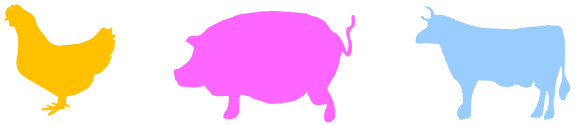
CA18105

RIBMINS

Risk-based meat inspection and integrated meat safety assurance



Harmonised Epidemiological Indicators

How Is the Current Situation of Implementation for Broilers, Pigs and Bovines in Europe?

cost EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

Funded by the 2020 Framework Programme of the European Union

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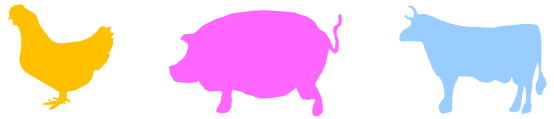
Harmonised Epidemiological Indicator

EFSA's definition (2011):

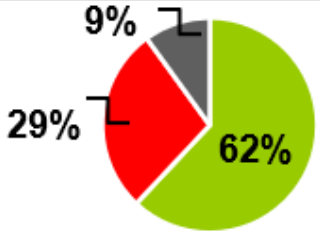
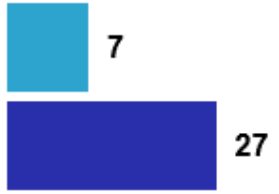
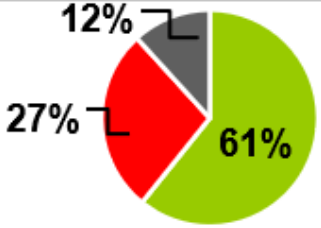
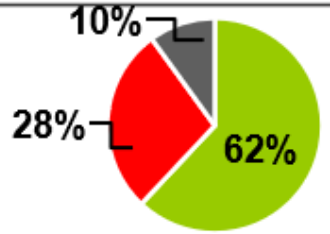
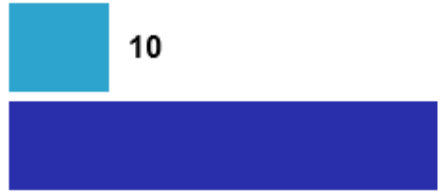
- **Prevalence or incidence** of the hazard at a certain stage of the food chain

- **Indirect measure of the hazards** (such as audits of farms) that correlates to a human health risk caused by the hazard

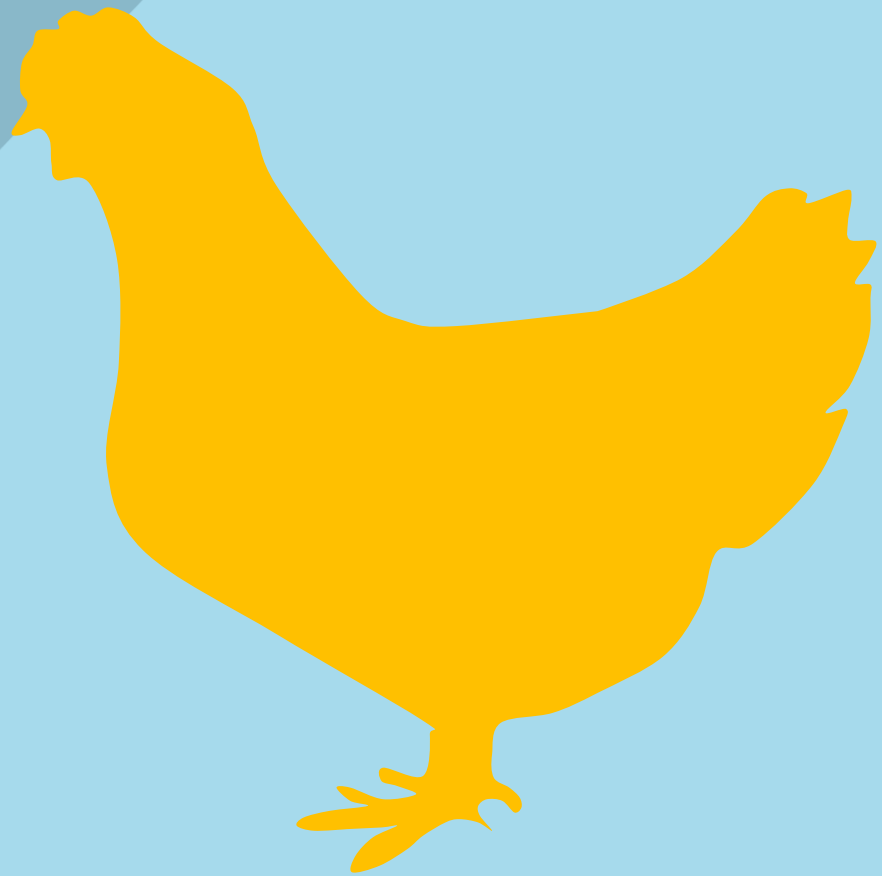
WG2 Material and Methods

- Online questionnaire for  on
  - Implementation of HEIs
  - Consequent measures to monitoring
- Questions on
  - Monitoring and surveillance systems (MoSSs)
  - Stages at which testing is performed
  - Diagnostic methods
  - Sample materials

