Challenges at Food Business level

June 20, 2022

Derk.Oorburg @vionfood.com

- Born in the "shrimp capital" of the Netherlands
- Veterinarian
- Diplomate of the European College of Veterinary Public Health
- Board member of Global GAP
- Member of the expert committee of GMP Plus
- Director Quality Assurance

Vion FOOD GROUP

ECVPH EUROPEAN COLLEGE OF VETERINARY PUBLIC HEALTH

GLOBALG.A.P.

Universiteit Utrecht

GMP+ International

Farmers owned meat production: 28 meat production plants in Europe

Vion Business Units

Pork

Beef

Food Service

Retail

Vion brands and concepts

Food Family

GOOD FARMING STAR

weylander

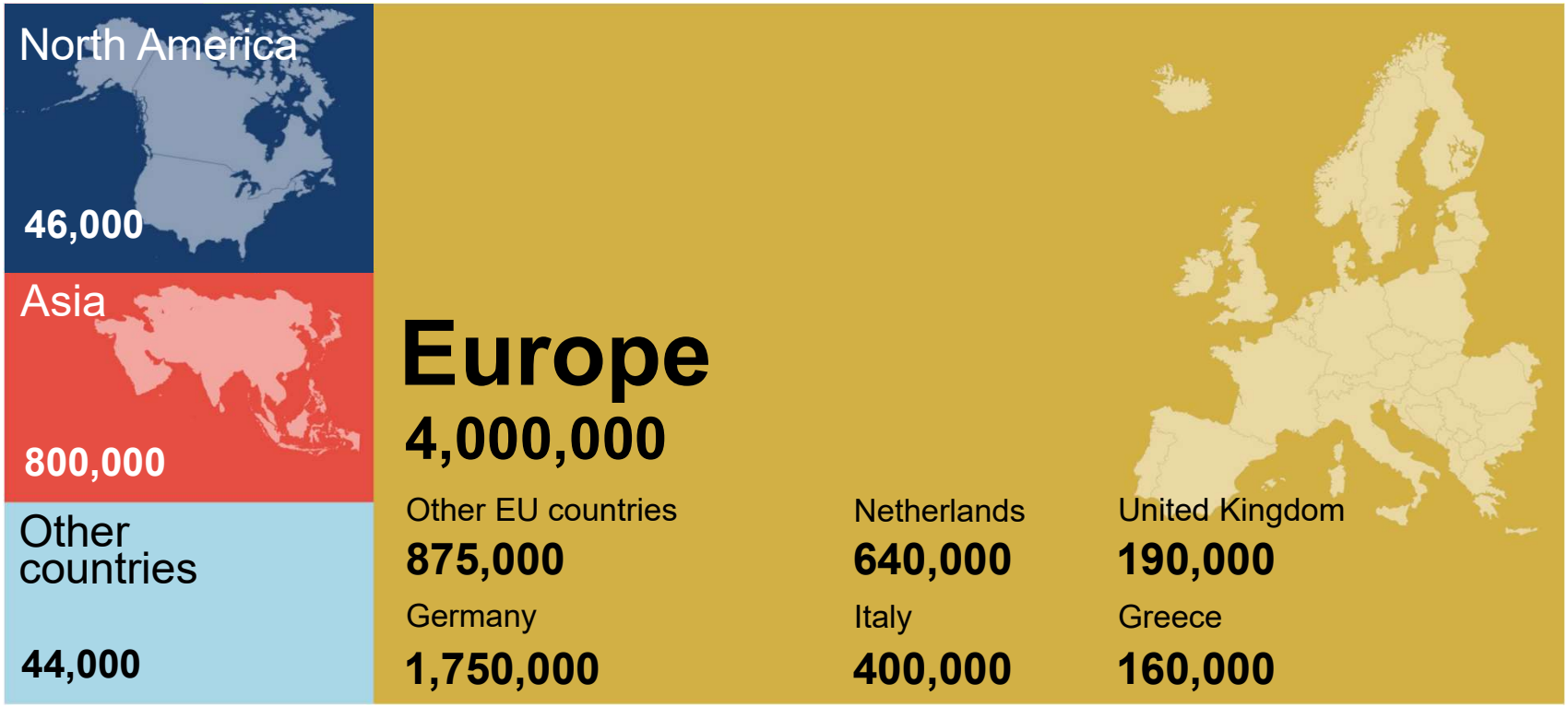
SALOMON FoodWorld

Impulse. Erfolg. Emotionen.

ROBUSTO PROSCIUTTO

Over 100 million consumers per day enjoy our meat all over the world

Markets served (Net turnover per market in thousands of euros): total 5 billion Euro

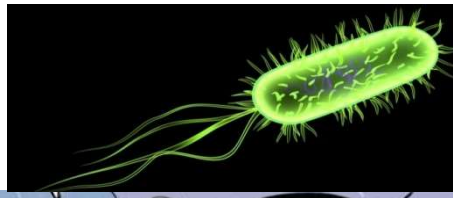



Production locations
N
W
E
S
Leeuwarden
Enschede
Apeldoorn
Scherpenzeel
Groenlo
Bad Bramstedt
Emstek
Perlenberg
Tilburg
Boxtel
Holdorf
Twist
Ahlen
Holzwickede
Zottegem
Hilden
Altenburg
Großostheim
Bamberg
Furth im Wald
Crailsheim
Vilshofen
Landshut
Eching-Weixerau
Buchloe
Waldkraiburg
Memmingen
Business Unit Beef
Business Unit Pork
Business Unit Food Service
Business Unit Retail

Food Safety
it's our business

Zwölf Kanadier sterben nach Fleischkonsum

KRANKHEIT Bakterien lösten Listeriose aus. 29 Verdachtsfälle.



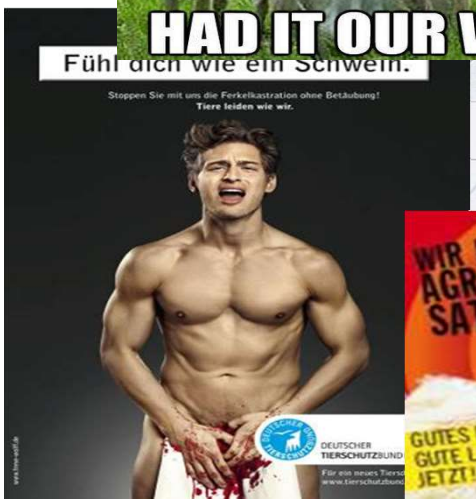

PISS &RUN
HELP DE PLOFKIP
GA ZEIKEN BIJ
Mc TOILET
WAKKER DIER


Every
KNOCKDOWN
PRICE
is at the cost
of animals.


STOP
ANIMAL
ABUSE


WENT TO BURGER KING
HAD IT OUR WAY


AL★MART

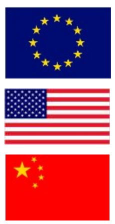

Fühl dich wie ein Schwein.
Stoppen Sie mit uns die Ferkelkastration ohne Betäubung!
Tiere leiden wie wir.
DEUTSCHER TIERSCHUTZBUND


WIR HABEN AGRARINDUSTRIE SATT!
GUTES ESSEN. GUTE LANDWIRTSCHAFT. JETZT!
DEMO
19. JAN. 2013
11 UHR
BERLIN HBF.


McDONALD'S
CAN KISS MY
...
These buns are 100% BURGER FREE
lovin' it?

