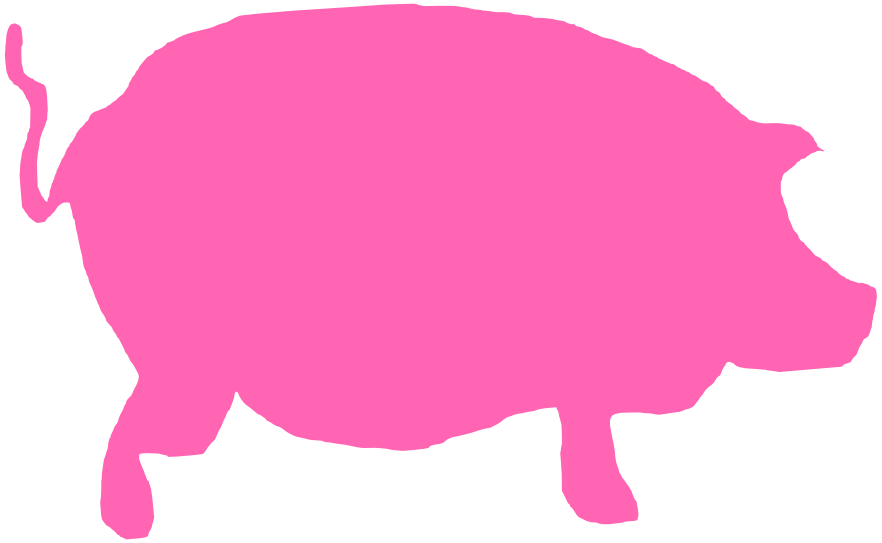
CA18105

RIBMINS

Risk-based meat inspection and integrated meat safety assurance



FCI & HEIs for pigs

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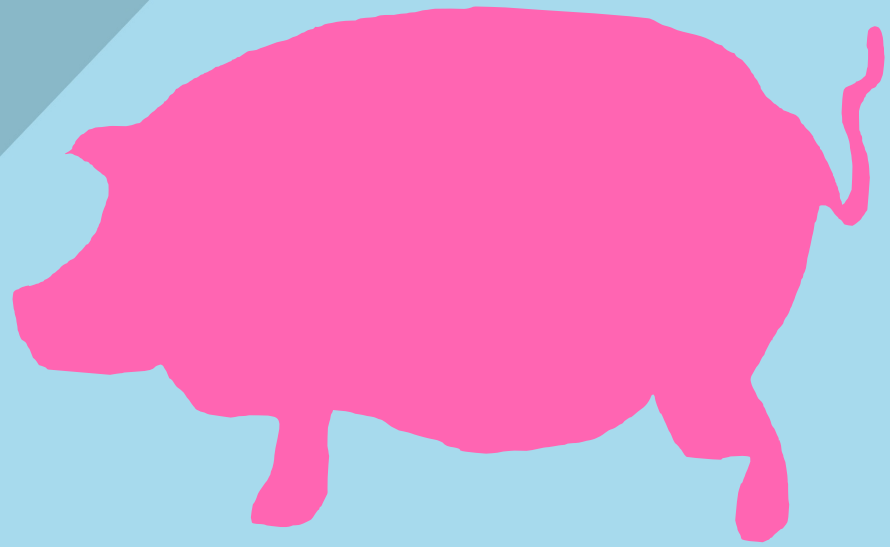
FCI for Pigs