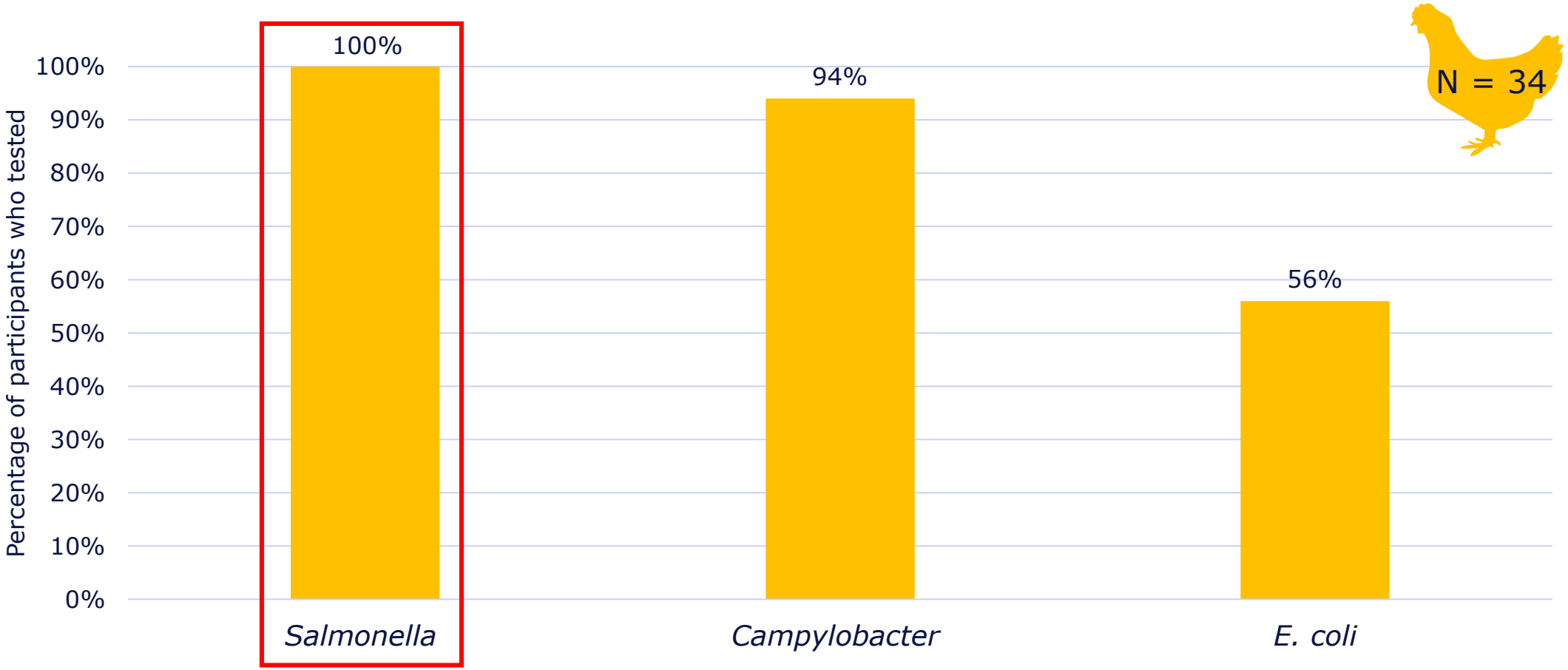
WG2 Results: General Questions

Participants	Role	Countries
	OV/MIO FBO/QAM Other	EU Non-EU and EEA
 34		 N = 15 = 10
 51		 N = 17 = 13
 58		 N = 18 = 13

Results for Broilers



Results: MoSSs* Overview



Foodborne biological hazards participants tested for in broilers

*MoSSs = monitoring and surveillance systems

Results: HEIs for *Salmonella*

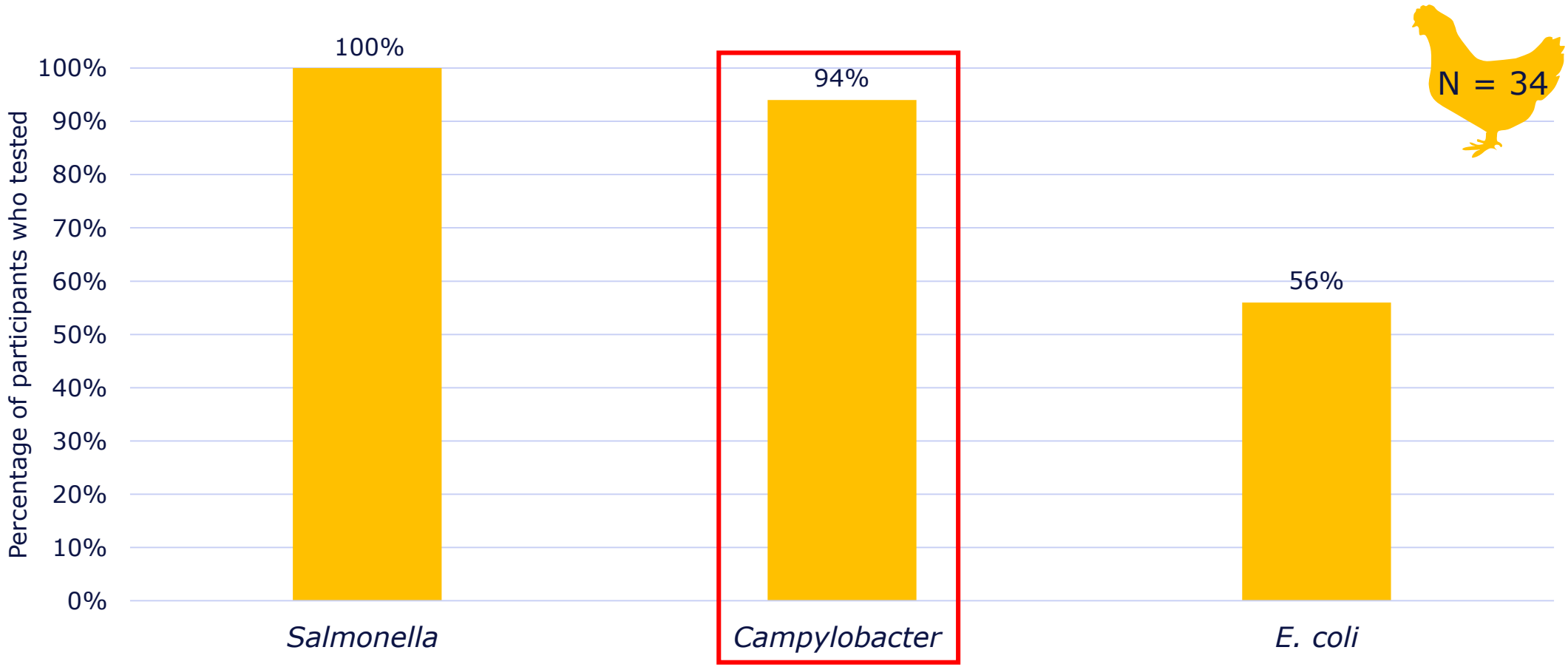
- HEI 2 *Salmonella* in poultry flocks prior to slaughter
  - **91%: Microbiology + pooled faeces**