This is the challenge…

FBO's responsibility to control food safety/AW/…



Europe
USA
China

→ **Responsibility (chain of) producers**

↓ **Show performance of food safety control (eg. Food Chain Information)**

→ **1.Design systems and procedures**

2.Need for transparent and easy data collection

Food safety – risk analysis

		Incidence (in human cases)		
		Low	Medium	High
Serlousness	Low	1	2	3
	Medium	2	4	6
	High	3	6	9

Based on risk assessment >> conclusions on level of control

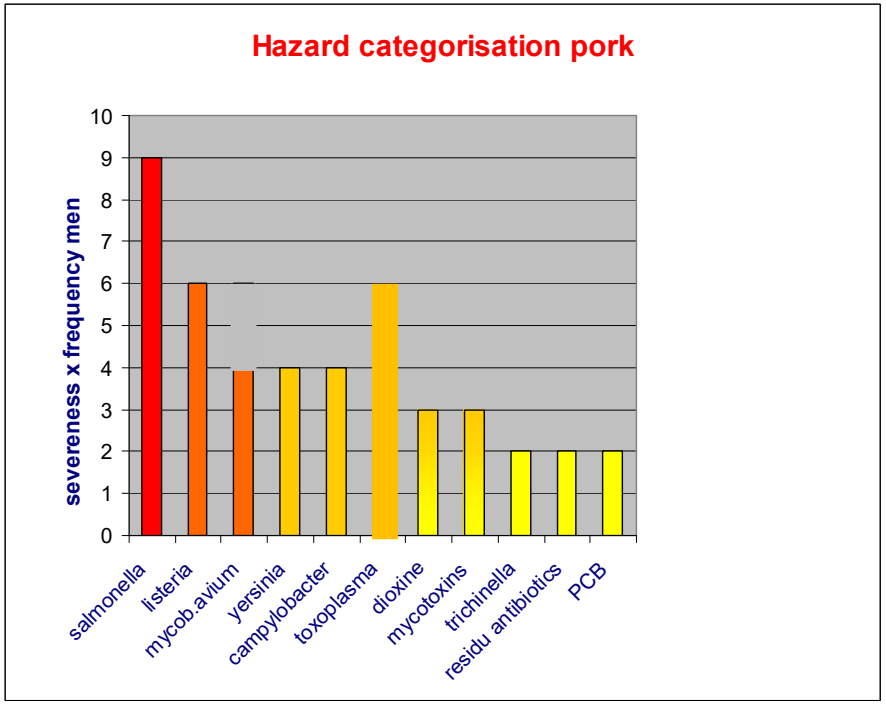
- Relevant hazards: CCP level
- Hazards: CP level
- Less relevant hazards: re-assessment

Definition of control measures:

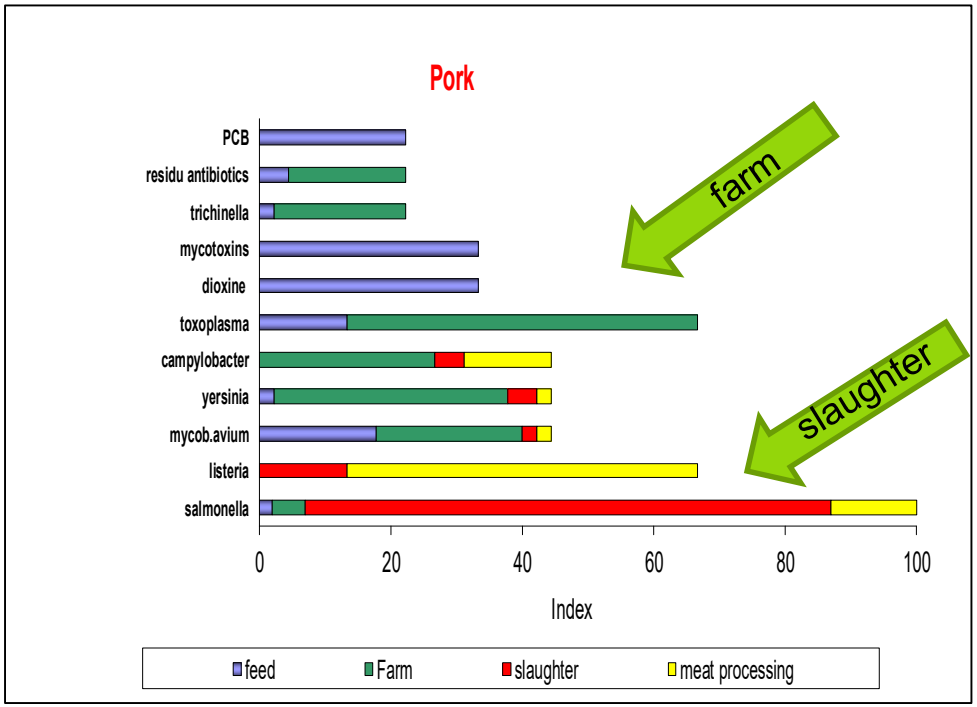
- CCP's and CP's and most effective place in the process chain,
- limits, performance criteria, monitoring and verification

Relevant hazards

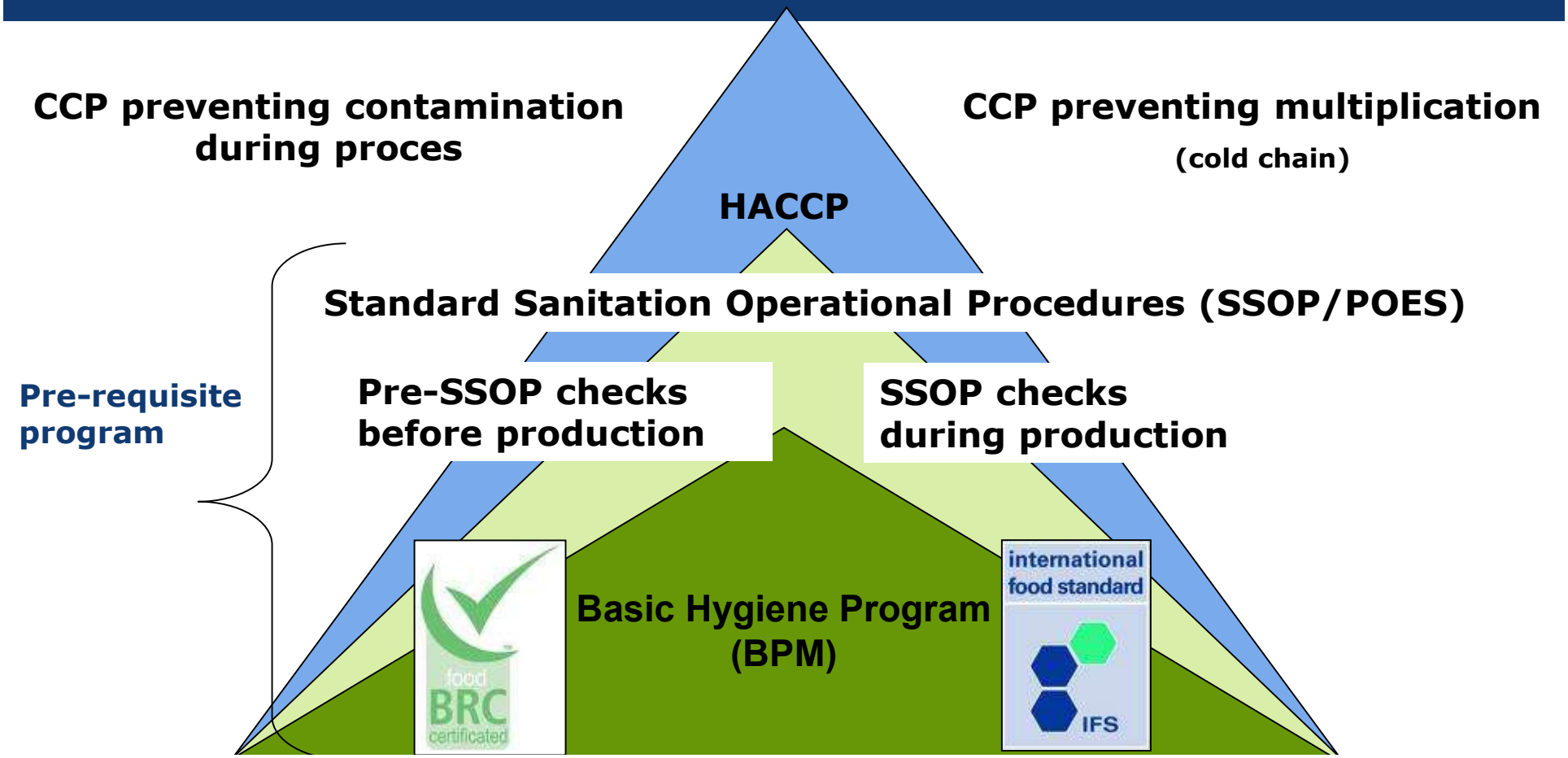
Hazards: which need to be addressed?