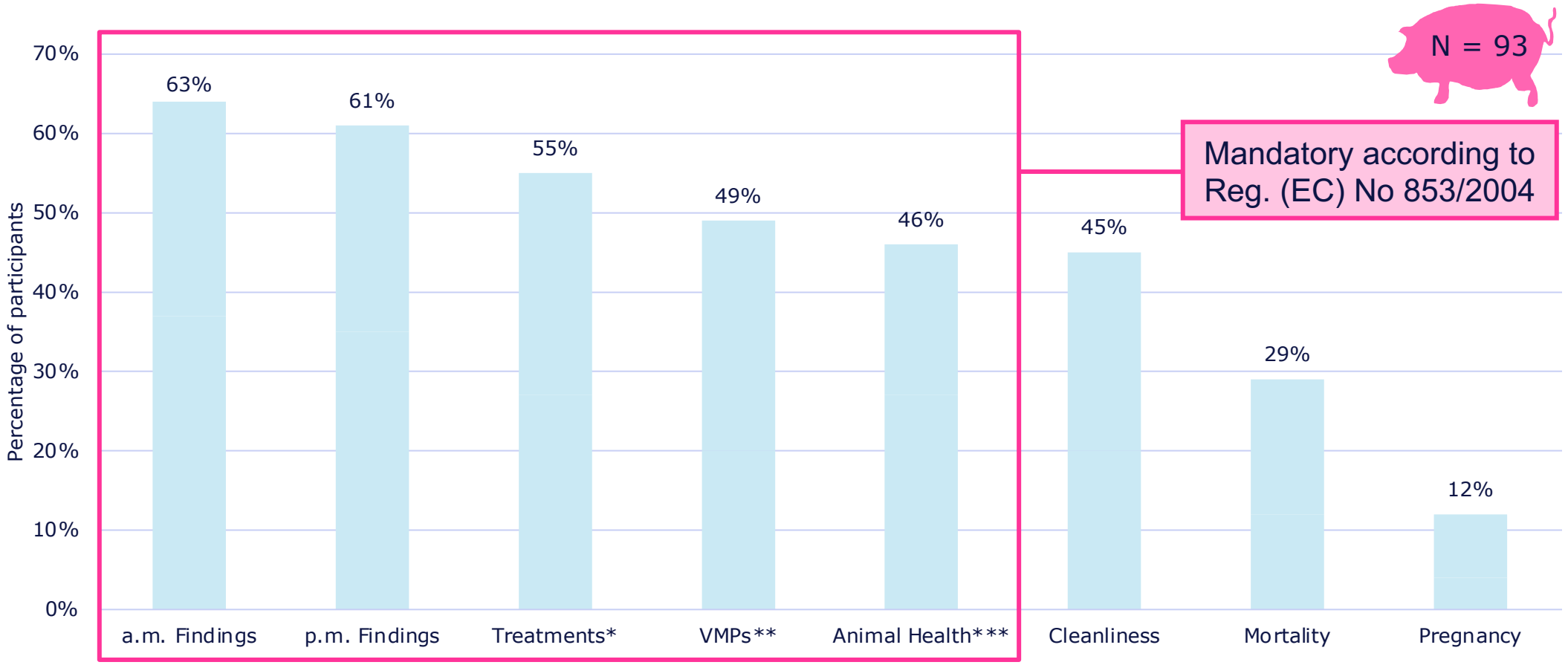


WG2 Introduction FCI

- Information to support meat safety-related decision making
- Content helps to determine intensity and methods of official meat inspection
- FCI enables the categorisation of farms based on risk → anticipation of the risk level of the respective herd or the individual animal before slaughter
- EU regulation does not specify which exact information should be collected

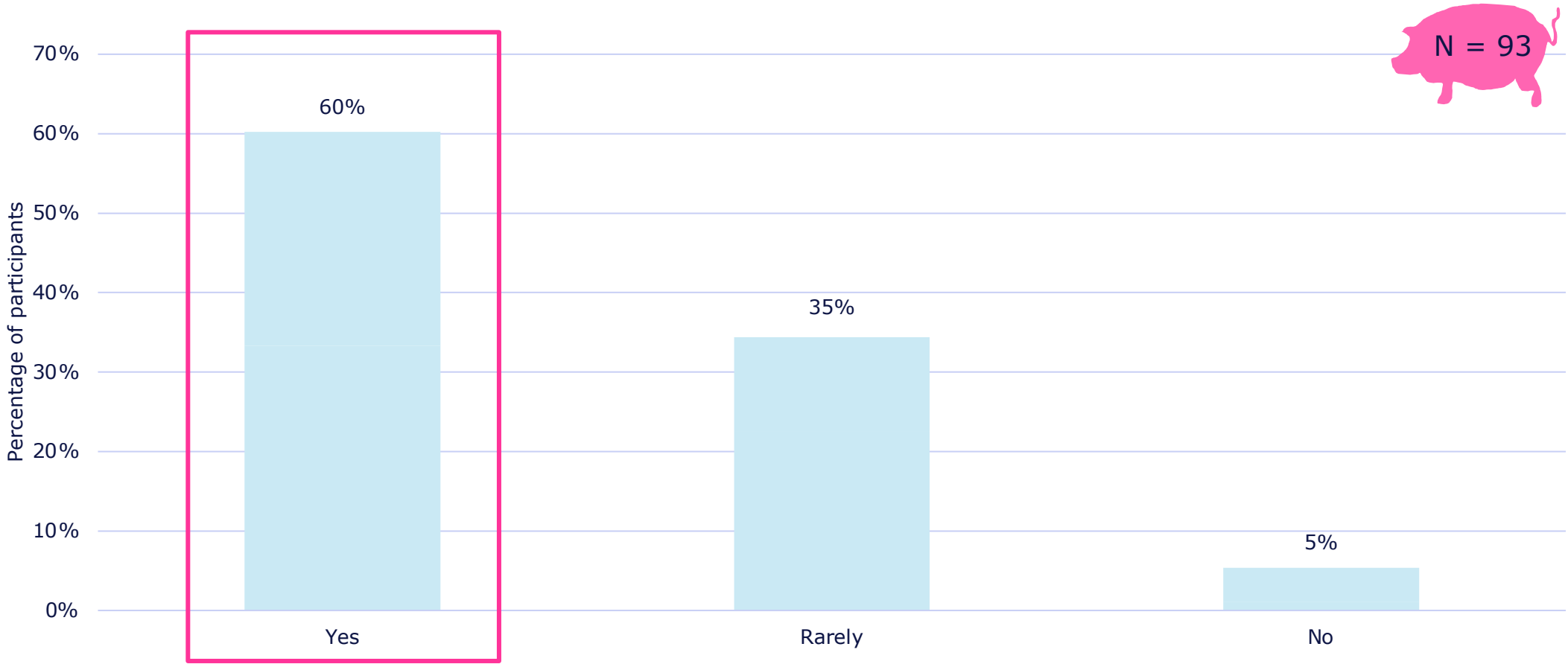
Which information do you receive?