- HEI 4 *Salmonella* in birds – carcasses after slaughter process and chilling
  - **62%: microbiology + neck and breast skin**
- HEI 4 = PHC* for *Salmonella* in broilers (Reg. (EC) No 2073/2005)
  - **37% (EU MSs + testing for *Salmonella*) ≠ PHC**

- Most common consequent measures in case of *Salmonella*-positive results
  - 77%: Surveillance of slaughter hygiene
  - 68%: Raising awareness
  - 65%: Feedback to the farm

* process hygiene criterion

Results: MoSSs* Overview



*MoSSs = monitoring and surveillance systems

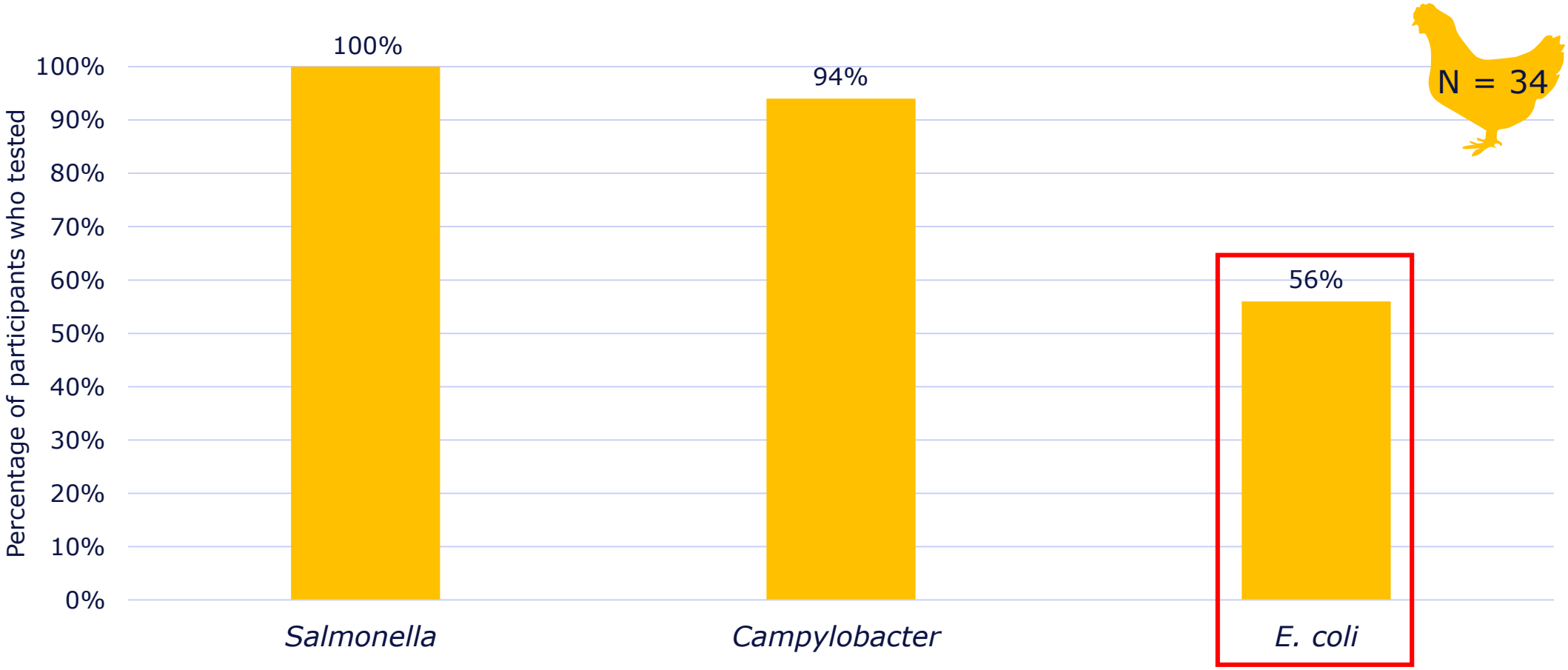
Results: HEIs for *Campylobacter*

- HEI 4 *Campylobacter* in birds – incoming to slaughter process (evisceration stage)
  - **25%: Microbiology – enumeration + caecal content**

- HEI 5 *Campylobacter* in birds – carcasses after slaughter process and chilling
  - **69%: Microbiology – enumeration + neck / breast skin**
- HEI 5 = PHC for *Campylobacter* in broilers (Reg. (EC) No 2073/2005)
  - **37% (EU MSs + testing for *Campylobacter*) ≠ PHC**

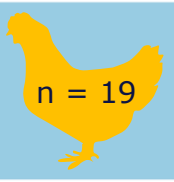
- Most common consequent measures in case of *Campylobacter*-positive results
  - 63%: Raising awareness
  - 59%: Surveillance of slaughter hygiene
  - 53%: Feedback to the farm