Hazards: estimated relative contribution



Vion HACCP

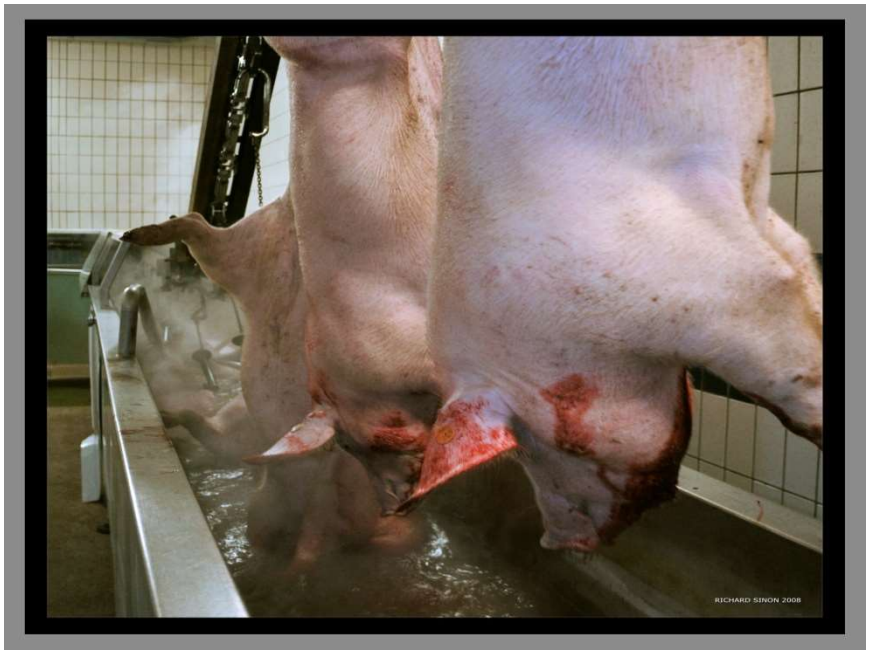

CCP preventing contamination during proces
CCP preventing multiplication
(cold chain)
HACCP
Standard Sanitation Operational Procedures (SSOP/POES)
Pre-requisite program
Pre-SSOP checks before production
SSOP checks during production
Basic Hygiene Program (BPM)
food BRC certificated
international food standard
IFS

Lairage area

- Clear identification of the animals
- Animals kept in peer groups, no mixing
- Cleanliness of animals

Scalding

- To remove dirt
- To make hair removal easier



Dehairing

- Results in smooth and visually clean animal

Flaming - Singeing

- Decontamination by means of high temperatures
- Microbacterial reduction
- Enterobacteriacea non detectable (< 0.48 log per cm2)
- Total viable counts reduced to 2 log per cm2
- As low as reasonably achievable

Intestine removal

- Critical procedures in relation to fecal (cross) contamination.
- Strict hygiene
- Deviations have to be monitored

Pre-inspection for fecal contamination

- Private responsibility
- 100% check, monitoring of hygienic slaughter
- Carcasses with visual contamination are blocked from further processing
- Carcasses taken out of the line to be corrected (removal of parts and flaming)

Rework station

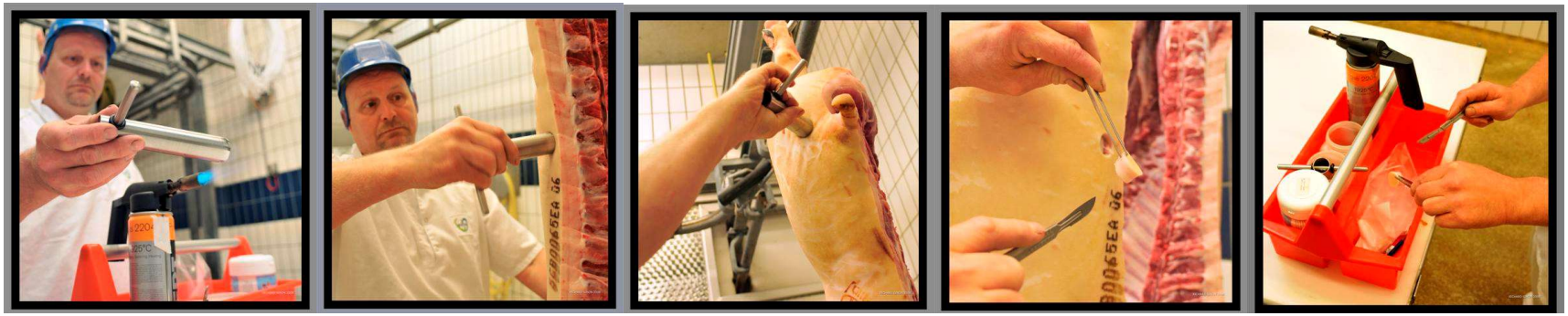
- Removal of contaminated parts
- Decontamination of the area with open flame
- Cross contamination of fecal matter under control
- Note: heads are not split! Prevents cross contamination of samonella.

Monitoring and verification CCP

- Monitoring
  - > Every hour 25 carcasses
  - > End of slaughter
  - > Trained staff
  - > Extra light and mirrors
  - > To assess the control of fecal contamination
  - > Corrective and preventive measures
- Verification
  - > 2x a day
  - > Same place and time as monitoring
  - > To assess the monitoring
  - > Corrective and preventive measures

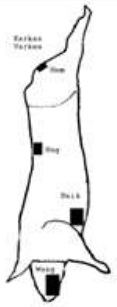
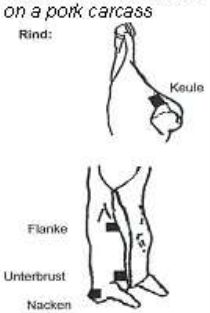
Sampling procedures

- Uniform procedure on all sites
- Trained staff
- At random sampling
- Excision sampling -> robust (no sponge sampling)
- Sampling at slaughter +1 (chilled carcasses)
- All use the same external laboratory
- Equivalence detemined by Competent Authority