WG2 Which information do you receive? [Excerpt]



*Treatments with a withdrawal period during the fattening period
**Veterinary medicinal products (VMPs) that have been applied to the pigs
***Data from the private veterinarian regarding the animal health status

WG2 Is FCI helpful regarding food safety?



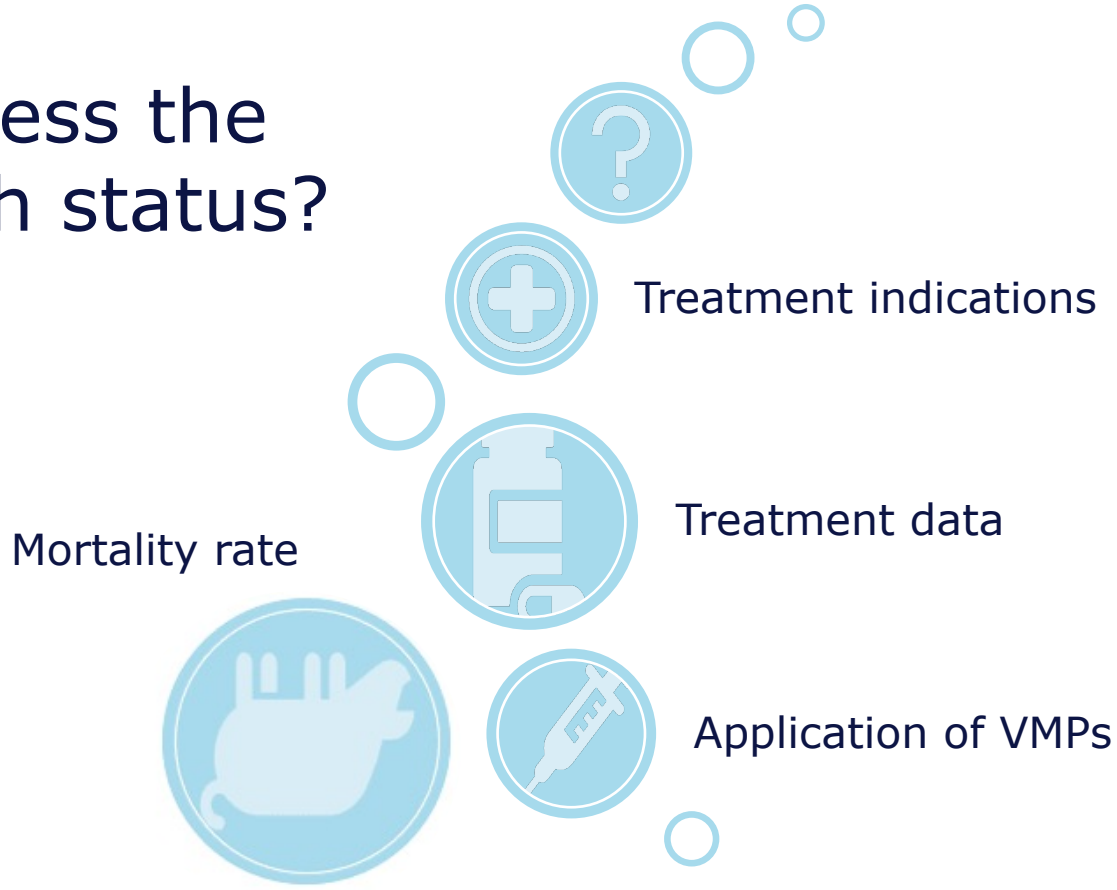
WG2 Which information is helpful?

- Significant correlation between assessment of FCI as helpful &
  - access to data regarding the animal health status
  - access to additional information in case of abnormalities
  - access to data regarding VMPs that have been applied
  - having regular contact with private veterinarian of the farm
  - access to data from previous a.m. inspections

- No correlation: p.m. findings, treatments, mortality, cleanliness

Animal health status

How to assess the animal health status?



