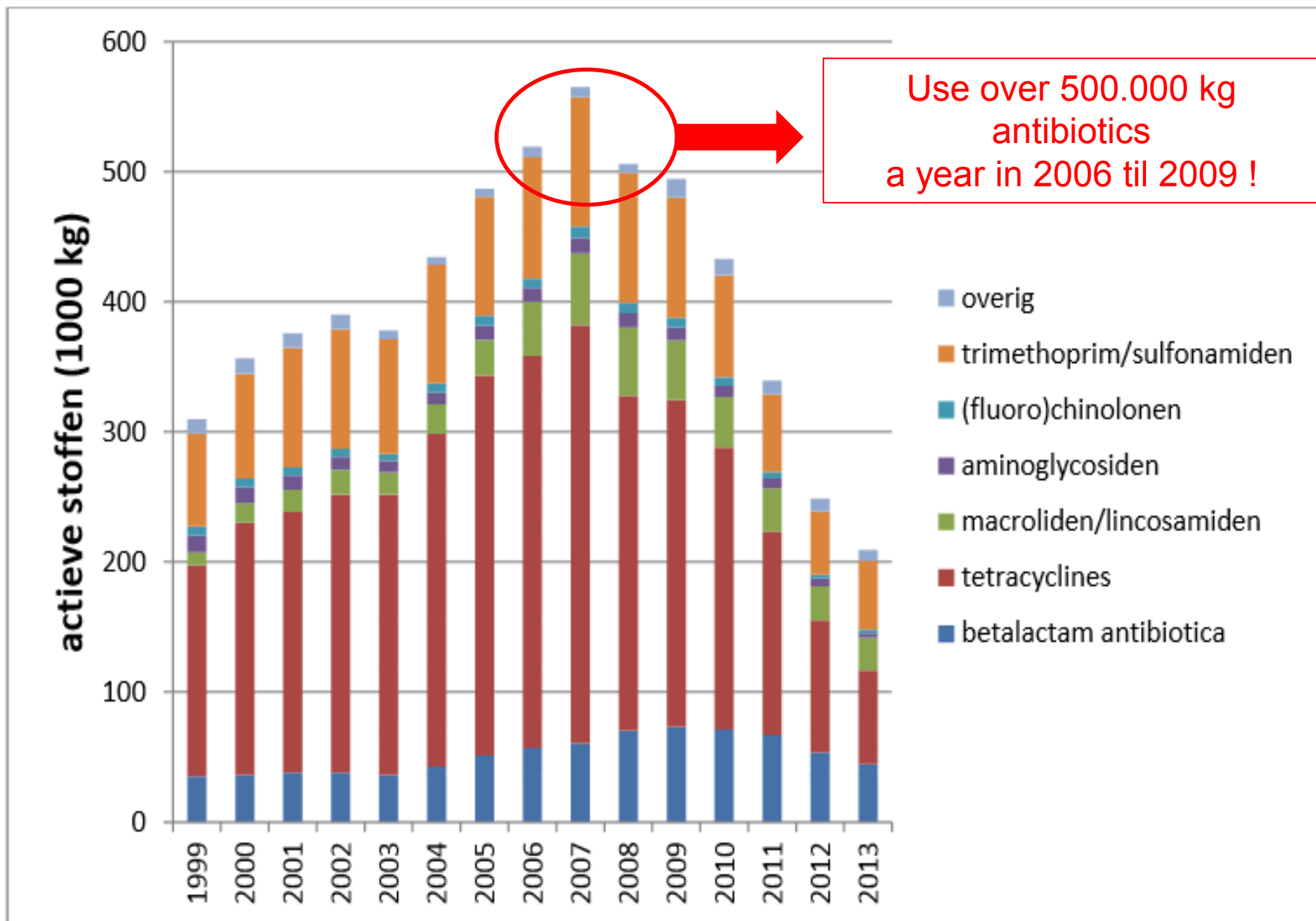


Situation till 2009

- High use of antibiotics in animal production
- Zinc oxide level maximum 150 ppm
- Veterinary practices have a pharmacy
- Farmers have antibiotics in stock at the farm
- Farmers could have more vets delivering antibiotics
- Preventive medication is common



Figuur 1. Verloop van de verkoopcijfers van antimicrobiële diergeneesmiddelen, uitgedrukt in aantal kilogrammen actieve stoffen (x 1000) van 1999 tot 2014 (bron FIDIN) naar hoofdcategorie in 2013.