Uniform sampling procedure

Procedure Collection of Samples for Microbiological Analysis

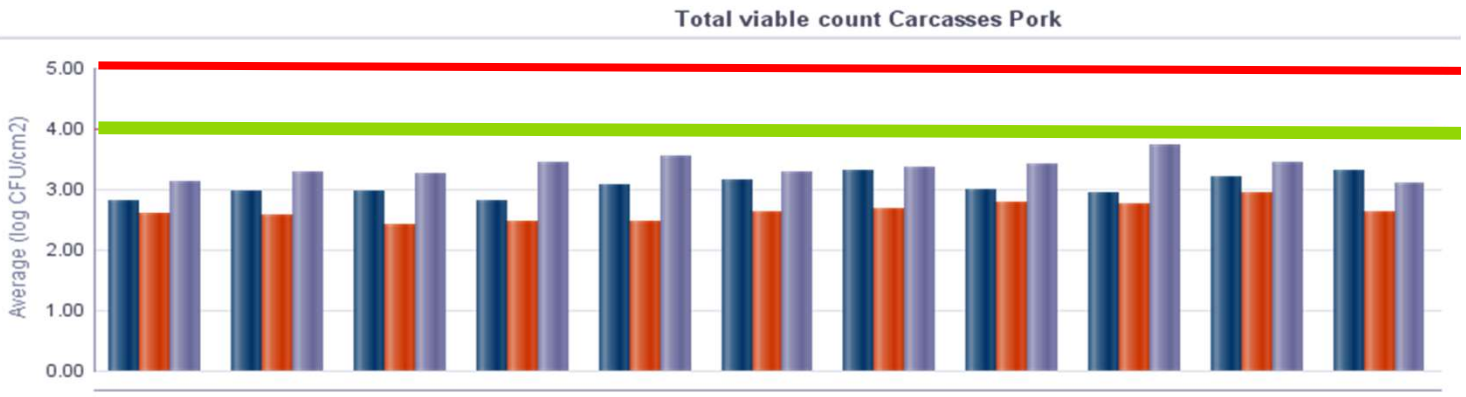
Item	Method		Frequency	Analysis
Samples for microbiological analysis:				
Pork and beef carcasses	 *Figure 1: Sampling sites on a pork carcass*  *Figure 2: Sampling sites on a beef carcass*	Using a sterile cork borer, four holes are cut in the surface of each carcass, at the sites indicated. Next, using a sterile scalpel and pincers, the pieces of rind are cut out to a thickness of about 2 mm thick. The pieces are placed together in a coded Stomacher bag. The next production day after the day of slaughter, the samples are placed in the after-cooler. This therefore also serves as the entry control for the cutting hall. Sampling sites on pork carcasses (figure 1): • Rind of the back, at the transition between ham and middle • Rind of the chest, by the breastbone • Rind of the ham, as close to the anus as possible • Rind of the lower jaw Sampling sites on beef carcasses: • Back at the transition between coarse rib and fine rib • Brisket navel end • Hard red jowl meat • Rump, as close to the anus as possible	**Pig** abattoir with permission to export to the USA: Daily, one carcass to be sampled for every thousand animals slaughtered. Carcasses for sampling to be selected at random.[II] From the five samples, a pool sample is made in the laboratory for the salmonella test.[III] Sows and **pig** abattoir without permission to export to the USA: Five carcasses to be sampled on two different days per week (= 10 samples per week). Entry control (external supplier[IV]): Five samples of one article in every ten deliveries are taken. Supplier's monitoring data is also requested once a quarter. For Salmonella analysis, a pool sample is made. **Cattle** abattoir: Five carcasses to be sampled on two different days per week (= 10 samples per week). From five samples of one day, a pool sample is made in the laboratory for Salmonella. Take five extra samples from the same carcasses for a pool sample on E.coli O157. Minimum 5 carcasses have to be sampled vertical (only results from vertical samples are used for KPI reporting) Entry control (external supplier[IV]): see entry control pigs.	Pig abattoir: Aerobic plate count Enterobacteriaceae Salmonella Cattle abattoir: Aerobic plate count Enterobacteriaceae Salmonella E.coli O:157

Limits and targets

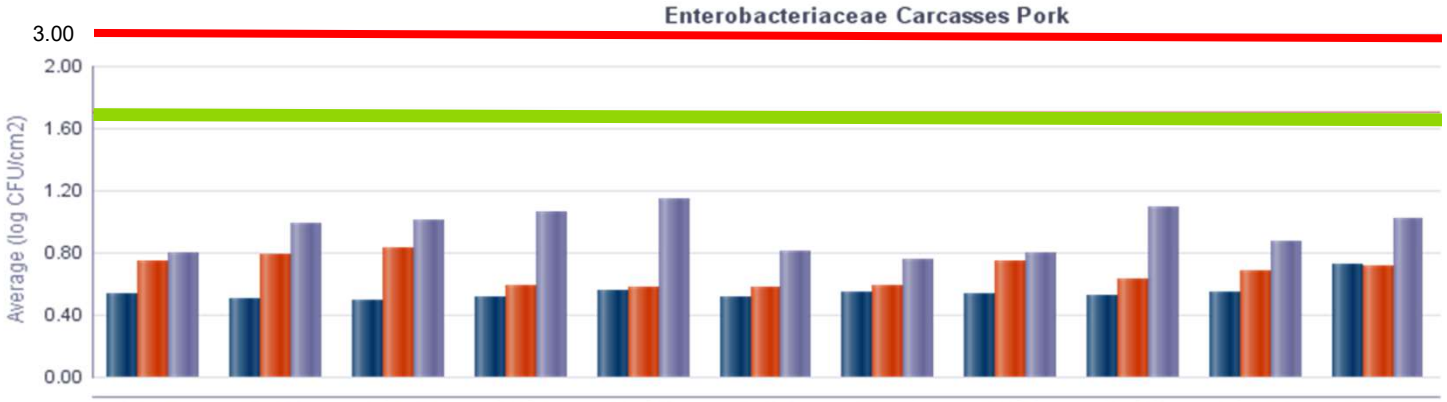
Product	Micro-organism	Limit		
		Frequeny	m target limit	M unsatisfactory
carcasses	Total viable count	1 per 1000 ccs a day	4.0	4.7 *(EU 5,0)*
	Enterobacteriaceae	1 per 1000 cc a day	1.7 *(EU 2,0)*	2.0 *(EU 3,0)*
	Salmonella	5 per day	5% *(EU 8%)*	
Technical cuts	Total viable count	5 in 2 week	4.0	4.7
	Enterobacteriaceae	5 in 2 week	1.7	2.0
	Salmonella	5 in 2 week	5% (1 of 20 samples)	
	L. monocytogenes	5 in 2 week	5% (1 of 20 samples)	
Fine cuts	Total viable count	5 / week	4.0	5.0
	Enterobacteriaceae	5 / week	2.0	3.0
	Salmonella	5 / week	5% (1 of 20 samples)	
	L. monocytogenes	5 / week	5% (1 of 20 samples)	

