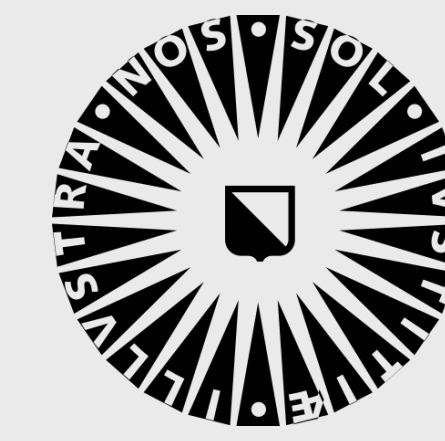
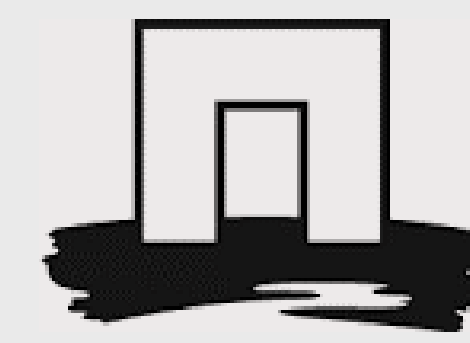


Biosecurity practices to reduce the risk of hepatitis E virus in European pig farms



Utrecht University



WAGENINGEN
UNIVERSITY & RESEARCH



Poster presenter:
Marina Meester (DVM)
Utrecht University NL
Faculty of Veterinary Medicine
m.meester@uu.nl

M. Meester, T. Dubbert, T.J. Tobias., W.H.M. van der Poel, on behalf of the BIOPIGEE consortium

Hepatitis E virus (HEV):