November 2009



Report of Committee Antibiotic Resistance:

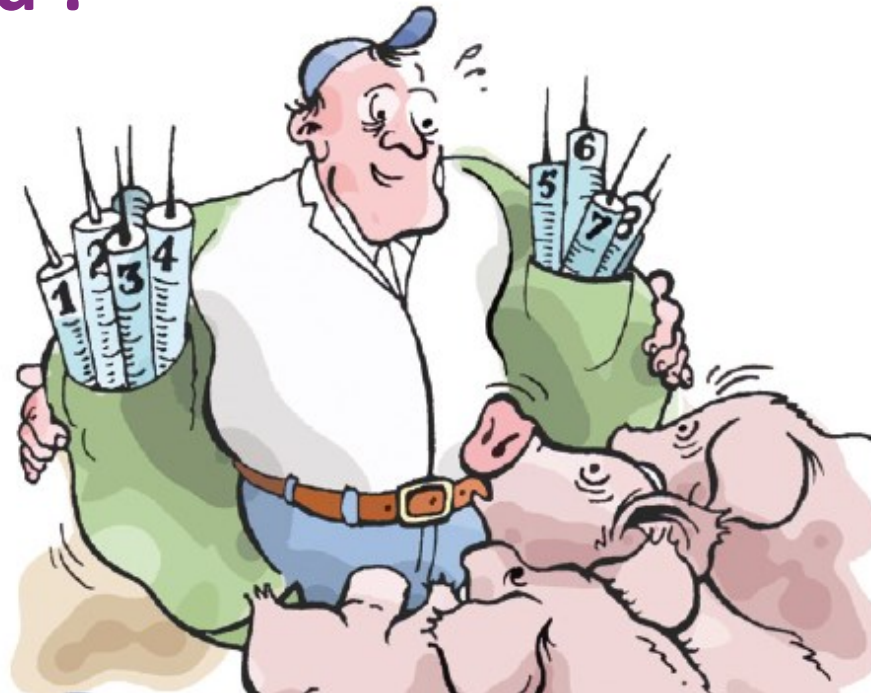
Reduction of 20% in 2011

Reduction of 50% in 2013



Ministry of Agriculture:

- 50 % reduction of antibiotic use in 2013 (compared to 2009)
- Preventive use of antibiotics is no longer allowed !



3 Basic principles



REDUCTION

of antibiotic use



IMPROVEMENT

of antibiotic use

TRANSPARENCY

of antibiotic use

Rules Quality System IKB

- **2010: Central database: registration of prescribed antibiotics on farm level.**
- **2011:**
 - **ban of in feed medication antibiotics (feed mills).**
(growth promoters were already banned in 2006).
 - **In pigs: no use of:**
 - **3th/4th generation cefalosporinen (ceftiofur)**
 - **Quinolonen (Baytril)**



Rules Quality system IKB

2012-2013:

- One-on-one contract between farmer and vet (prescription and delivery)!
- Annually Health-plan for each farm.



New legislation March 2014

- Only first choice antibiotics for individual treatment can be held in stock on the farm.
- Groupmedication only after farm-visit and prescription of the farm-vet.
- Second choice antibiotics only can be used after after lab-research and antibiogram.
 - Tulathromycine
 - Ampicillins, amoxicillins and colistin



New legislation 2014

- The use of third choice of antibiotics for herd treatment is prohibited by law for food producing animals
 - 3th/4th generation cefalosporinen
 - Quinolonen (some exceptions)