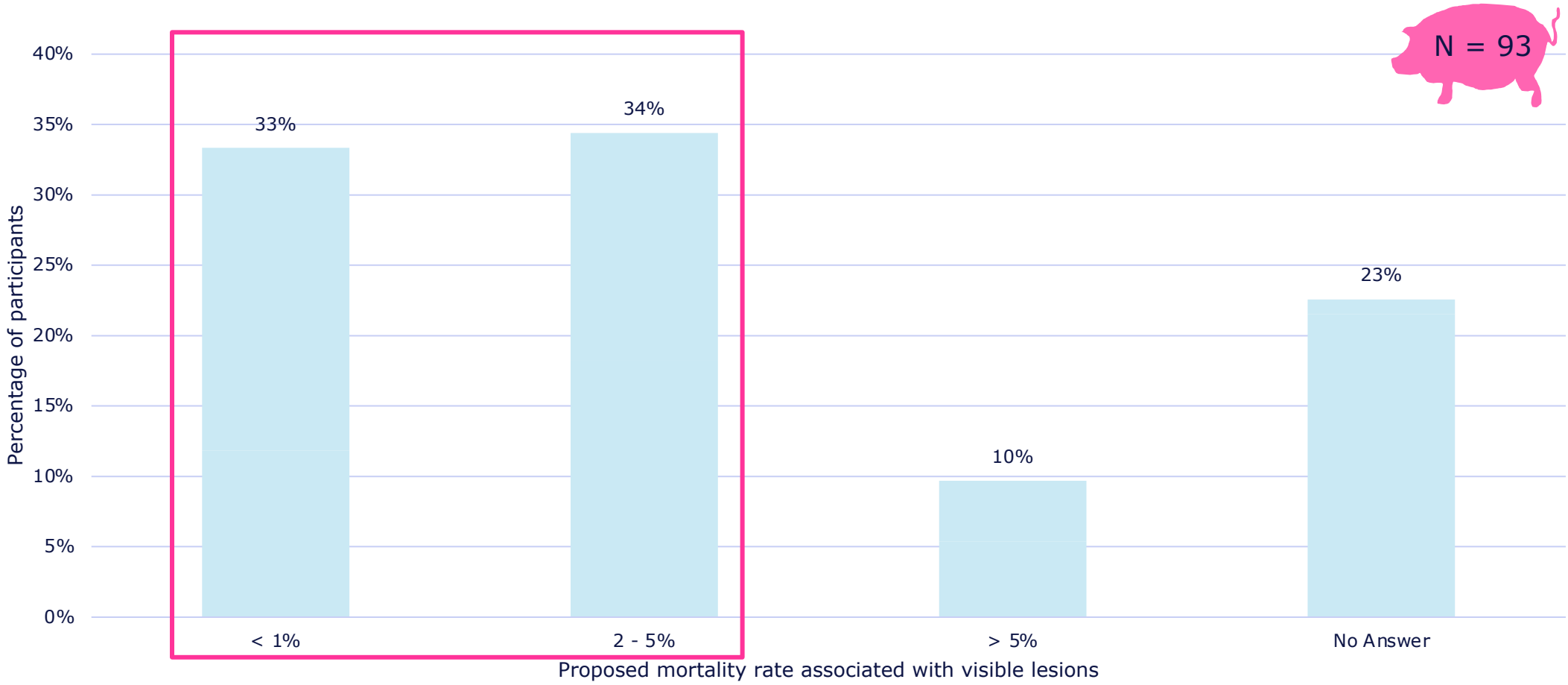
Mortality rate

$$\frac{\text{Number of dead and euthanised pigs during fattening}}{\text{Number of animals at the beginning of fattening}}$$

- Type of numerical data
- Easily accessible and well-suited
- Binary, no room for deliberation

What is the optimal critical threshold?

WG2 What is the optimal critical threshold?