Performance on carcass level

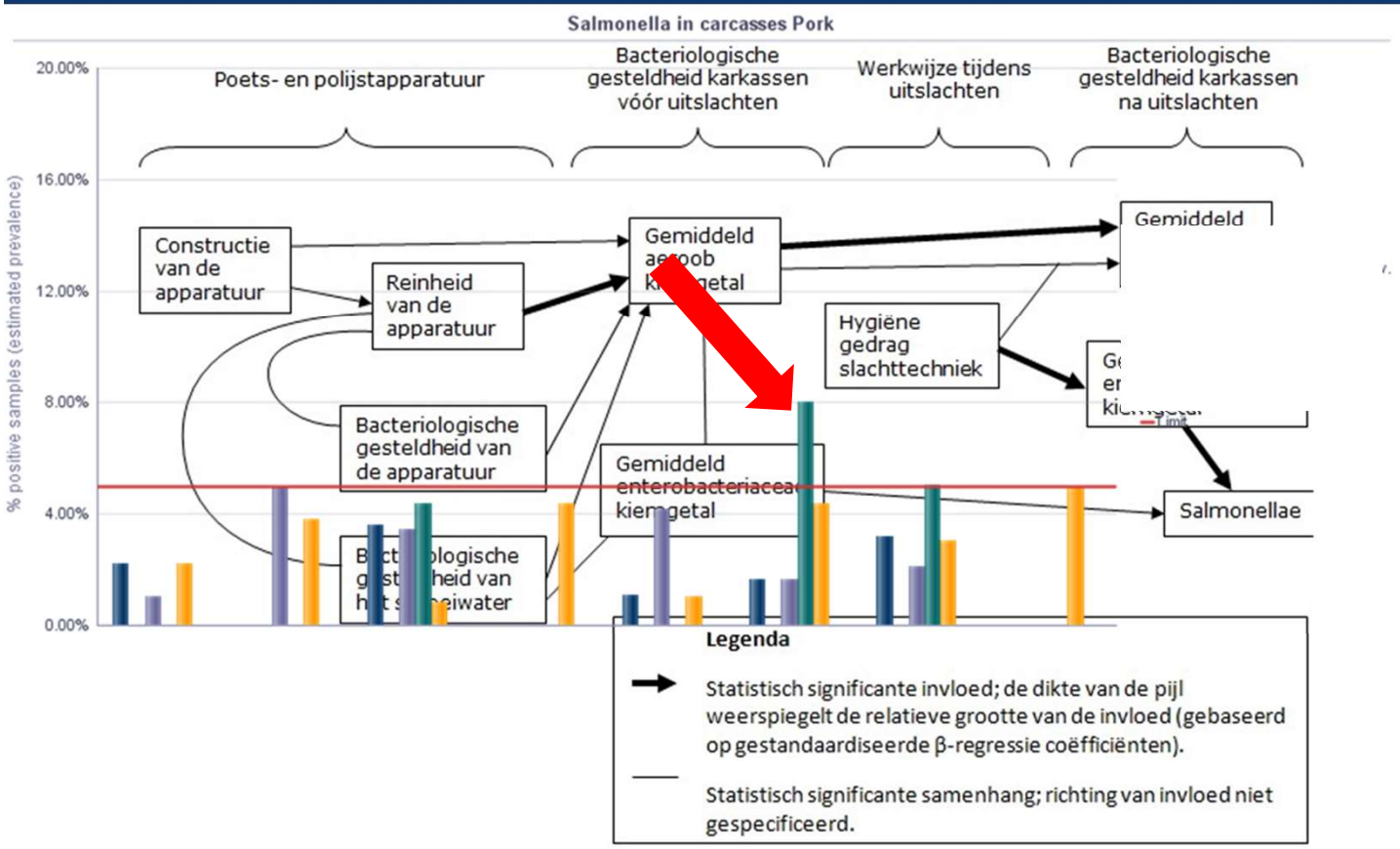
EU regulations lay down limits for process criteria.



Vion has limits lower than EU



Root cause analysis



Antibiotic control

Feed

- No growth enhancers
- No AB in feed

Medication

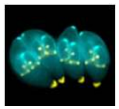
- No critical antibiotics
- “prudent use”

Hygiëne

Strict process hygiëne

Monitoring STEC + ESBL + MRSA

Biosecurity

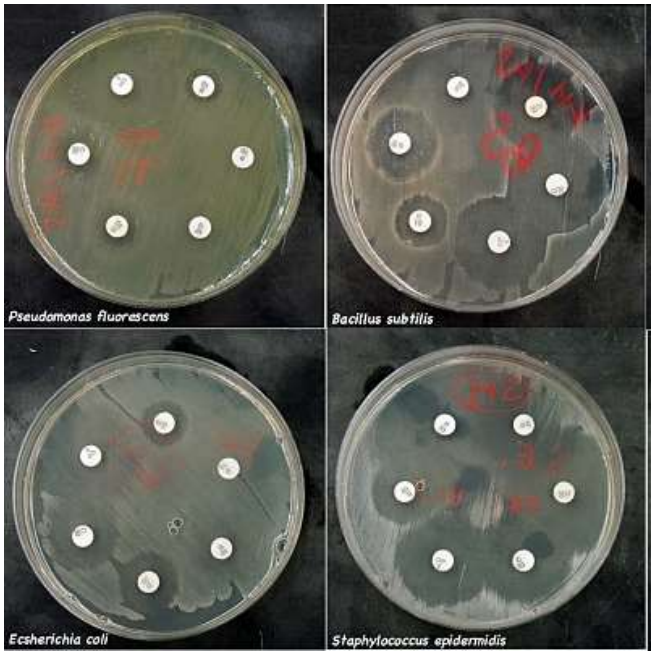


- Feedback slaughter info → Continuous Improvement Animal Health
- Better biosecurity controll → Less AB necessary

Monitoring of residues

- Samples taken based on objective criteria
- Selection on inflammation of respiratory tract

- Differentiation on active substance
  - Fate of products when non-compliance is detected? Science?
- Farmer follow up through official authorities and Vion



Link to the farm-phase
Sampling procedures / outcome measures



- Uniform procedure on all sites
- Trained staff
- At random sampling (1,2 or 6 samples per herd)
- Use the same external laboratory