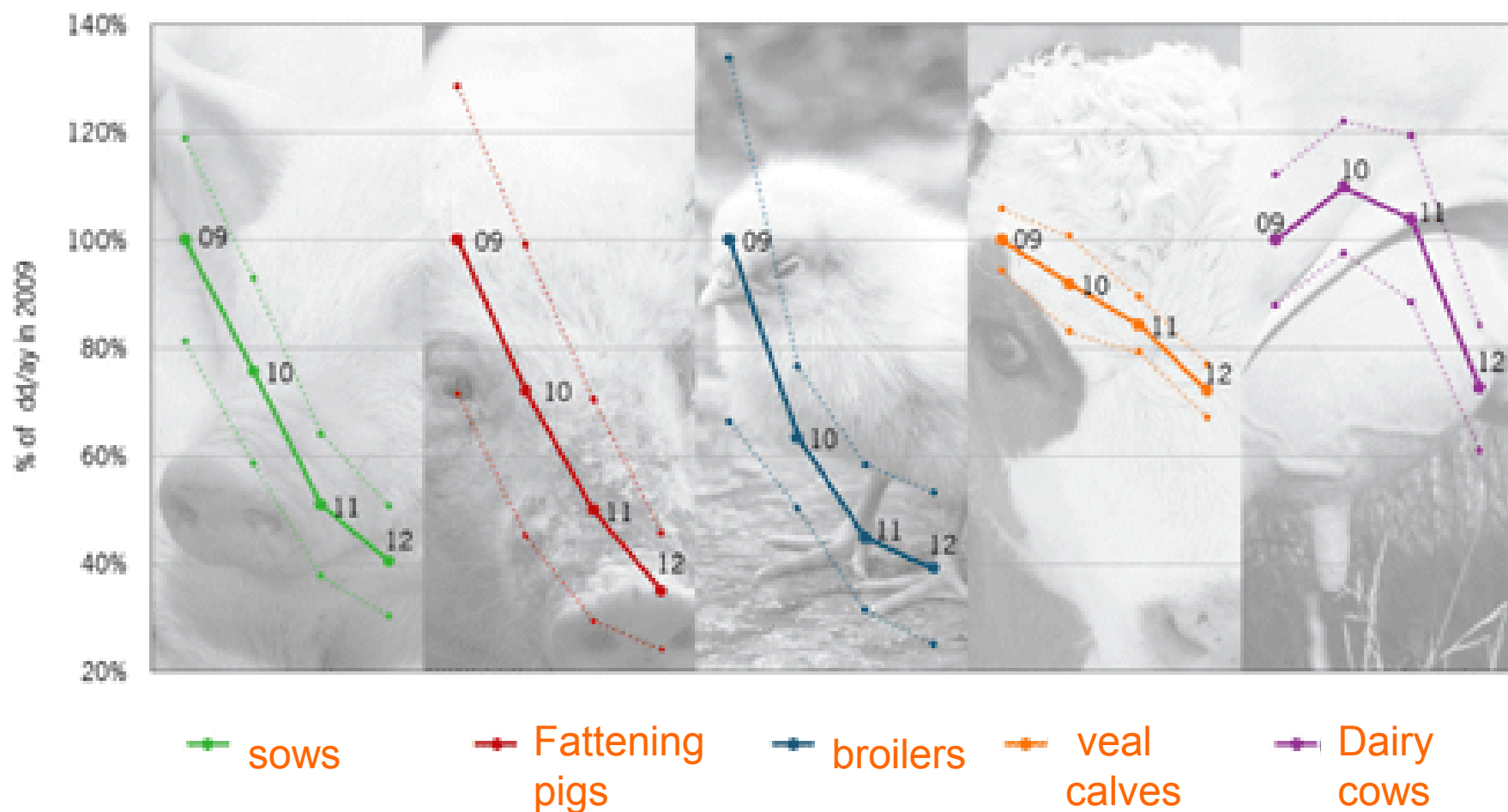
Further restrictions on the use of Ampicillins, Amoxicillins and Colistin in 2016 !



Results (in DDD)