WG2 Treatment data

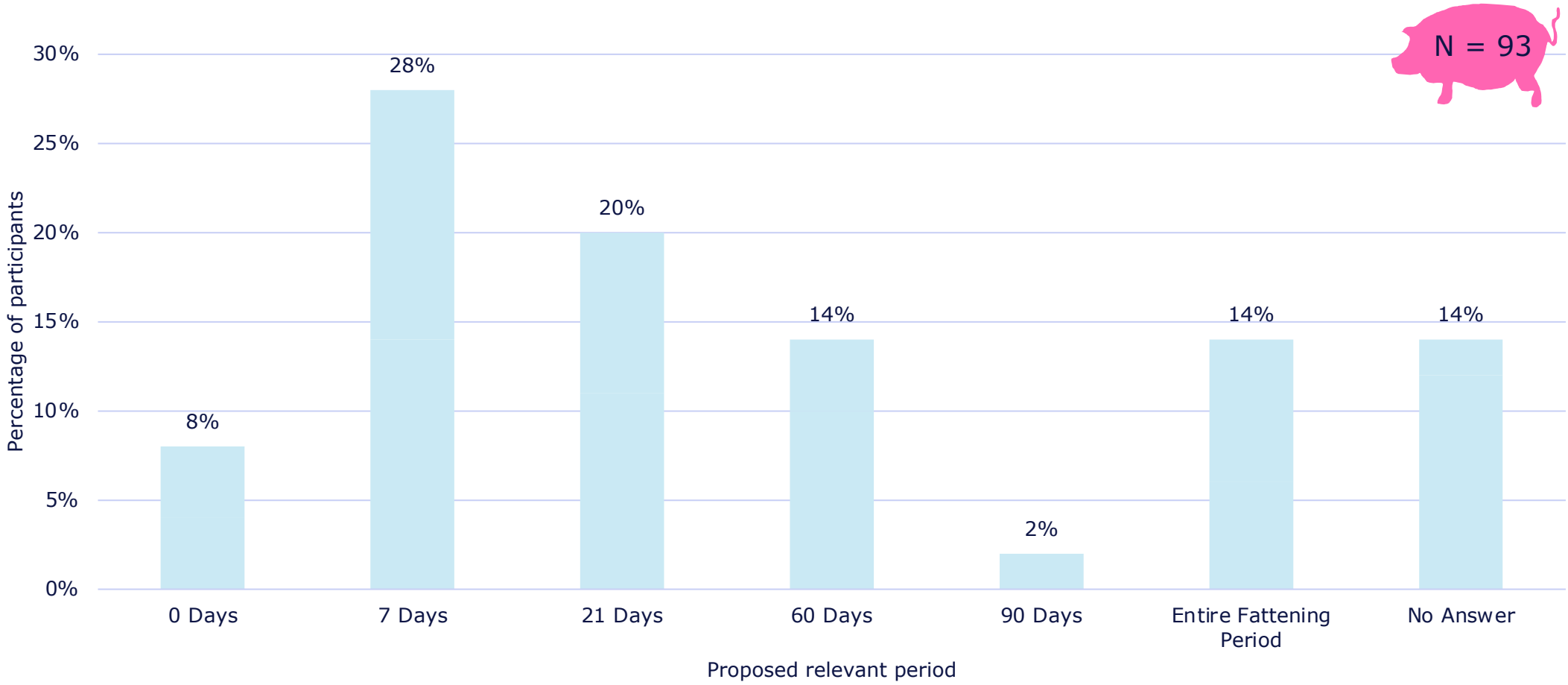
What is the relevant period before slaughter for the documentation obligation in your country?

- Participants from the same country provided different time specifications

- Expert survey on national definitions of the relevant period for reporting treatments with veterinary medicinal products with withdrawal periods

France	not defined	Netherlands	60 days
Denmark	0 days	Belgium	2 months
Germany	7 days	Italy	90 days
Spain	30 days	Poland	fattenig period

WG2 What should be the relevant period?



WG2 Relevant data?

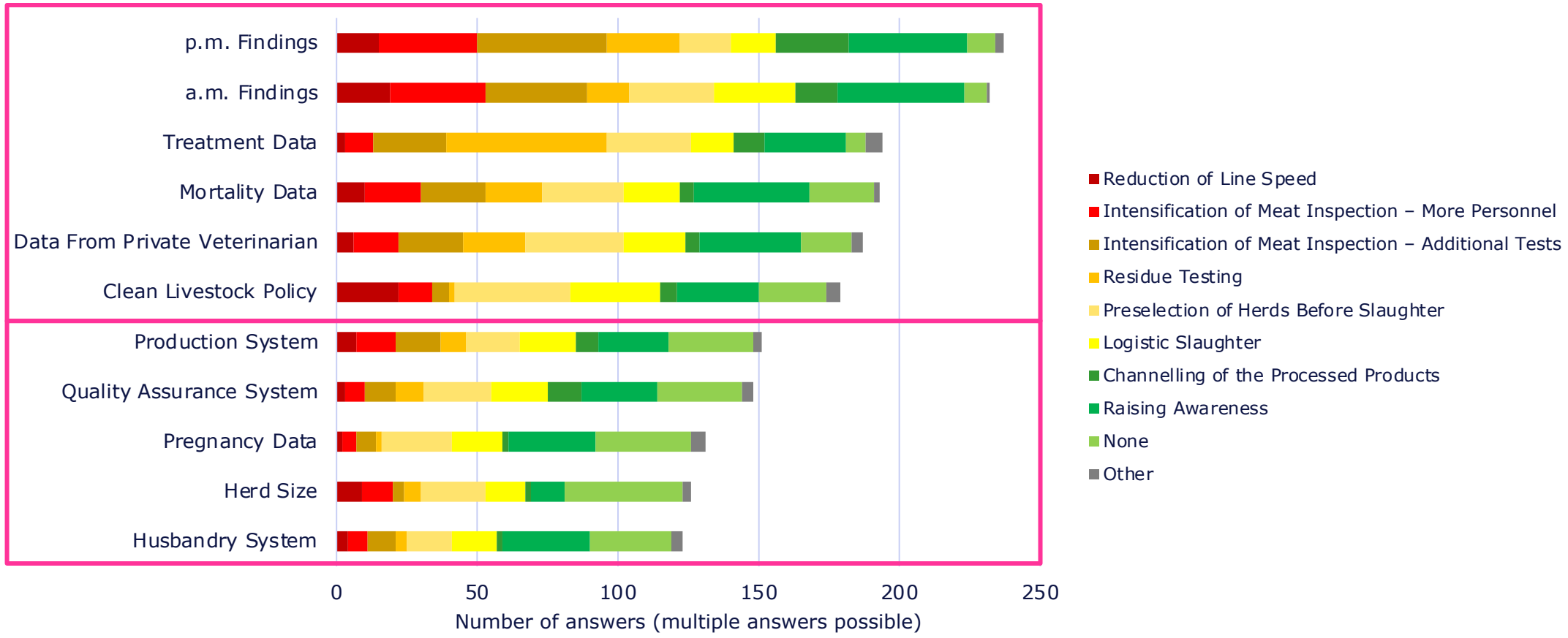
- Determining meaningful thresholds is challenging
- Animal health is influenced by various factors
- Correlation between usage of VMPs and pathologic findings?