Liver inflammation in humans

Important source of HEV is pigs

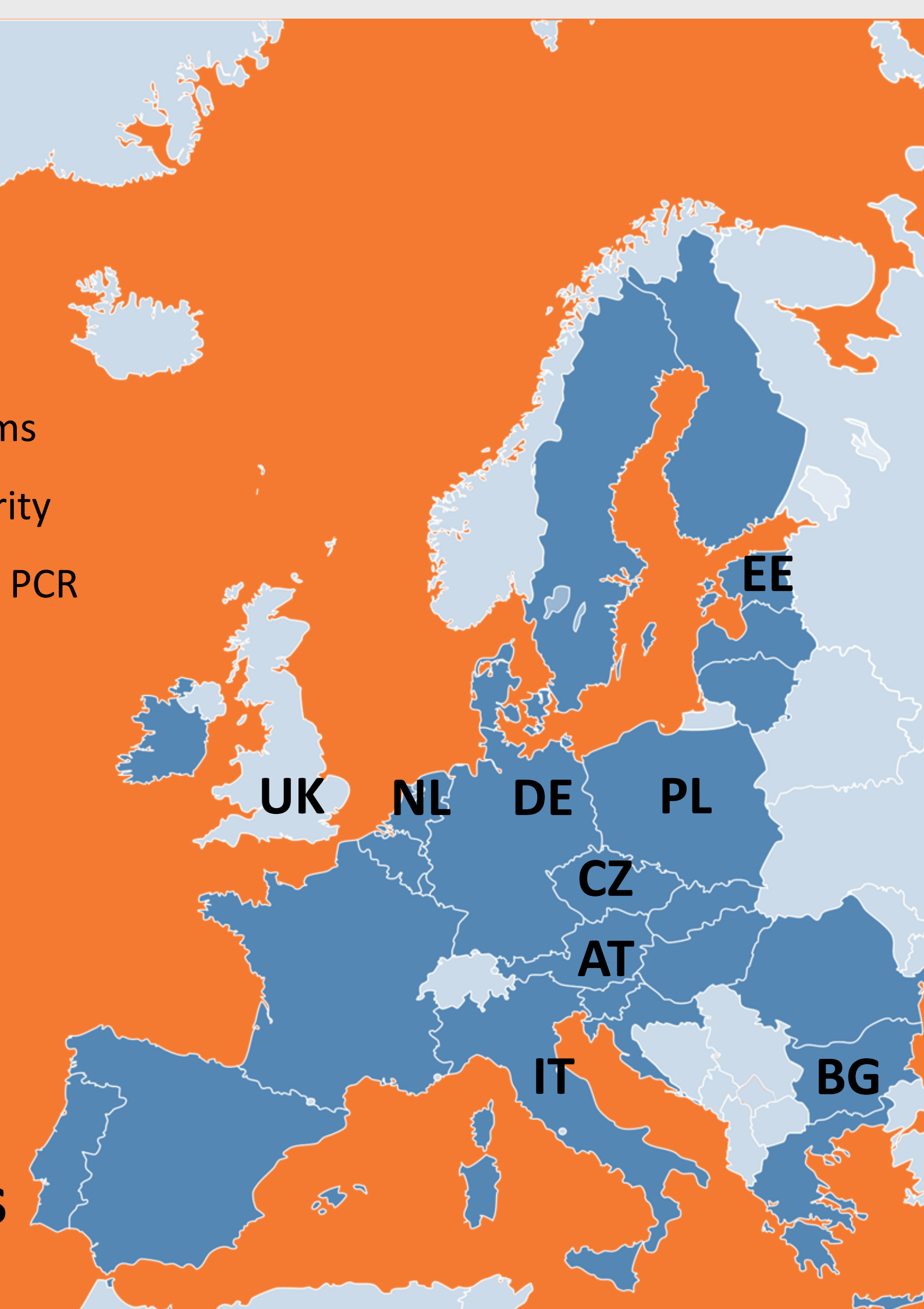
Control of HEV in pig farms is needed



BIOPIGEE project

Methods:

- Case-control study
- Nine European countries
- Commercial-sized breeder, farrow-to-finish and specialist finisher farms
- Questionnaire with 72 questions about internal and external biosecurity
- 20 pooled fecal samples from sows, gilts and/or finishers, tested with PCR to determine risk status (NL historical surveillance data)
- Univariate logistic analysis for first variable selection (p-value <0.25)
- Stepwise backward regression with 58 variables (p-value < 0.05, Likelihood Ratio Test for model selection)
- Final model has only variables with p-value <0.05, adjusted for country and farm type



Aim: Identify effective biosecurity measures associated with HEV risk status of pig farms

Conclusion

- **External biosecurity** measures (prevent pathogens from entering farms) reduce the odds on a high HEV risk status
- HEV may be present in **drinking water** (In previous risk factor study, private well was risk, yet in this study it is protective¹)

Discussion

- Variation in HEV prevalence, sampling strategy and laboratories between countries
- Cross-sectional sampling may not represent actual HEV status on farm perfectly

¹: Walachowski et al. 2014, Epidemiol. Infect

Results



231 farms

- N per country: median 30, range 3-47
- 117 (50.6%) farrow-to-finish
- 40 (17.3%) breeding
- 74 (32.0%) finisher farms

- 15.5% of fecal samples positive across countries
- 102 farms all negative PCR results
- HEV risk status cut-off at 25% positive pools