Results: MoSSs* Overview



*MoSSs = monitoring and surveillance systems

Results: HEIs for *E. coli*

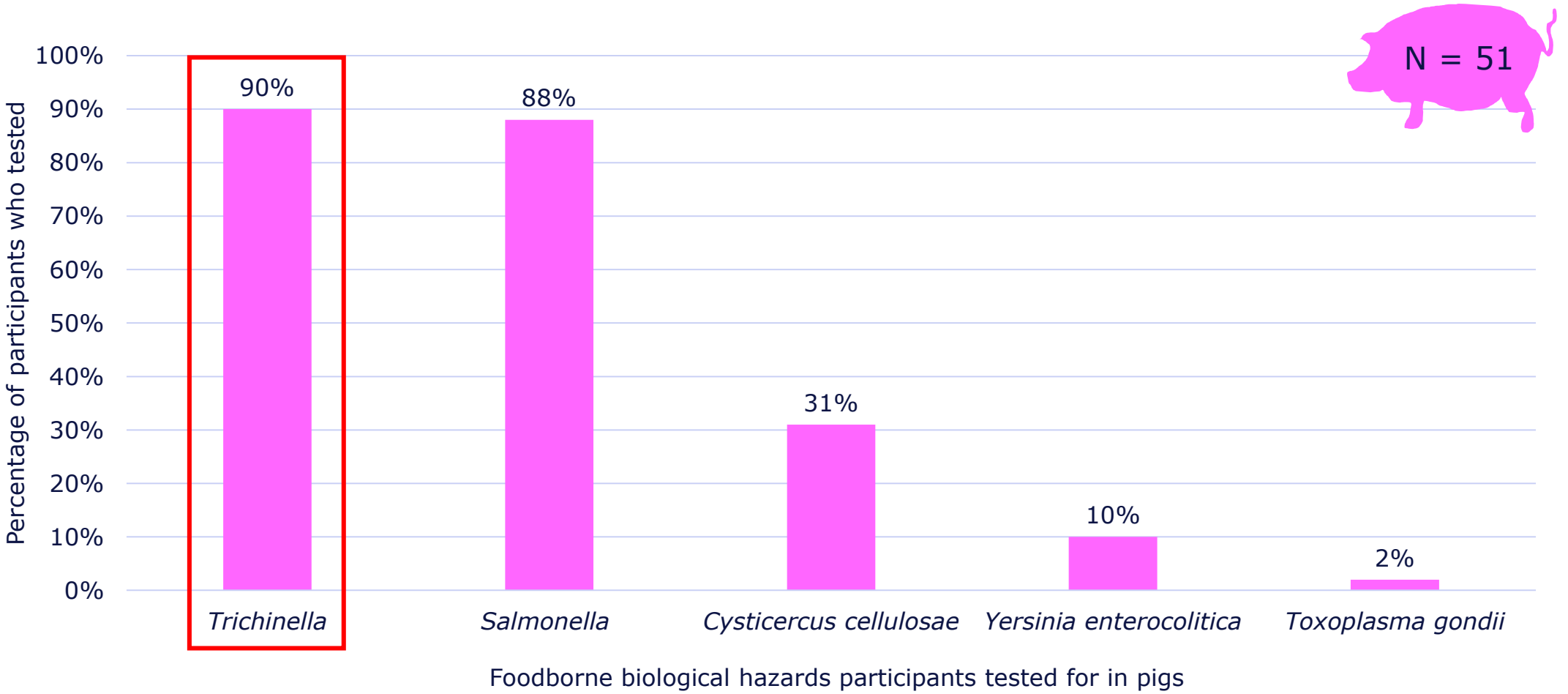


- HEI 1 Generic *E. coli* in birds – carcases after slaughter process and chilling
  - **53%: Microbiology – enumeration + neck / breast skin**

- Most common consequent measures in case of *E. coli*-positive results
  - 68%: Surveillance of slaughter hygiene
  - 47%: Raising awareness
  - 32%: Feedback to the farm

Results for Pigs

Results: MoSSs* Overview



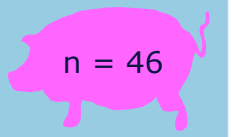
*MoSSs = monitoring and surveillance systems

Results: HEIs for *Trichinella*

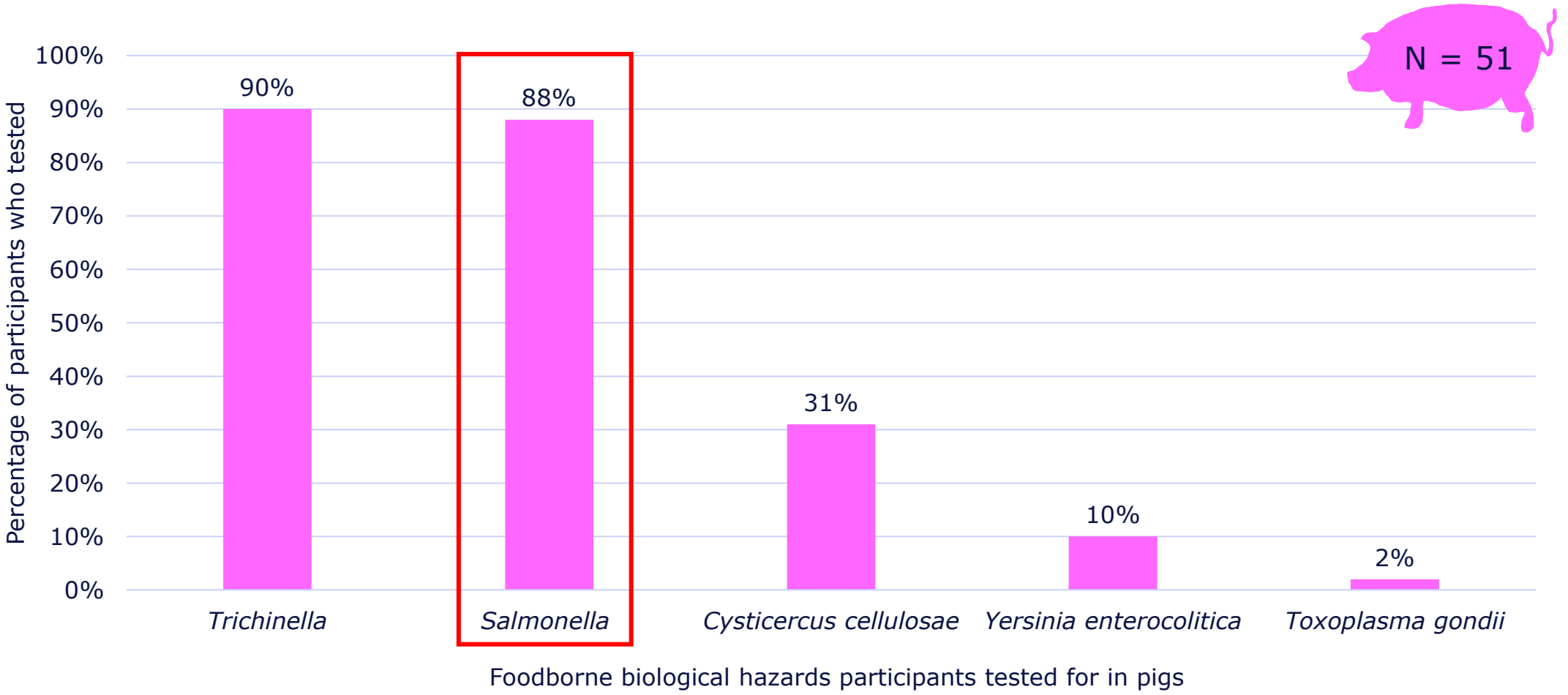
- HEI 1 *Trichinella* in free-range and backyard pigs /
  HEI 2 *Trichinella* in pigs from non-officially recognised controlled housing conditions /
  HEI 4 *Trichinella* in wildlife (e.g., wild boars, bears, raccoon dogs, foxes, wolves)
  - **96%: Digestion method + tissue samples**