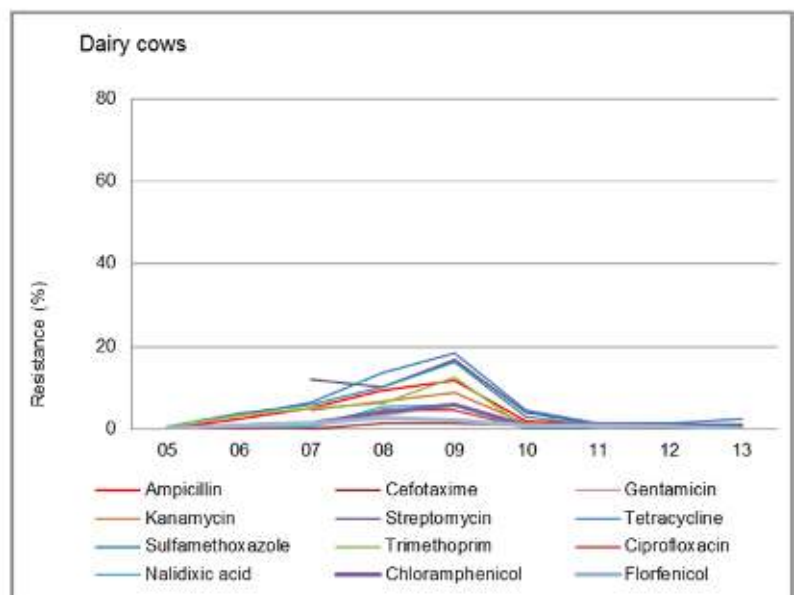
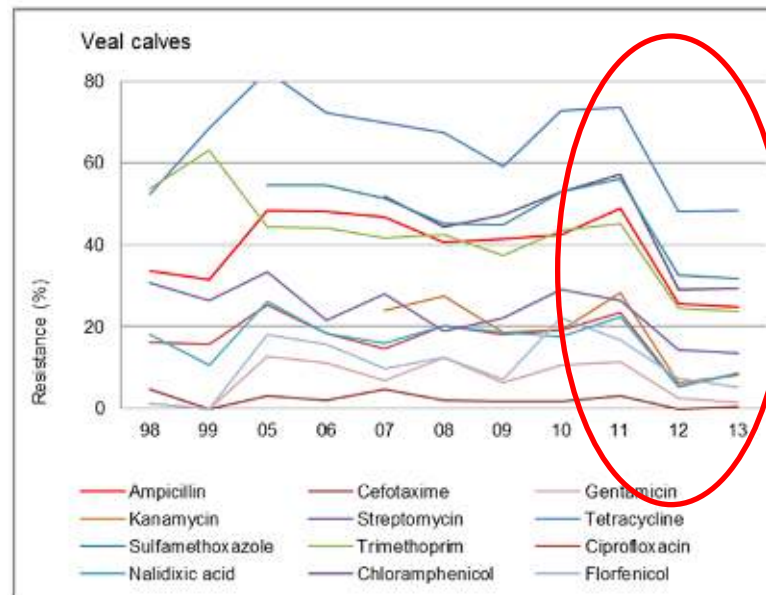
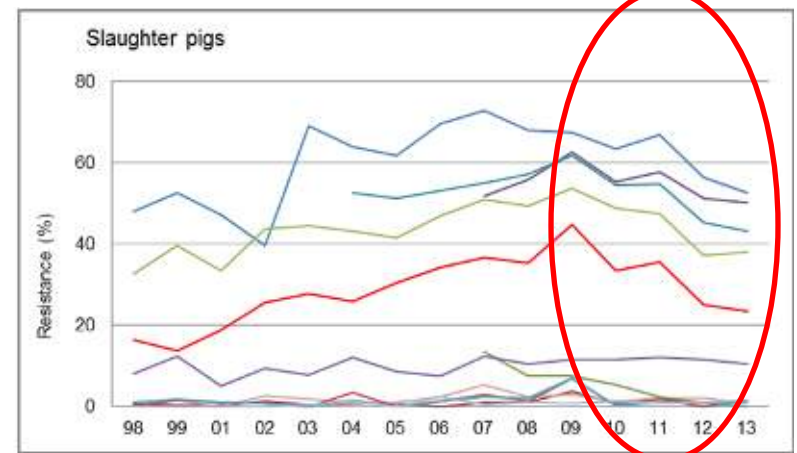
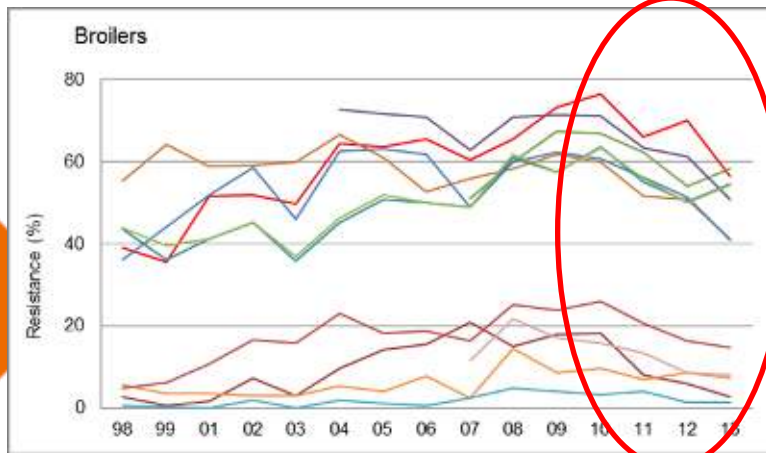
Figure 4.1

Trends in antibiotic use per species, 2009-2012 a)



a) Results for 2012 are estimates, based on preliminary data of the first half year.