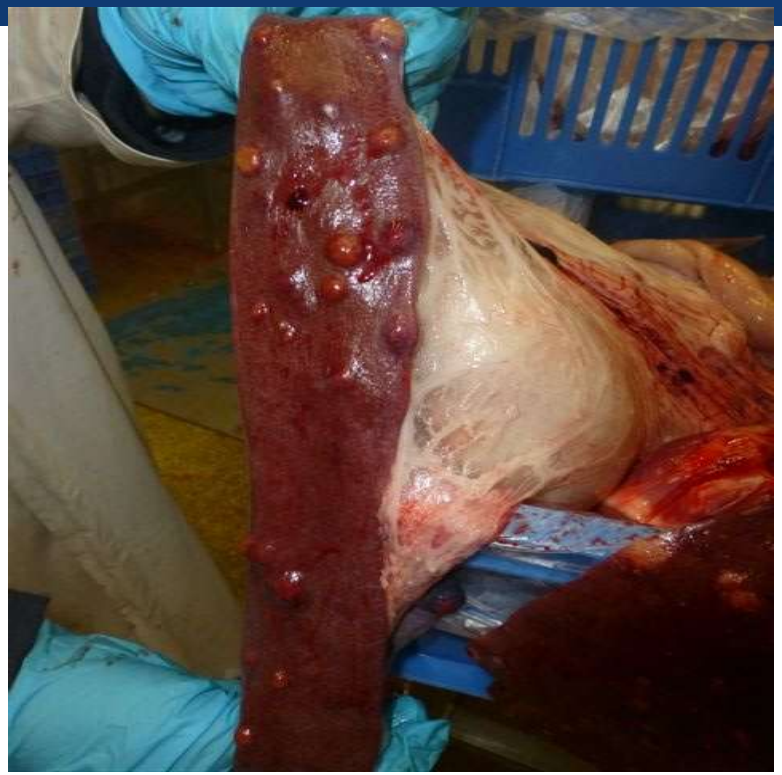






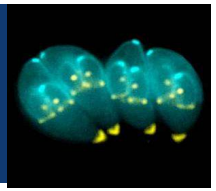

Mycobacterium avium hominosuis control

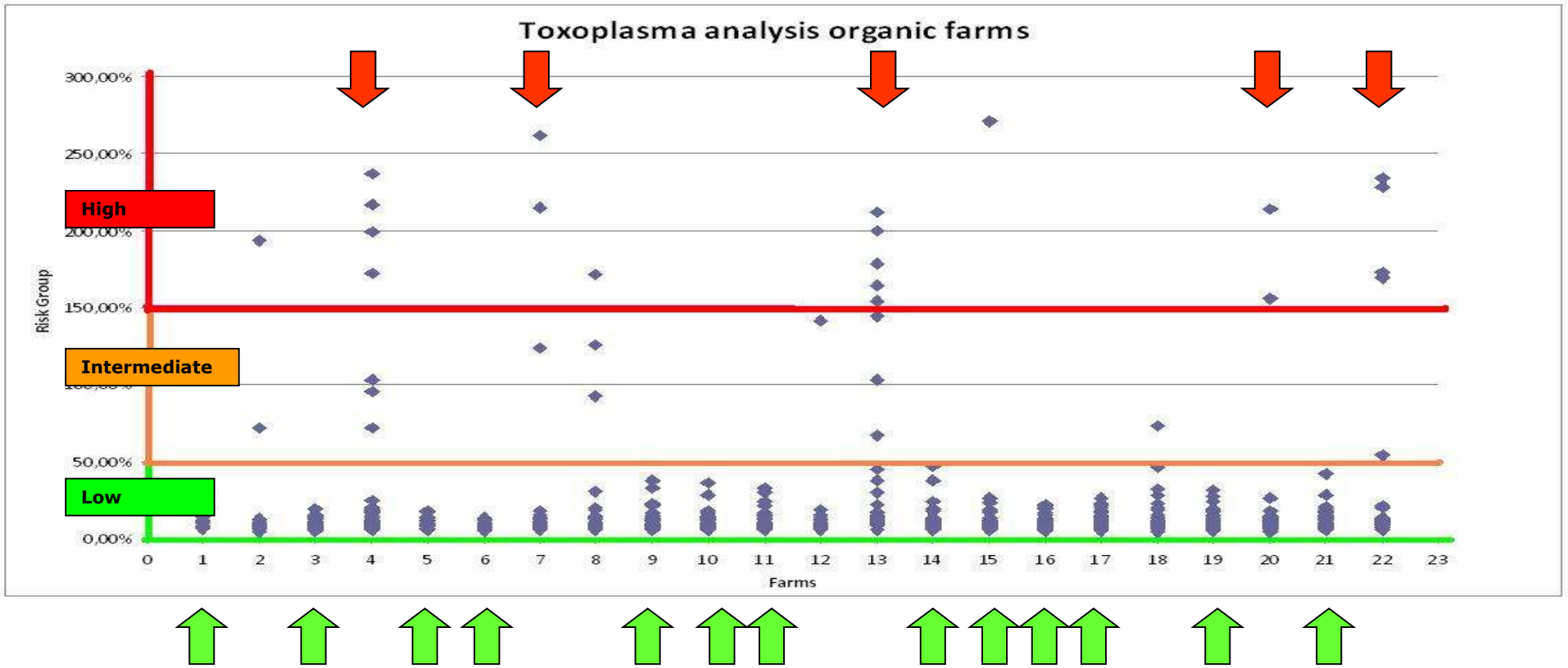
Typical avium infection can easily be seen at visual inspection



Risk factors: compost, pests, birds, water, tooth clipping

Toxoplasma gondii control





Interventions

- Biosecurity analysis
  - Full separation of clean and dirty areas
  - Feedstuffs always well covered/stored
- Feed management
  - Exclusion of raw whey
  - Heat treatment of feed
- Pest-control
  - Professional rodent-control services
- Presence of cats
  - Value of farmer's own (castrated adult cats)

AM/PM data collection in the Netherlands (1)

- Meat inspection done by Competent Authority
  - > Independent
  - > Objective
  - > Uniform
  - > Transparent
- Basic parameters for good data collection.
- Quality of the data is important
- CA is responsible for compliance
  - > Verification on a daily basis (public and private)

AM/PM data collection in the Netherlands (2)

- Collection facilitated by Food Business Operator
  - > Touch screens to collect data
  - > Automatic weighing of carcass and gut filling
  - > Slaughter hook identification *(to link observation to carcass)*

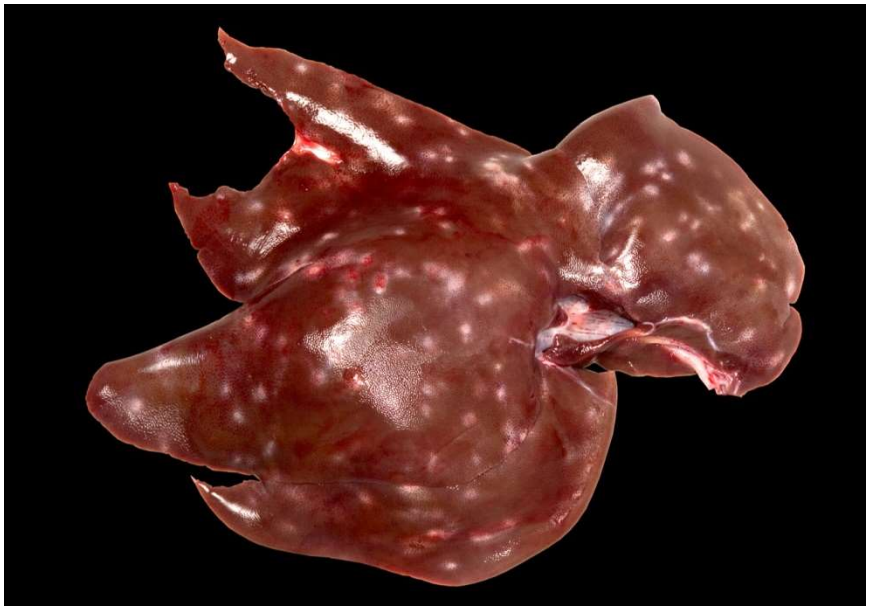
- Line speeds 550-650/hour

- Optimizing the meat inspection platform for the inspectors to do their job.
  - > Rotation, extra light, mirrors, seats etc.

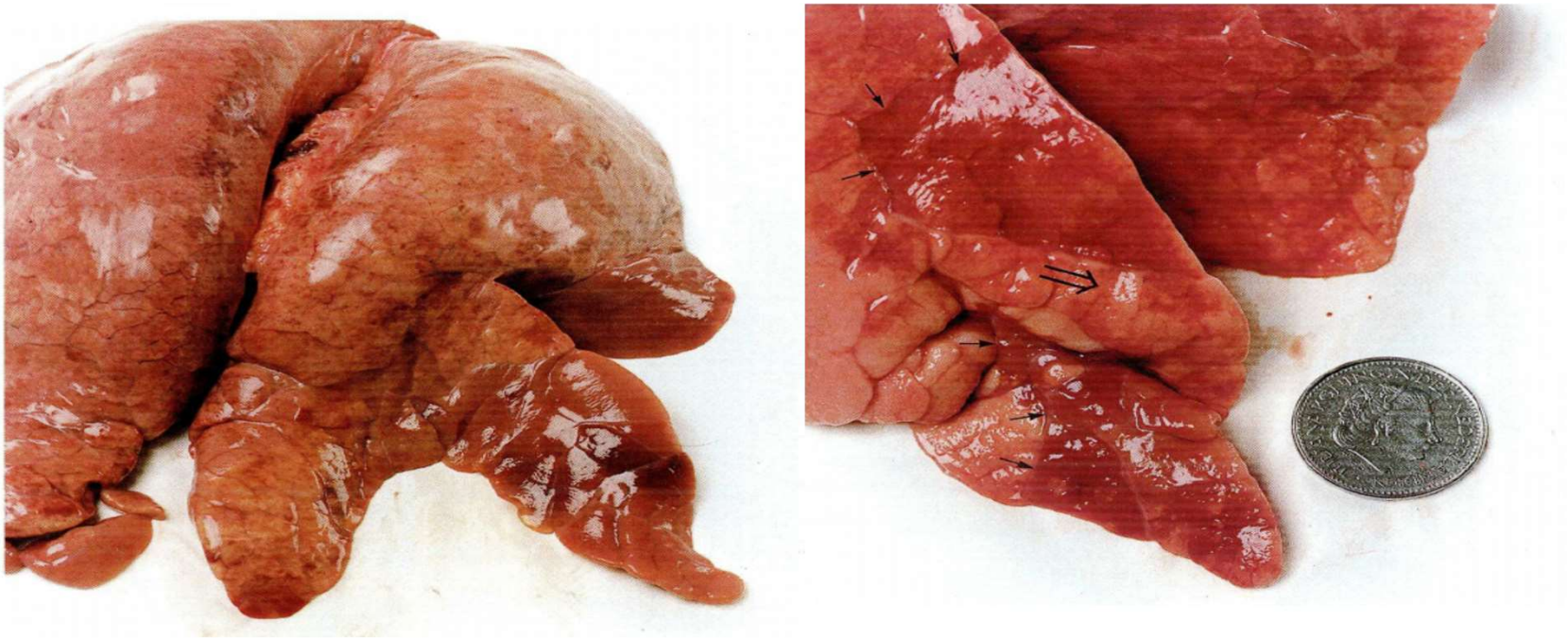
- Any issue the carcass goes to the trim line
  - > Gross leasions
  - > Not able to inspect properly