- 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
  - 40%: Feedback and Categorisation

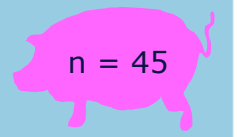


Results: MoSSs* Overview



*MoSSs = monitoring and surveillance systems

Results: HEIs for *Salmonella*



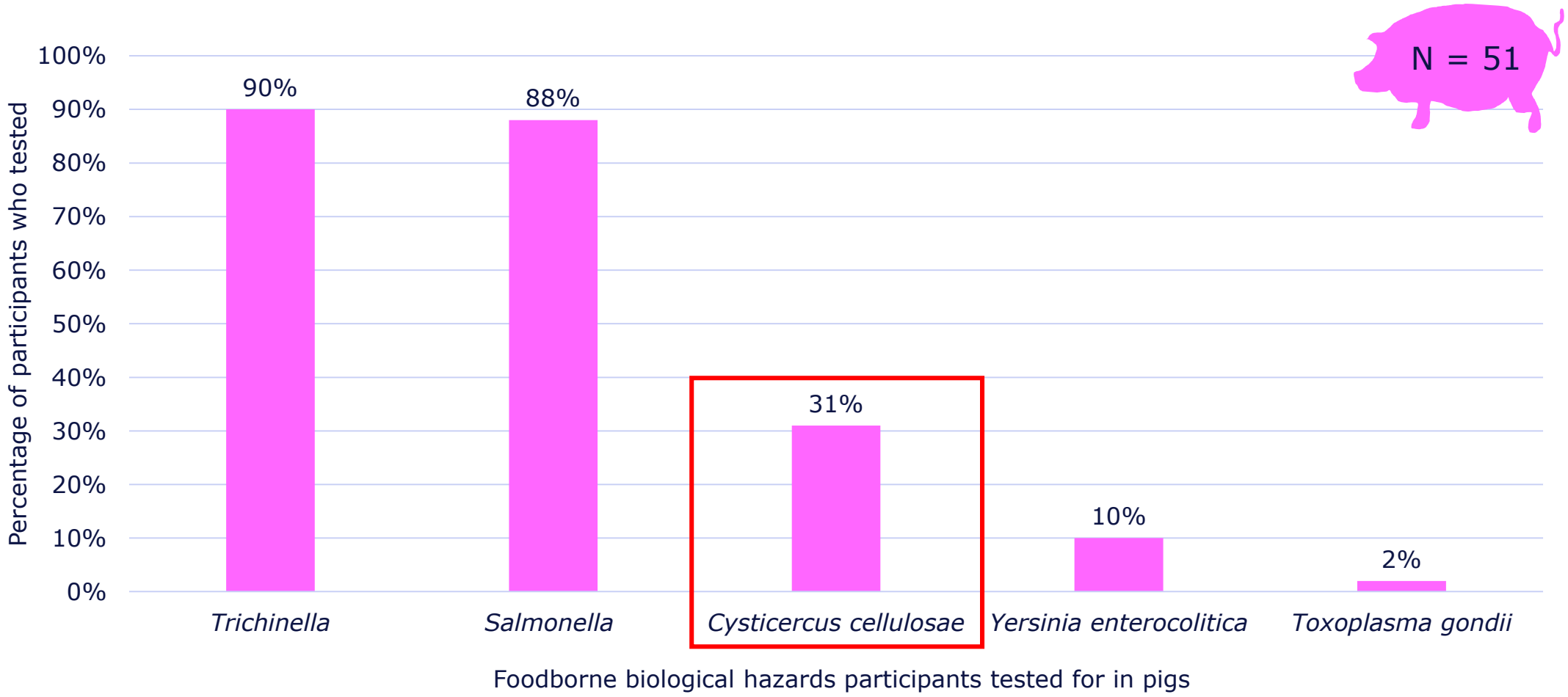
- 12% (OVs, 4x EU MSs): **no testing** for *Salmonella*