Effect of reductions on the occurrence of antimicrobial resistance in commensal E. coli



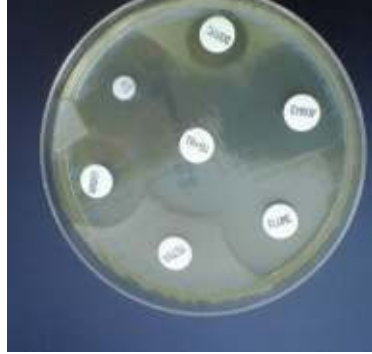
How to diagnose bacterial infections?

- Farm visit every 4 weeks by farm vet
- Guidelines KNMvD → Self Regulation
(Royal Dutch Veterinary Association)
 - Streptococcus suis meningitis
 - Use of antibiotics for individual treatment / group treatment
 - Respiratory diseases swine



Tools:

- Farm visits / Farm history
- Post mortem
- Bacterial culture / PCR /etc.
- Antibiotic sensitivity test
- Prescribe antibiotics + Delivery = Farm visit report
- Evaluation (next farm visit)






Oedema disease

Ergebnis der molekularbiologischen Charakterisierung der isolierten *E. coli*-Stämme (PCR):

	P 2308/15-2 <i>E. coli</i> var.haem. Isolate 6 und 7	P 2309/15-3 <i>E. coli</i> Isolate 1,5 u. 6	P 2309/15-3 <i>E. coli</i> var.haem. Isolate 2 und 3	P 2309/15-3 <i>E. coli</i> Isolat 4
<i>E. coli</i> -Enterotoxin LT-1	negativ	negativ	negativ	negativ
<i>E. coli</i> -Enterotoxin ST-IP	negativ	negativ	negativ	positiv
<i>E. coli</i> -Enterotoxin ST-II	negativ	positiv	negativ	positiv
Shigatoxin 2e	positiv	negativ	positiv	negativ
F4-Fimbrien (K88-Fimbrien)	negativ	negativ	negativ	negativ
F5-Fimbrien (K99-Fimbrien)	negativ	negativ	negativ	negativ
F6-Fimbrien (987P-Fimbrien)	negativ	negativ	negativ	negativ
F18-Fimbrien	positiv	negativ	positiv	negativ
F41-Fimbrien	negativ	negativ	negativ	negativ
<i>E. coli</i> -Anheftungsfaktor Intimin	negativ	negativ	negativ	negativ

A photograph of several piglets in a farm setting. One piglet in the center is looking towards the camera. A thought bubble is superimposed on the image, containing text. The piglets are pink and white, and the background shows other piglets and a wooden structure.

How can I
stay healthy
without
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)