Liver

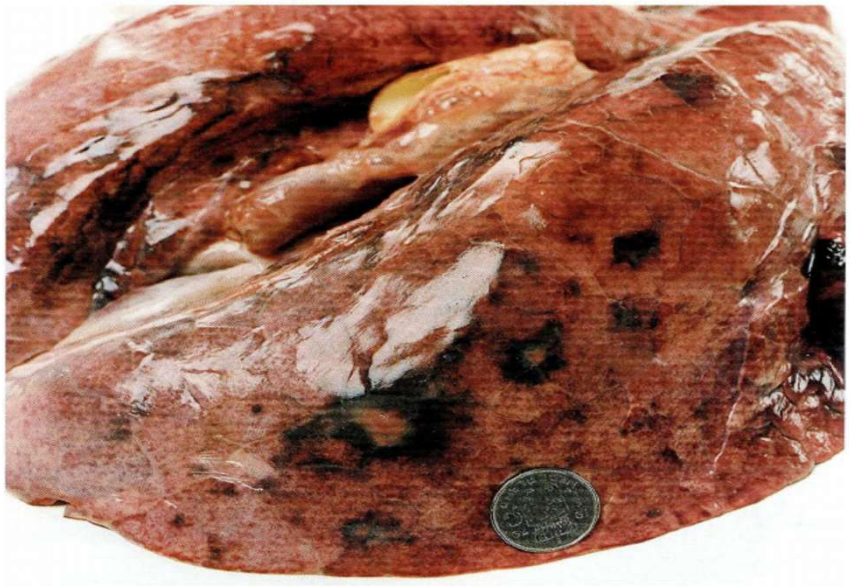
perihepatitis and white/milk spots

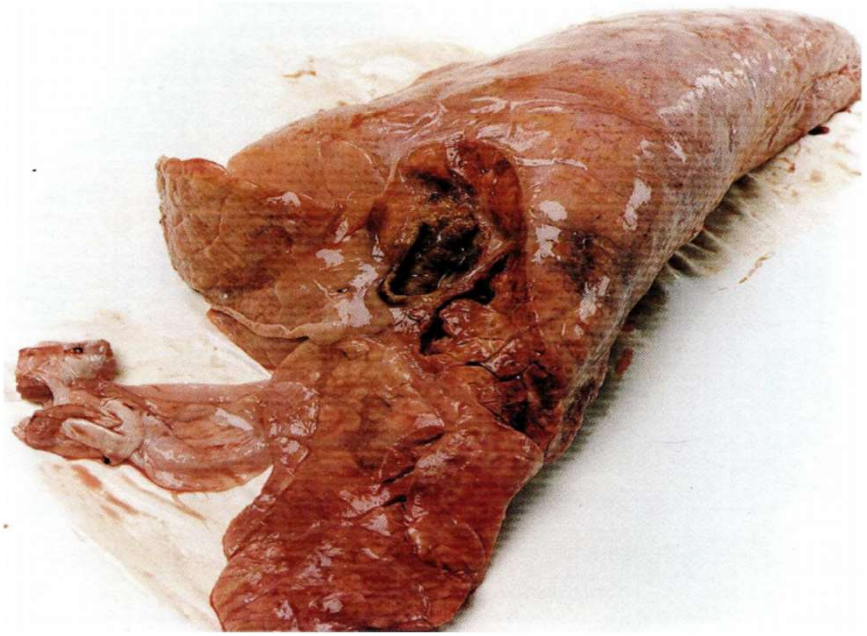


Lung
Pneumonia



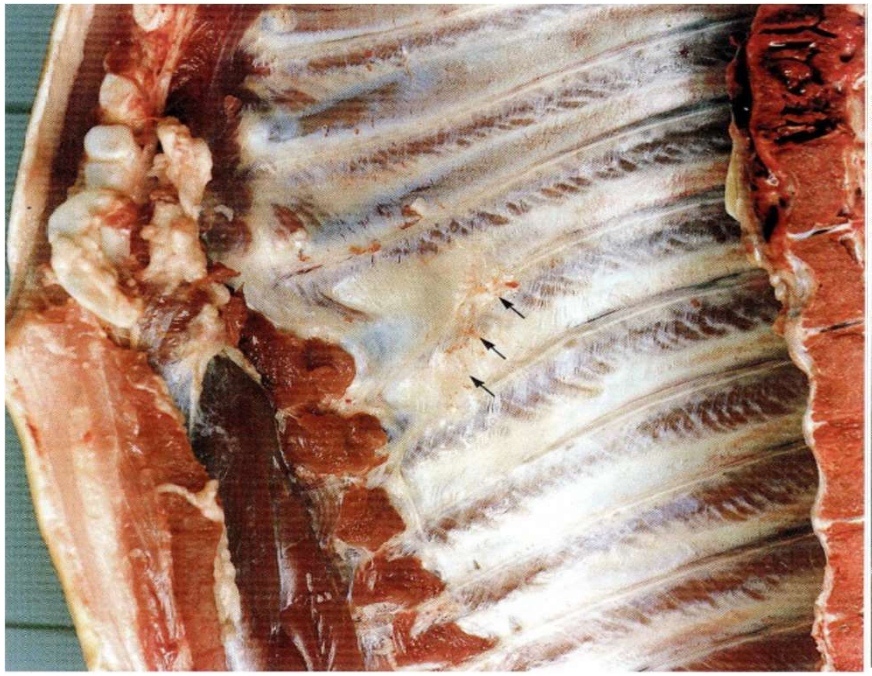
Lung
multiple abscesses





Pleurisy

old and active process



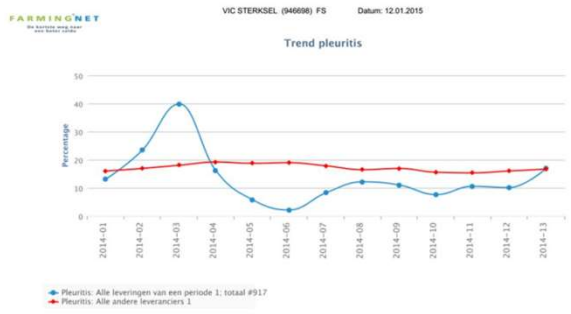
Skin

acute rubor and chronic inflammation

Trotters

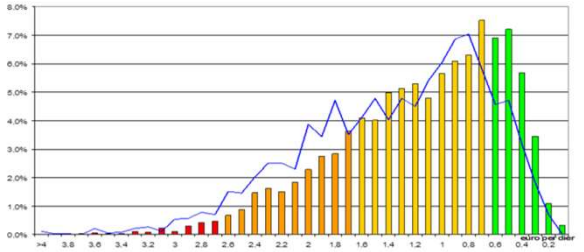
sores and joint inflammation

Chain approach for improvement



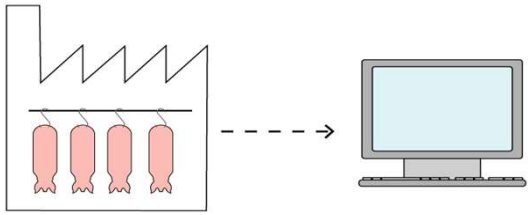
www.farmingnet.nl

"Demo"-button

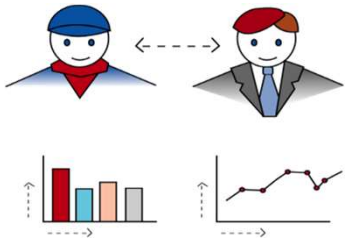


Slaughterhouse **Pig Farmer**

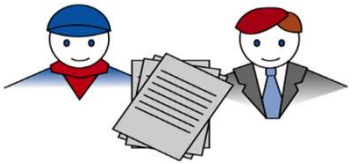
Data analysis **and** ***interpretation*** **leads to** ***effective*** **counselling by veterianarian and nutritionists**