- HEI 6 *Salmonella* in fattening pigs – carcasses after slaughter process before chilling
  - **69%: Microbiology + carcass swab**
- HEI 6 = PHC for *Salmonella* in pigs (Reg. (EC) No 2073/2005)
  - **32% (EU MSs + testing for *Salmonella*) ≠ PHC**

- HEI 7 *Salmonella* in fattening pigs – carcasses after slaughter process and chilling
  - **40%: Microbiology + carcass swab**

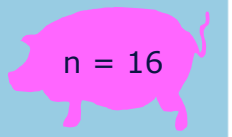
- Most common consequent measures in case of *Salmonella*-positive results
  - 49%: Feedback to the farm
  - 44%: Categorisation of farms

Results: MoSSs* Overview



*MoSSs = monitoring and surveillance systems

Results: HEI for *C. cellulosae*

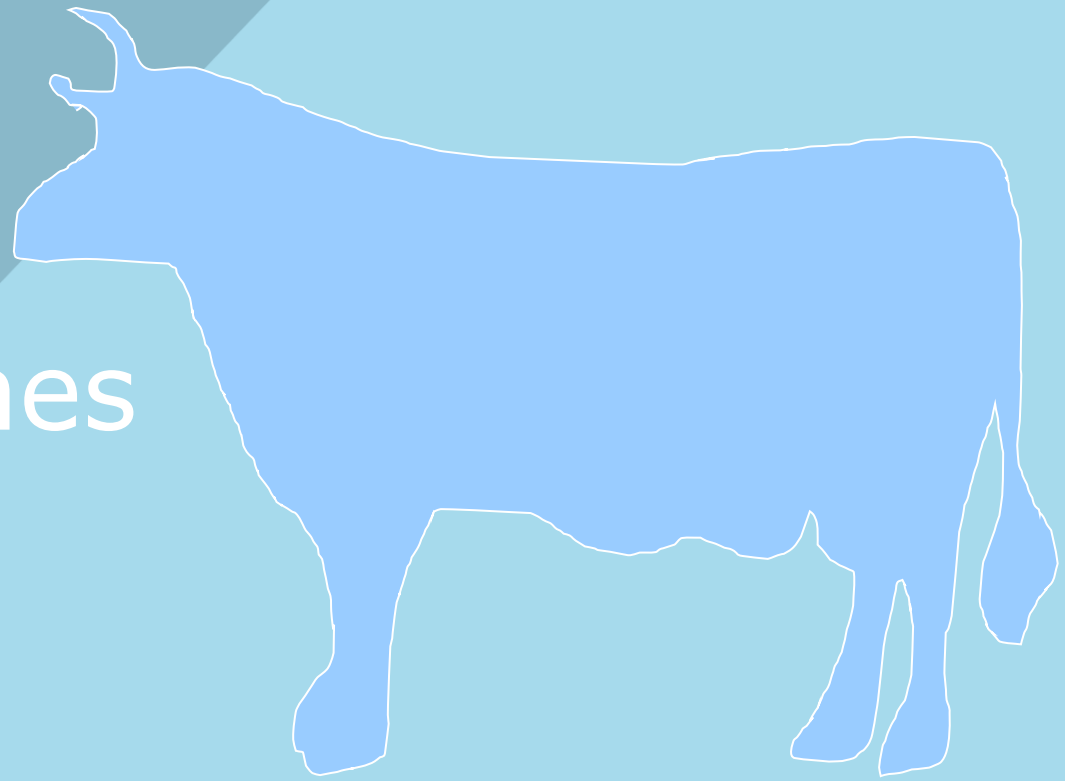


- HEI 1 *Cysticercus* cysts in pigs
  - **0%: Visual meat inspection + PCR for confirmation**
  - 100%: Visual meat inspection

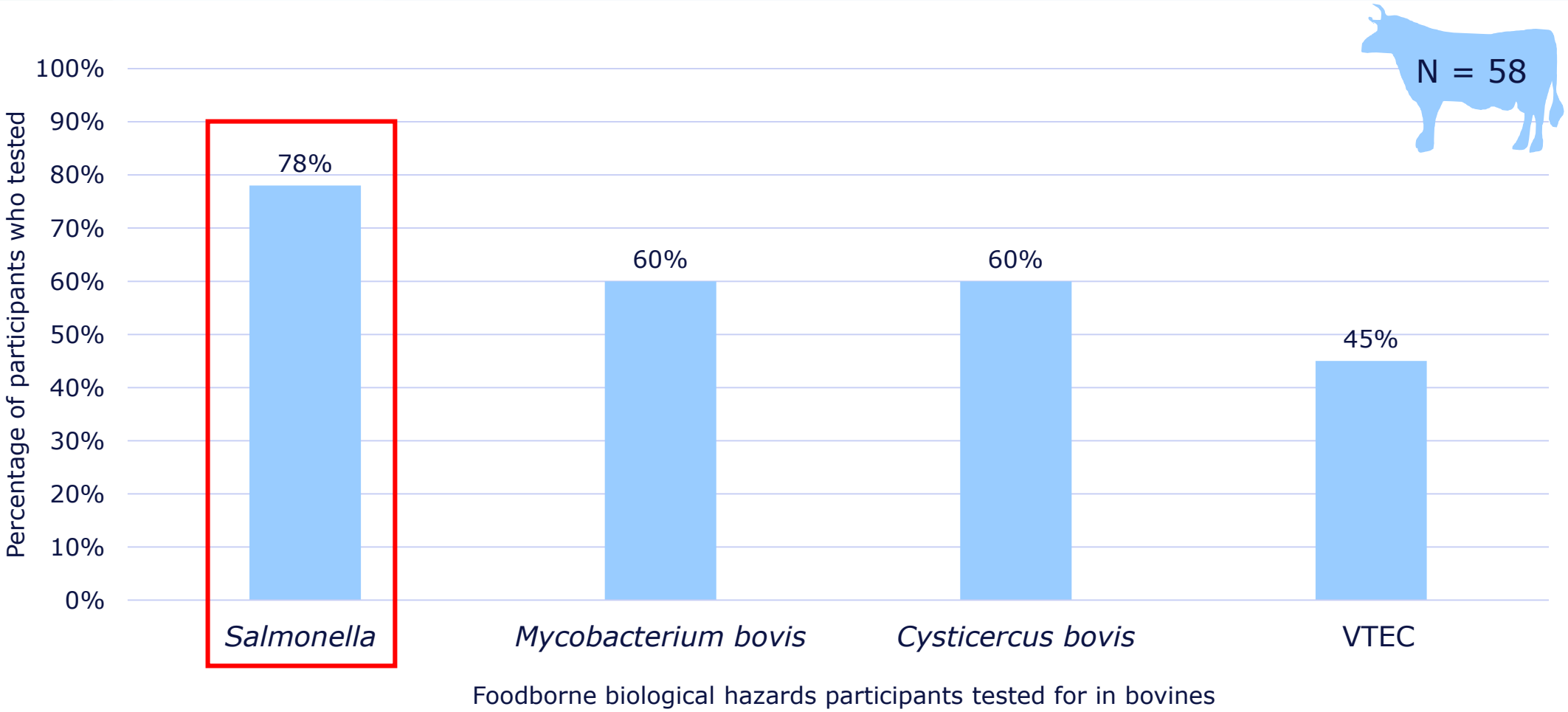
- 31% considered visual meat inspection as active form of testing for *C. cellulosae*
- Predominantly from Eastern Europe (69%) → significant correlation between region and testing