- Discussion on inadequacies and insufficiency of FCI for almost 10 years

What are the consequences of knowledge of FCI?

Which data do you want to be included in FCI?

WG2 Consequences of knowledge of…



WG2 Suggestions for improvement

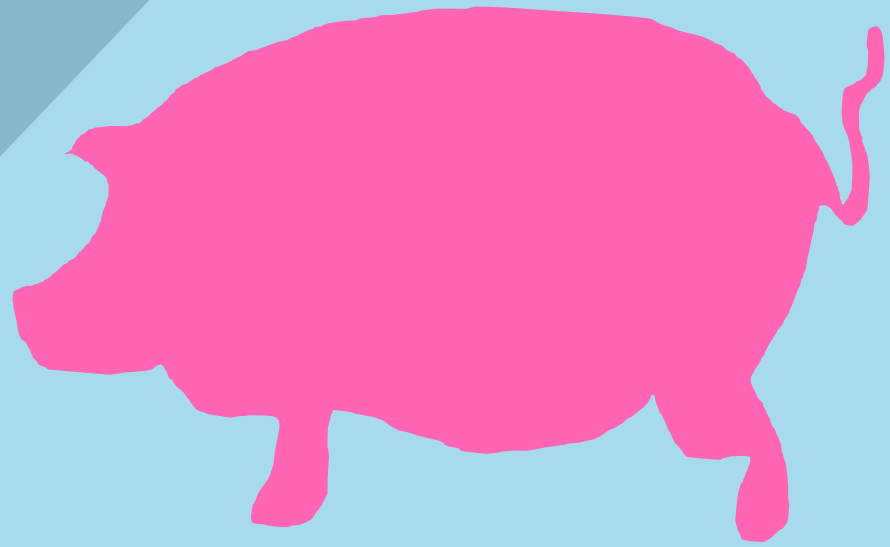
- Respondents want information on:
  - mortality rate
  - husbandry and production system
  - (more) treatment data and indications

- Digitalization and electronic transmission could improve and standardise FCI
- More guidance on the information that is required is needed
  - e.g., in form of additional explanations, including examples

WG2 Conclusions FCI

- FCI is an essential part of the risk-based meat safety assurance system.
- It is important to provide clear specifications of the necessary data for FCI.
- FCI for pigs in Europe is not successfully implemented.
- 45% of the respondents are missing legally required data in FCI.
- For 40% of respondents, FCI is rarely or not useful regarding food safety.
- Access to data regarding the animal health status and to additional information in case of abnormalities significantly correlates to the assessment of FCI as useful.
- At the moment, no recommendation for the optimal critical threshold (mortality rate) or the meaningful relevant period is possible.

HEIs for Pigs



WG2 Introduction HEIs

- HEIs are used to categorise the risk exposure of herds to biological hazards and to assess the risk control and reduction capabilities of abattoirs
- HEIs or the information they provide should be part of FCI to adjust current methods for meat inspection
- Implementation of HEIs is risk-based, depending on the epidemiological situation of each country or the region of the farm
- Application of HEIs is not mandatory

What is the extent of implementation, and are there official or private monitoring and surveillance systems in place?

WG2 HEIs for pigs

- EFSA (2011) addressed six foodborne biological hazards to public health associated with pigs and pork:

Salmonella

Yersinia enterocolitica

Toxoplasma gondii

Trichinella

Cysticercus cellulosae

Mycobacteria

WG2 Application of HEIs: *Salmonella*

HEI 1 *Salmonella* in breeding pigs
- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Pooled faeces sample

HEI 2 *Salmonella* in fattening pigs prior to slaughter
- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Pooled faeces sample

HEI 3 Controlled housing conditions on the farm (both for breeding and fattening pigs)
- Diagnostic method: Auditing
- Sample material: Not applicable

HEI 4 Transport and lairage conditions (both for breeding and fattening pigs)
- Diagnostic method: Auditing
- Sample material: Not applicable