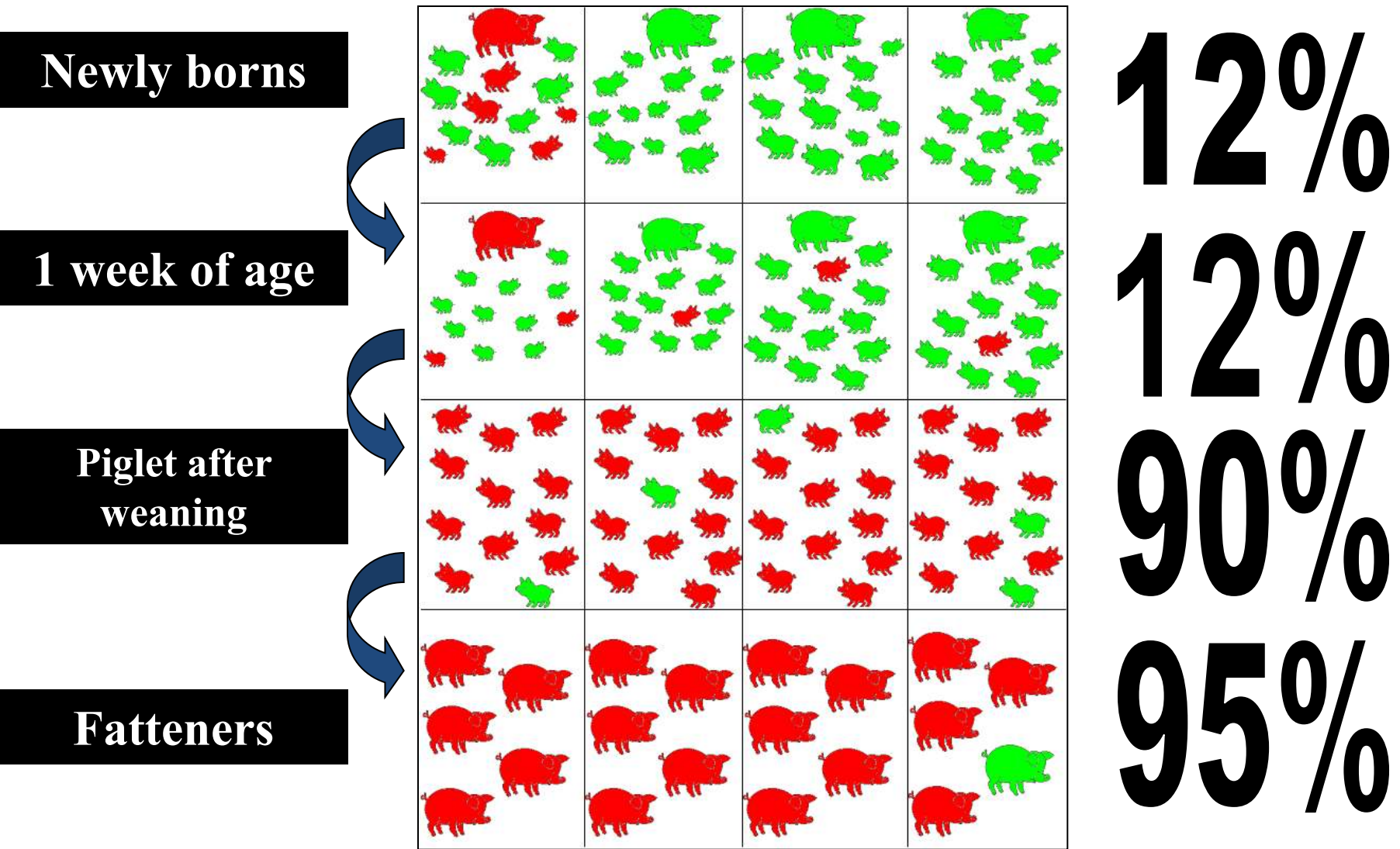
9. a good vaccination protocol
(decrease susceptibility for germs)
10. parasites treatment
11. separated farrowing - post weaning -
grow/finisher facilities
12. proper treatment of sick pigs