➔ 161 low risk farms
70 high risk farms

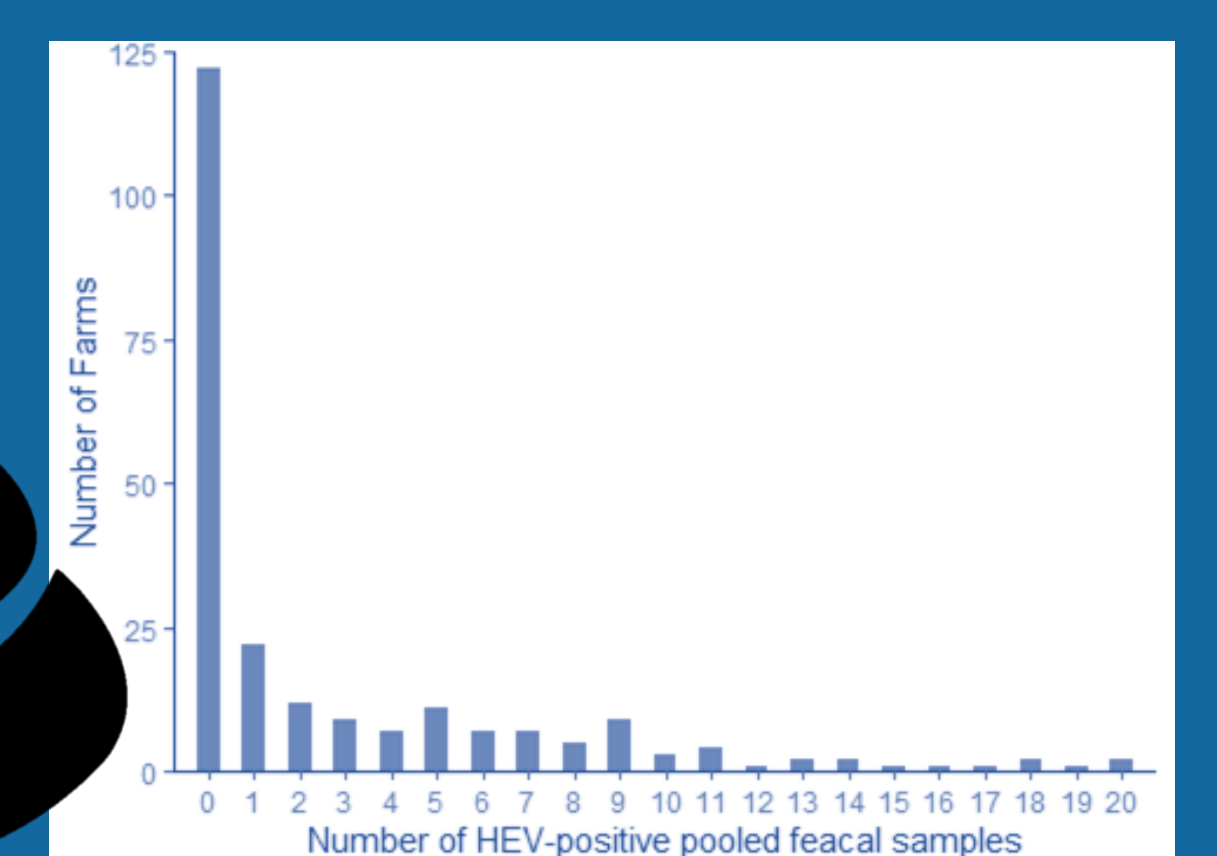
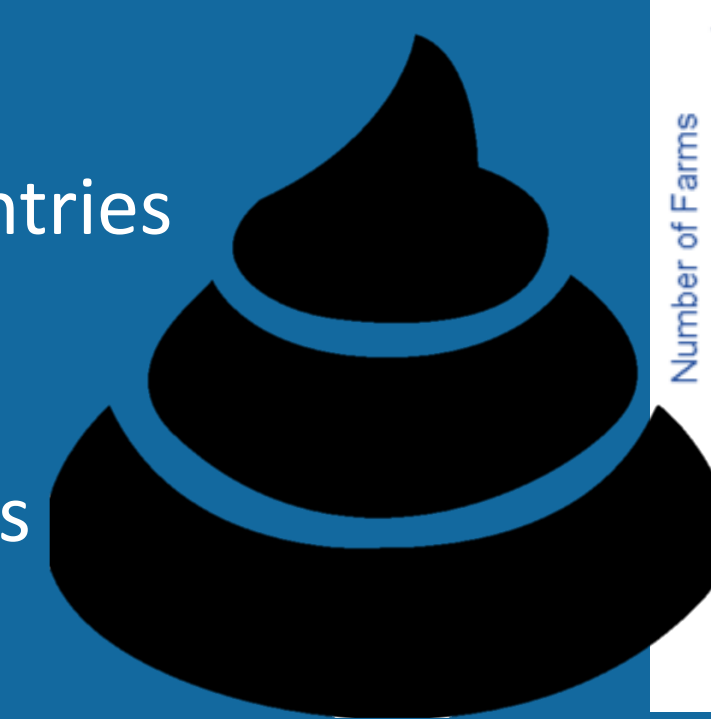


Fig. 1 Histogram of number of positive pooled samples per farm

Table 1 Odds ratios for a high HEV risk status on a farm, corrected for country and farm type

Measure	Odds Ratio	95% Confidence interval
Hygiene lock present	0.40	0.16 – 0.97
Number of people in charge of pigs lower than 6	0.11	0.03 – 0.35
Distributors have farm access	0.06	0.00 – 0.61
Drink water from private well	0.41	0.18 – 0.88
Hygienogram used after cleaning	0.10	0.02 – 0.40
Quarantine area present	0.24	0.08 – 0.61
Carcass storage not protected against pets	0.33	0.13 – 0.84

Hygiene lock, access of distributors and carcass storage sensitive to exclusion of country from the model.