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

Results for Bovines

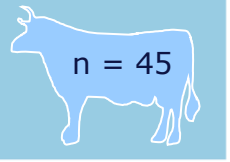


Results: MoSSs* Overview



*MoSSs = monitoring and surveillance systems

Results: HEIs for *Salmonella*

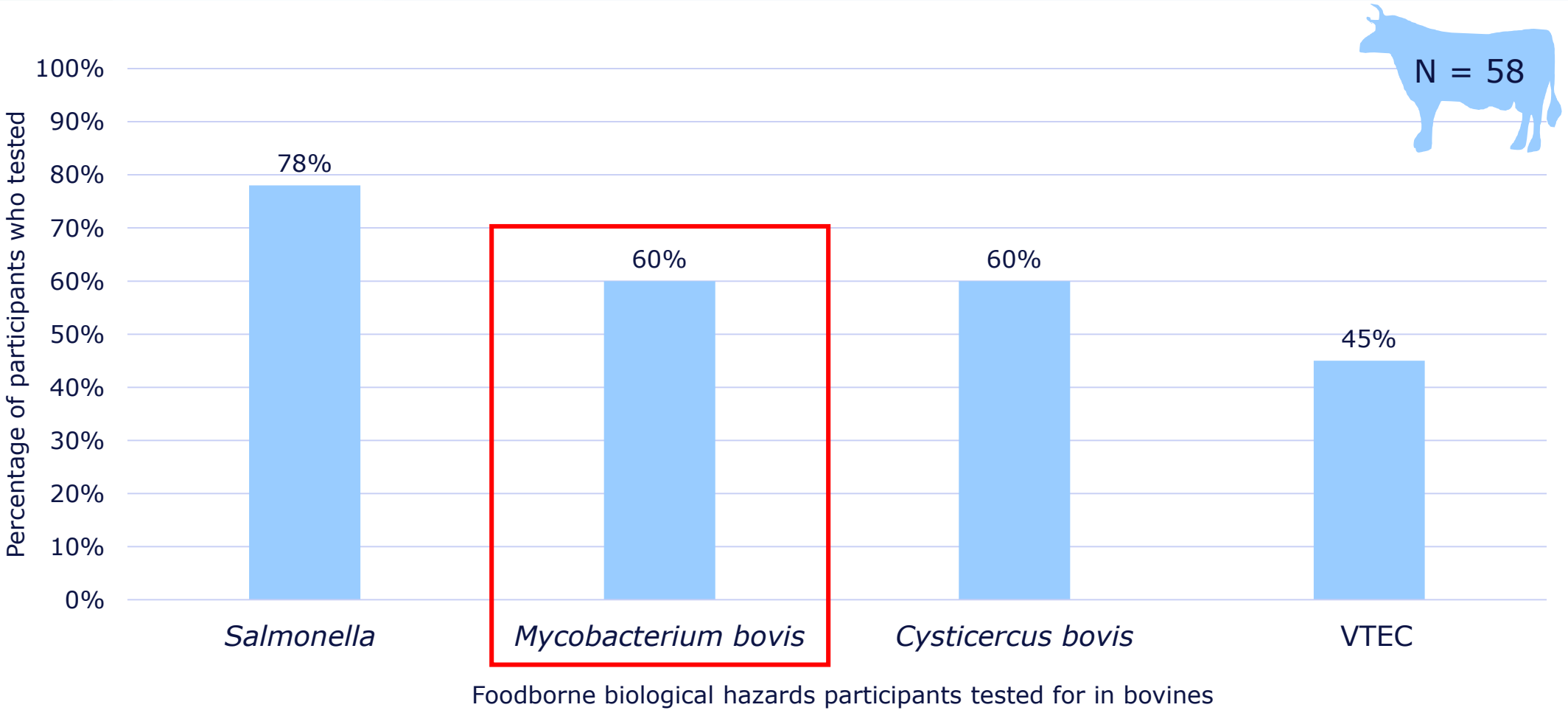


- HEI 8 *Salmonella* on carcasses pre-chilling
  - **71%: Microbiology + carcass swab**
- HEI 8 = PHC for *Salmonella* in cattle (Reg. (EC) No 2073/2005)
  - **26% (EU MSs + testing for *Salmonella*) ≠ PHC**

- HEI 9 *Salmonella* on carcasses post-chilling
  - **22%: Microbiology + carcass swab**