13. protocol to euthanize of sick pigs
(Remove Infectious animals)
14. strict hygiene in treatments of pigs
15.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



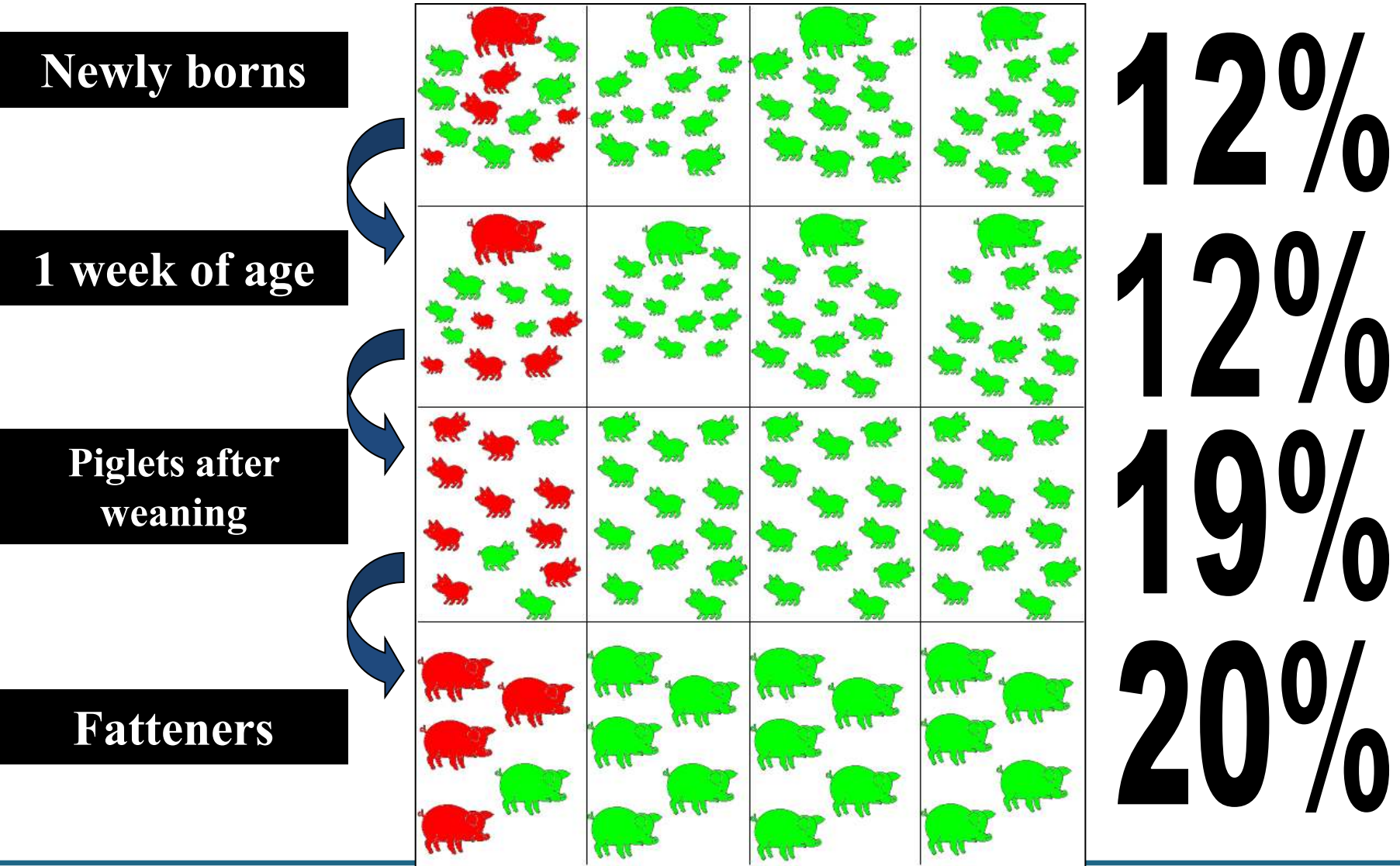
Practical aspects of Herd Health Management