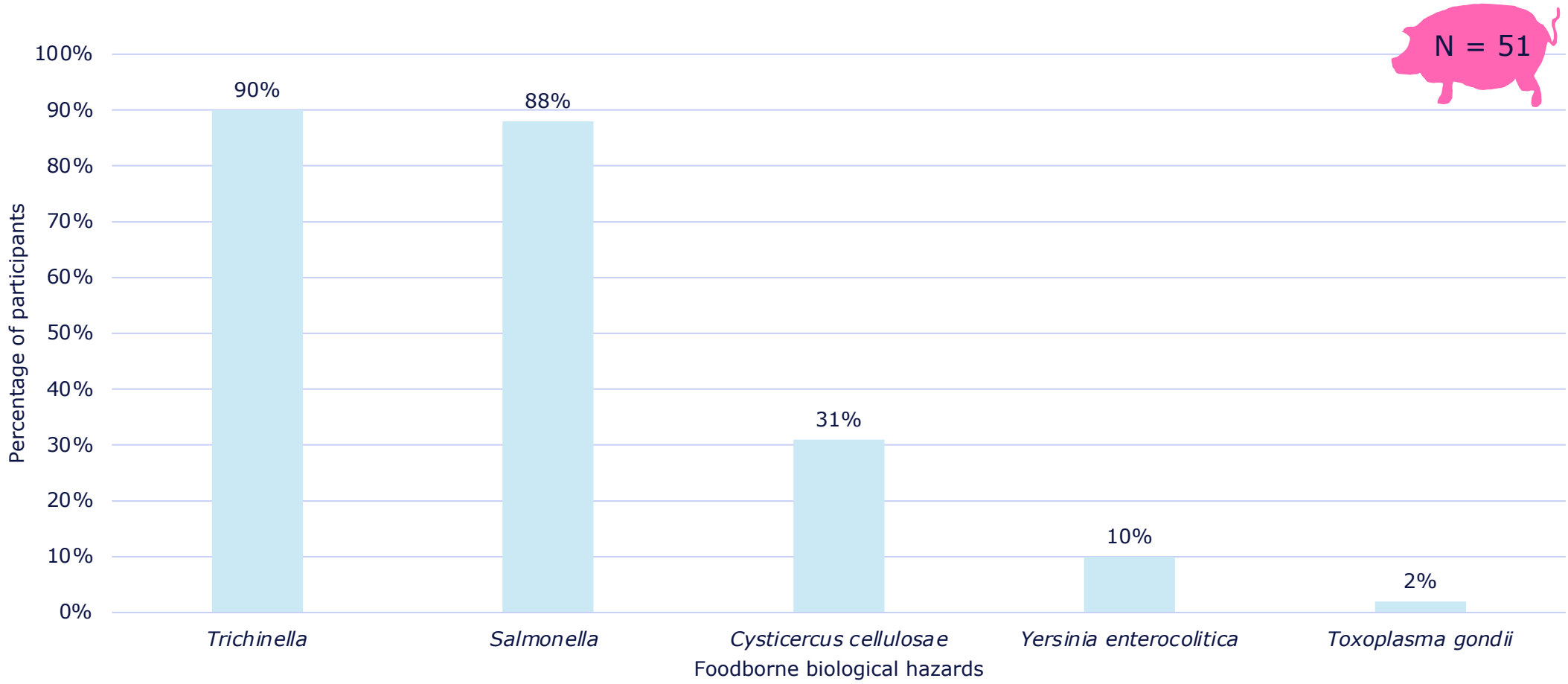
Farm
Transport and abattoir
Abattoir

HEI 5 *Salmonella* in fattening pigs – incoming to slaughter process (evisceration stage)
- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Ileal content

HEI 6 *Salmonella* in fattening pigs – carcasses after slaughter process before chilling
- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Carcass swab

HEI 7 *Salmonella* in fattening pigs – carcasses after slaughter process after chilling)
- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Carcass swab

WG2 Overview MoSS* implemented



*MoSS = monitoring and surveillance systems

HEIs for *Trichinella*

N = 46

96%

HEI 1 *Trichinella* in free-range and backyard pigs (both fattening and breeding pigs)
- Diagnostic method: Digestion
- Sample material: Meat

96%

HEI 2 *Trichinella* in pigs from non-officially recognised controlled housing conditions (both fattening and breeding pigs)
- Diagnostic method: Digestion
- Sample material: Meat

2%

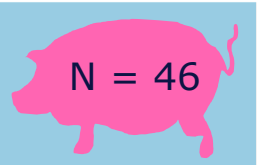
HEI 3 Farms with officially recognised controlled housing conditions and *Trichinella* free status
- Diagnostic method: Auditing
- Sample material: Not applicable

96%

HEI 4 *Trichinella* in wildlife (e.g., wild boars, bears, raccoon dogs, foxes, jackals, wolves, wild cats, genets, mustelids)
- Diagnostic method: Digestion
- Sample material: Meat

Abattoir
Farm
Environment

HEIs for *Trichinella*



- 10% (FBOs, same Western EU-MS): no testing for *Trichinella*
- Country is not allowed to apply for derogation from *Trichinella* testing → freezing?
- 4/5 FBOs also did not perform any official monitoring for *Salmonella*