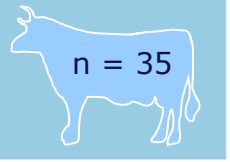
- Most common consequent measures in case of *Salmonella*-positive results
  - 84%: Surveillance of slaughter hygiene
  - 58%: Raising awareness
  - 56%: Feedback to the farm

WG2 Results: MoSSs* Overview



*MoSSs = monitoring and surveillance systems

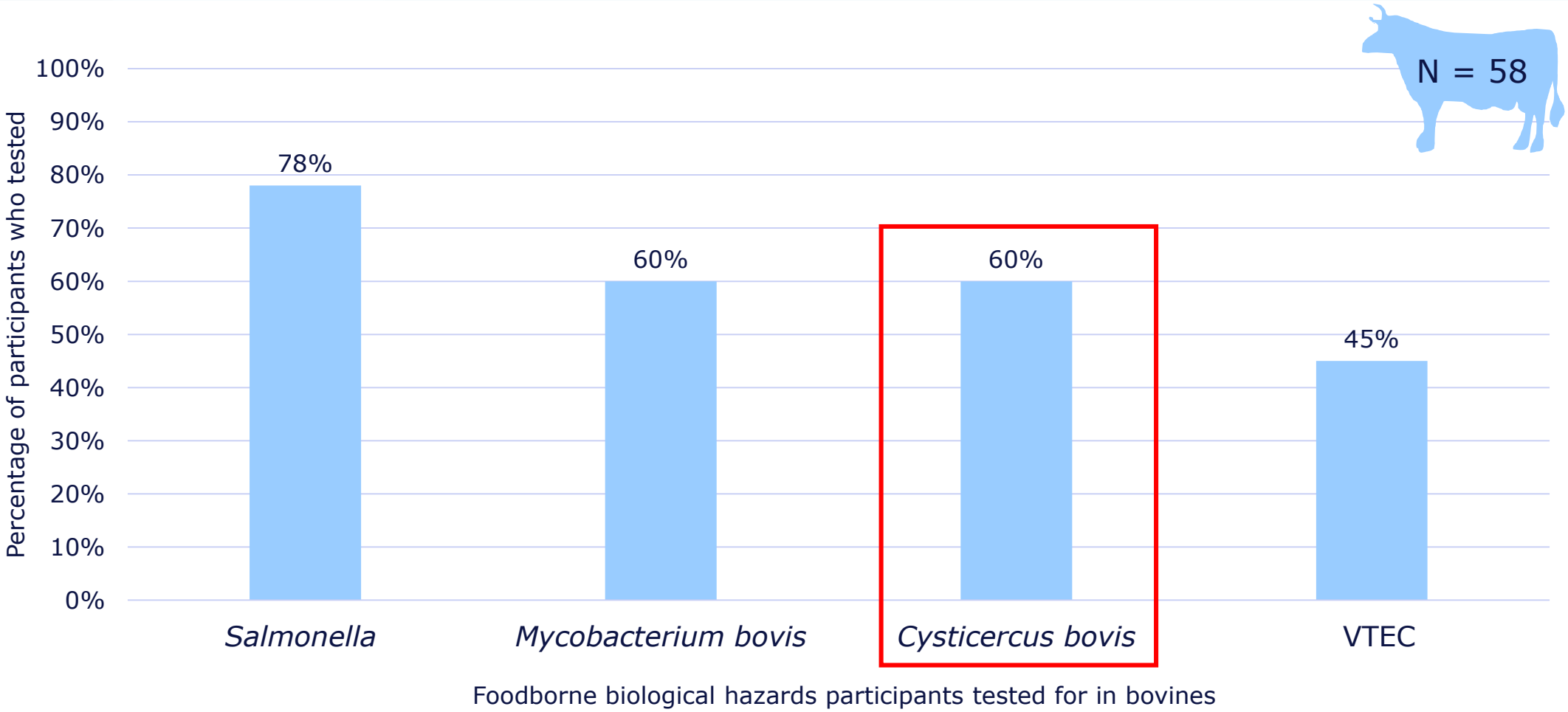
Results: HEIs for *M. bovis*



- HEI 2 Human pathogenic mycobacteria in bovines at slaughter
  - **20%: Visual meat inspection and microbiology + suspected lesions**
  - 46%: Visual meat inspection

- Most common consequent measures in case of *M. bovis*-positive results
  - 80%: Categorisation of farms
  - 63%: Intensification of meat inspection
  - 57%: Raising awareness
  - 54%: Feedback to the farm

Results: MoSSs* Overview



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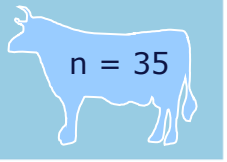
Results: HEIs for *C. bovis*



- HEI 3 *T. saginata* cysticerci in suspected lesions from all types of farms
  - **6%: Visual meat inspection + PCR for confirmation**
  - 89%: Visual meat inspection

- Most common consequent measures in case of *C. bovis*-positive results
  - 69%: Intensification of meat inspection
  - 63%: Feedback to the farm
  - 54%: Raising awareness
  - 54%: Freezing the meat

WG2 Conclusion

- HEIs are useful as part of the risk-based meat safety assurance system (RB-MSAS)
- HEIs enable risk categorisation of farms and abattoirs

- HEIs for broilers are implemented in most EU member states
- Currently implemented MoSSs for broilers are appropriate

- HEIs for pigs that are equivalent to testing regulated by law were mostly implemented
- Additional HEIs for pigs are underutilised and not implemented properly in Europe

- HEIs for bovines are poorly implemented (only HEI 8 *Salmonella* over 50%)

- Main implemented consequence: raising awareness, farm categorisation, feedback to farmers
- When asked about farm interventions, participants mostly stated these were not implemented
- More training is needed in HEIs application

Thank you for the attention.

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

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