Limited cross-fostering : Restrict mixing litters



Keeping litters together:



Cross-fostering

- Not the first 12-24 hours (colostrum!)
- The first born piglets (mark them after birth)
- From 1 sow to 1 other sow



Improve Colostrum intake = improve resistance

IgG Concentrations in Colostrum



Adapted from Le Dividich et al., 2006

Split – suckling ?

ONDERWERP: Immunocrit

Datum monstername : 2 september 2013

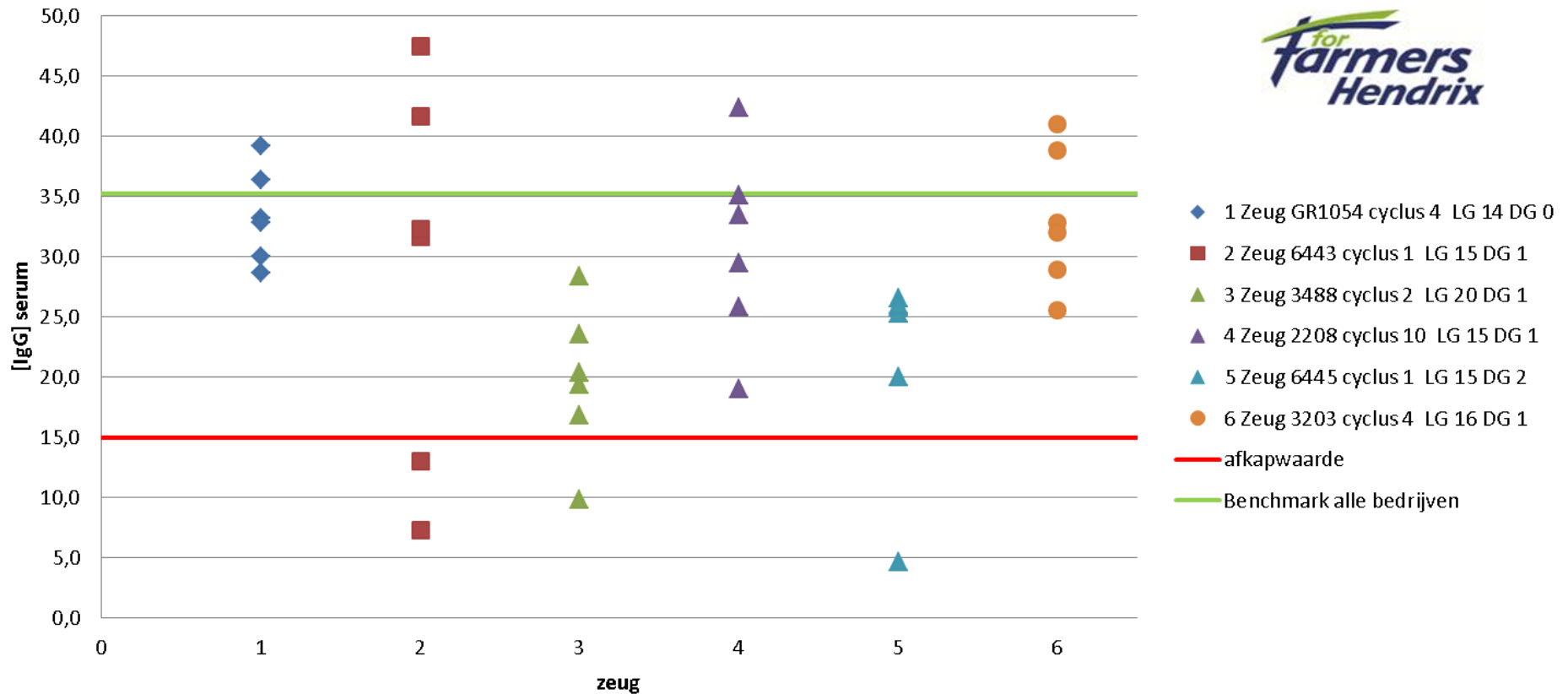
Uitslag: 4 september 2013

Gemiddelde [IgG] : 27,9 mg/ml

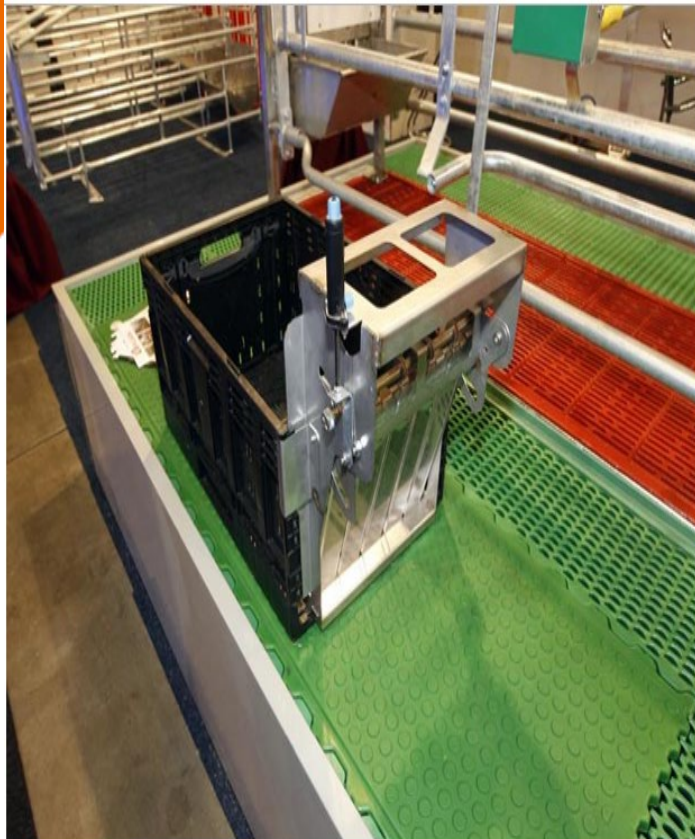
Gemiddelde overige bedrijven: 35,2 mg/ml

Waarden tov overige bedrijven: 79,25%

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



Split-suckling



Important before weaning

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

**As a vet, you should
check this !!!**



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 and disinfection)

Some aspects:

- Aerosols → Spread of bacteria and viruses → First disinfect !
- Peracetic acid:
Oxidation of Clostridia spores.

AND:

- No feed back!!



Climate



- Flap with roof ventilation !
 - ➔ Less air flow
- Resting place for the piglets (dark – no defecate area).



Vaccination against diarrhea

- Do a proper investigation → lab research !
- much experience with:
 - Rotavirus : Lactovac (off label use)
 - Oedema disease: Ecoporc Shiga
 - Lawsonia: Enterisol Ileitis
 - Clostridium diarrhea:
 - Porcilis Coliclos
 - Clostriporc A



**Diseased pigs need drugs,
healthy pigs need a good
manager!**



The future in Europe

- Now:
 - Difference in the use of antibiotics
 - Difference in regulations
- Required:
 - Uniform regulations within the EU
 - Better position of the veterinarian



EUROPEAN ASSOCIATION OF PORCINE HEALTH MANAGEMENT

Become member
of the EAPHM:
www.eaphm.org



Thank you for your attention!

something
wrong with the
sphincter ?