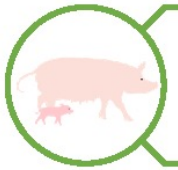
- Most common consequent measures in case of *Trichinella*-positive results
  - 67%: Feedback to the farm
  - 57%: Categorisation of farms
  - 43%: Raising awareness

- Categorisation of abattoirs least mentioned by 2%

WG2 HEIs for *Salmonella*

N = 45

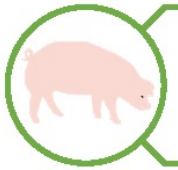
7%



HEI 1 *Salmonella* in breeding pigs

- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Pooled faeces sample

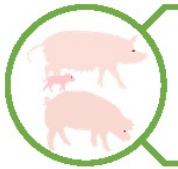
7%



HEI 2 *Salmonella* in fattening pigs prior to slaughter

- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Pooled faeces sample

2%



HEI 3 Controlled housing conditions on the farm (both for breeding and fattening pigs)

- Diagnostic method: Auditing
- Sample material: Not applicable

Farm

WG2 HEIs for *Salmonella*

N = 45

7%

HEI 5 *Salmonella* in fattening pigs – incoming to slaughter process (evisceration stage)

- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Ileal content

69%

HEI 6 *Salmonella* in fattening pigs – carcasses after slaughter process before chilling

- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Carcass swab

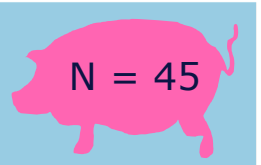
40%

HEI 7 *Salmonella* in fattening pigs – carcasses after slaughter process after chilling)

- Diagnostic method: Microbiology (detection and serotyping)
- Sample material: Carcass swab

Abattoir

HEIs for *Salmonella*



- HEI 6 = *Salmonella* Process Hygiene Criteria (Reg. (EC) No 2073/2005)
  - 32% (EU MSs + testing for *Salmonella*) ≠ Process Hygiene Criteria
- 12% (OVs, 4x EU MSs): no testing for *Salmonella*

- Most common consequent measures in case of *Salmonella*-positive results
  - 80%: Surveillance of slaughter hygiene
  - 49%: Feedback to the farm
  - 49%: Raising awareness
  - 44%: Categorisation of farms

- Categorisation of abattoirs least mentioned by 16%

WG2 HEI for *Cysticercus cellulosae*

N = 16

7%

HEI 1 *Cysticercus* cysts in pigs (both fattening and breeding pigs)

- Diagnostic method: Visual meat inspection + PCR for confirmation
- Sample material: Meat

Abattoir

- 100%: Visual meat inspection without PCR
- Significant correlation between region and testing → predominantly Eastern Europe

- Most common consequent measures in case of *Cysticercus cellulosae*-positive results
  - 81%: Raising awareness
  - 75%: Feedback to the farm

- Categorisation of abattoirs least mentioned by 6%

WG2 HEIs for *Yersinia enterocolitica*

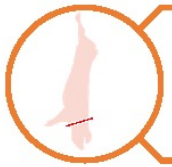
N = 5

20%

HEI 1 *Yersinia enterocolitica* in fattening pigs – incoming to slaughter process (evisceration stage)

- Diagnostic method: Microbiology (detection and biotyping)
- Sample material: Tonsils or rectal content

0%



HEI 2 Slaughter method: separation of head

- Diagnostic method: Auditing
- Sample material: Not applicable

0%

HEI 3 *Yersinia enterocolitica* in fattening pigs – carcasses after slaughter process before chilling

- Diagnostic method: Microbiology (detection and biotyping)
- Sample material: Carcass swab

20%

HEI 4 *Yersinia enterocolitica* in fattening pigs – carcasses after slaughter process and after chilling

- Diagnostic method: Microbiology (detection and biotyping)
- Sample material: Carcass swab

Abattoir

HEIs for *Toxoplasma gondii*

N = 1

0%

HEI 1 Farms with officially recognised controlled housing conditions (including control of cats and boots)
- Diagnostic method: Auditing
- Sample material: Not applicable

100%

HEI 2 *Toxoplasma* in breeding pigs from officially recognised controlled housing conditions
- Diagnostic method: Serology
- Sample material: Blood

100%

HEI 3 *Toxoplasma* in all pigs from non-officially recognised controlled housing conditions
- Diagnostic method: Serology
- Sample material: Blood

Farm
Abattoir

WG2 Conclusions HEIs

- HEIs are also fundamental for the risk-based meat safety assurance system.
- Most HEIs for pigs, equivalent to legally regulated testing, have been implemented (e.g., *Salmonella* Process Hygiene Criteria)
- Additional HEIs are underutilized, especially HEIs at farm-level.
- The use of combined HEIs is necessary for risk categorization.
- The main implemented consequences included raising awareness, farm categorization and feedback to farmers.
- Abattoir categorisation was the least implemented measure.
- More training is needed in HEIs application, with an emphasis on understanding the correct diagnostic techniques.

Thank you for your attention.

And a special thanks to
all participants, RIBMINS NCPs,
and WG 2 members.

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