Slaughter data



Analysis



improvement plan

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Vion FOOD GROUP

FARMING NET

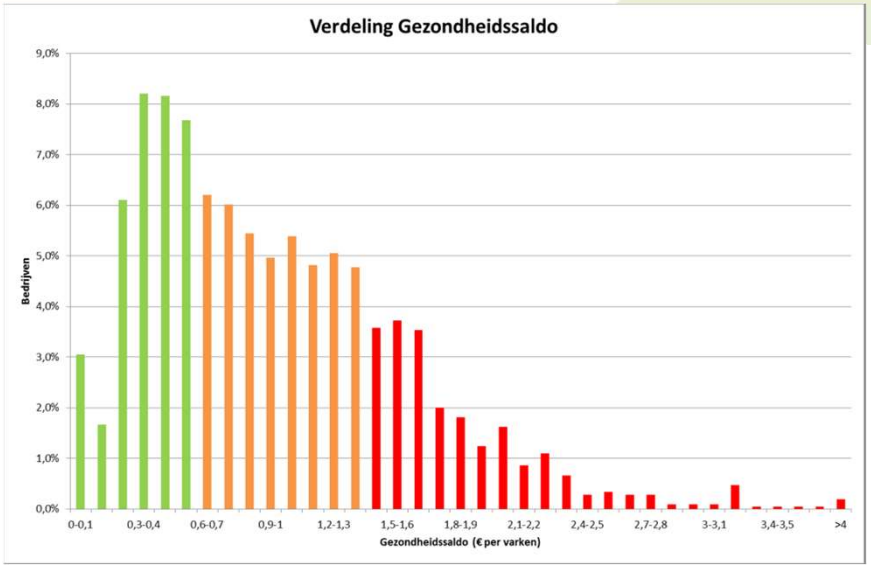
VION | LEVERINGEN | MANAGEMENT INFO | OPGAVE | CONTACT / INSTELLINGEN | UITLOGGEN

FarmingNet

FARMING NET

WAGENINGEN LIVESTOCK RESEARCH - VIC (946698) FS Datum: 12.01.2018

Gem. gezondheidskosten



Production losses in euros - Incentives

Management Info | Gezondheidssaldo scherm P60.90

Kosten per varken (EUR)	Orgaan				Karkas		
	Lever aangetast	Lever afgekeurd	Longen aangetast	Niet te beoordelen	Pleuritis	Ontstoken huid	Ontstoken poot
Varkenshouder	*€ 1.89*	*€ 2.89*	*€ 5.04*	*€ 6.04*	*€ 3.15*	*€ 3.78*	*€ 3.15*

% afwijkingen	Aantal varkens	Orgaan				Karkas		
		Lever aangetast	Lever afgekeurd	Longen aangetast	Niet te beoordelen	Pleuritis	Ontstoken huid	Ontstoken poot
Norm Vion		*0.2*	*2.0*	*4.0*	*0.6*	*10.0*	*0.2*	*0.5*
UBN laatste 3 mnd	1485	0.1	1.4	36.5	0.6	37.1	1.2	1.1
UBN laatste 12 mnd	5799	0.1	3.4	30.8	0.3	28.0	1.2	0.7

Kosten per 3 mnd	Aantal varkens	Orgaan				Karkas			Kosten totaal	Kosten per varken
		Lever aangetast	Lever afgekeurd	Longen aangetast	Niet te beoordelen	Pleuritis	Ontstoken huid	Ontstoken poot		
Norm Vion	*1485*	*6*	*86*	*299*	*54*	*468*	*11*	*23*	*947*	*€ 0.64*
UBN	1485	3	60	2732	54	1735	67	51	4702	€ 3.17
Gezondheidssaldo									€ 3755	€ 2.53

Kosten per 12 mnd	Aantal varkens	Orgaan				Karkas			Kosten totaal	Kosten per varken
		Lever aangetast	Lever afgekeurd	Longen aangetast	Niet te beoordelen	Pleuritis	Ontstoken huid	Ontstoken poot		
Norm Vion	*5799*	*22*	*335*	*1169*	*210*	*1827*	*44*	*91*	*3698*	*€ 0.64*
UBN	5799	11	570	9002	105	5115	263	128	15194	€ 2.62
Gezondheidssaldo									€ 11496	€ 1.98

Terugdringen van slachtafwijkingen in de varkensvleesketen
Bondt, N., D. van den Elzen, R. Hoste, C. van Wagenberg, I. Vermeij en B. van der Fels
LEI, 2004 Rapport 5.04.04; ISBN 90-5242-922-7;

Interventions and the role of the veterinarian

Pig Pointer

General Biosecurity

Rodent/vermin control

Pig supply

Water

outdoor access

Feed

Cats

Farmer ID

23-8-2017

Good

Average

Weak

Your Score

Parameters	Percentage
General Biosecurity	83%
Pig supply	91%
outdoor access	53%
Cats	63%
Feed	71%
Water	0%
Rodent/vermin control	57%

Vion FOOD GROUP

Universiteit Utrecht

WAGENINGEN UNIVERSITY & RESEARCH


Genetics
Feed supplier
Veterinary practice
Pig farmer
Abattoir and meat processing
Retailer

Challenge; walk the walk and talk the talk…

- **Food business operator is responsible for food safety**
  - Based on sound scientific evidence and risk-based approaches
  - Comprehensive control of relevant hazards
    - *doesn't mean zero tolerance?!*
  - Designing its own systems and procedures
- **Data sharing in the production chain**
  - Relevance!
  - Using modern applications
- **Is transparency a solution for our trust challenge?**
  - https://www.vion-transparency.com

Challenge; show what you are made of…

- **Microbiological Performance Monitoring**
  - Evidence of the level of control in the process
    - When failing to meet targets, root cause analysis and preventive measures are taken.
- **Chemical Performance Monitoring**
  - The virtue of risk based?
- **Taking samples at relevant points in the production chain**
  - Where do hazards enter?
  - Where do we have room to mitigate?

Challenge; balancing public and private control

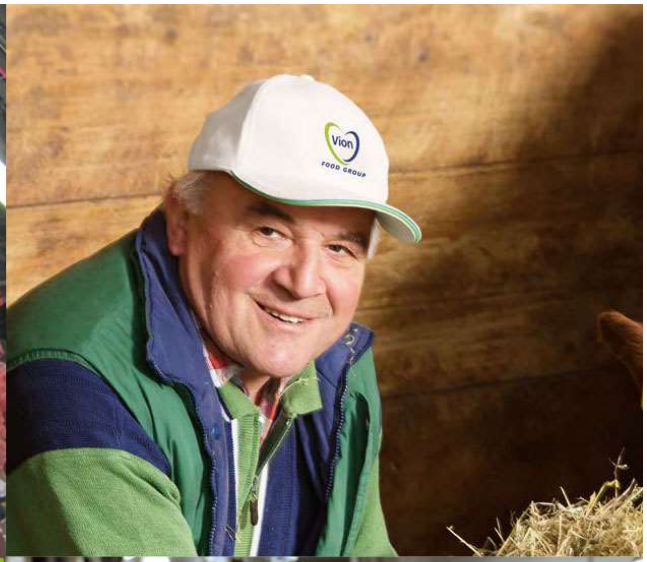
Competent Authority supervises

- Robust performances of the FBO are verifiable evidence of high level of control
- Science over legislation? > MRL antibiotics? Listeria on a carcass?

- **Who is the risk manager?**
- **Joint responsibility?**
  - Two captains on one ship?
  - Or can we find middle ground?

- **The consumer has to benefit!**






Thank you.