



Actual and future challenges and needs
from the national perspective. Progress
up to date on Salmonella controls
in the EU

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Salmonella

- Second most reported zoonoses in the EU
- EU regulated control programmes and reduction targets set for poultry NOT for other livestock species (e.g., pigs, cattle)
- Some European countries have set up programmes for pigs/pork and cattle.
- In general, current control programmes in Europe can be split into those aiming for:
 - ❖ (i) elimination of infection and
 - ❖ (ii) control and reduction.

Programmes aiming for elimination

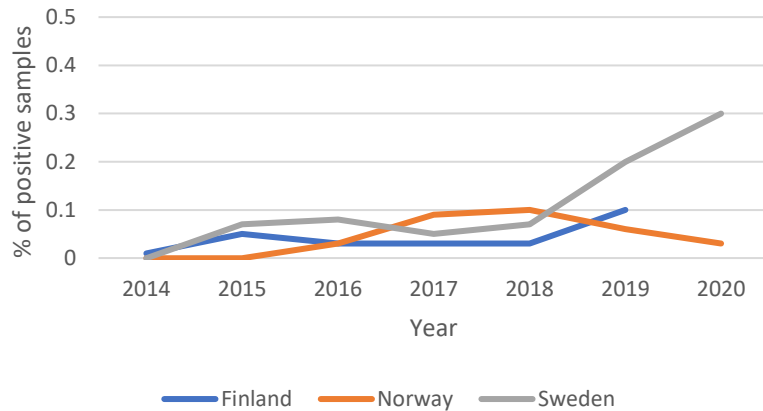
- Sweden, Norway and Finland
- Elements in common:
 - ❖ prevalence at farm level at the start of the programmes was low,
 - ❖ the programmes focus on the entire food chain and use bacteriology as the main detection method,
 - ❖ if Salmonella contamination is detected stringent measures are applied.
- These programmes have achieved their target of a very low level of positive carcass swabs.

Programmes aiming for elimination - Sweden

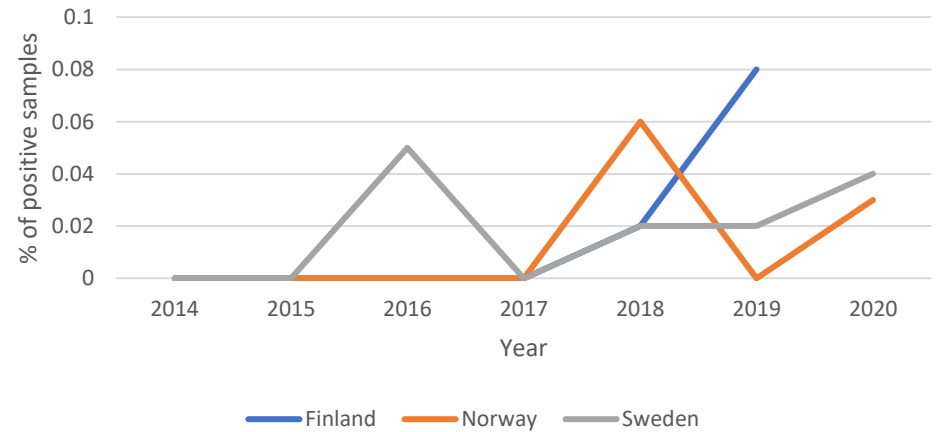
Targets of the programme	Measures for surveillance and control		
	Pre-harvest	At harvest	Feed
<p><0.1% positive carcasses; Farms should be “free” of <i>Salmonella</i> (i.e. <i>Salmonella</i> serotypes undetectable on farm)</p>	<p>Mandatory, statutory control programme Farms may belong to a voluntary herd preventive programme Annual surveillance of breeding herds and sow pools Positive farm:</p> <ul style="list-style-type: none"> • No animal movement • Partial herd depopulation, • Control of animal feed • Manure management, cleaning and disinfection • Testing to ensure <i>Salmonella</i> no longer detectable • 50-70% compensation to cover costs for farmers depending on membership or not of voluntary control programme. 	<p>Sampling of lymph nodes and carcasses Withdrawal of positive product and heat treatment or destruction Cleaning, disinfection and environmental testing of premises.</p>	<p>Surveillance of feed <i>Positive feed:</i> Treatment with organic acid, Cleaning and disinfection of the production line.</p>

Programmes aiming for elimination - Results

Lymph nodes



Carcase Swab



Programmes aiming for control

- Denmark, Germany, Netherlands, Ireland, Belgium*, UK*
- Elements in common: monitoring system is based on serology and farms are assigned to risk categories based on their serological profile, with control measures being targeted to high seroprevalence farms.
- The degree of success of each programme has varied but overall, the programmes have not achieved a consistent reduction of farm-level prevalence.

Programmes aiming for control - Denmark

Voluntary or mandatory; responsible body	Testing method and cut-off	Number of samples tested	Method of herd categorisation	Penalties
Mandatory; industry run	Serological: in-house mix ELISA, positive-negative cut-off = OD 20% Bacteriological testing also used	Gilts: 10 blood samples/month Slaughter pigs: 60-100 meat juice samples/herd/year	Breeding herds: Index calculated based on weighted average of last 3 months serological results (6:3:1) Slaughter pigs: Index calculated based on weighted average of last 3 months (3:1:1) Level 1: 0 to 39.9 Level 2: 40.0 to 64.9 Level 3: 65.0 to 100 Bacteriological testing if move from Level 1 to 2 or 3; Herds Status defined as A: level 1, no <i>Salmonella</i> detected B: levels 2 or 3 and no 'commercial' type <i>Salmonella</i> isolated C: level 2 or 3 or 'commercial' <i>Salmonella</i> detected	Index > 4.9, pen faecal sampling mandatory (max 2/year) Index > 10, penalty per pig sold Payment reduced by 2% (Level 2 herds) and 4% (Level 3 herds); Level 3 slaughtered in designated abattoirs only



Programmes aiming for control - Germany

Voluntary or mandatory; responsible body	Testing method and cut-off	Number of samples tested	Method of herd categorisation	Penalties
Mandatory; industry run	Serological: three different commercial ELISA tests are allowed. Cut-off = OD 40%	60 meat juice or blood samples per herd annually (10-30 samples if <200 pigs slaughtered per herd per year)	Herd categorised based on serological results: 1: <20% positive samples 2: 20% to 40% positive samples 3: >40% positive samples	Category 3 herds must undergo bacteriological and epidemiological investigation. <i>Salmonella</i> controls must be implemented and a completed yearly check list submitted to their QS auditor Financial penalties per kg

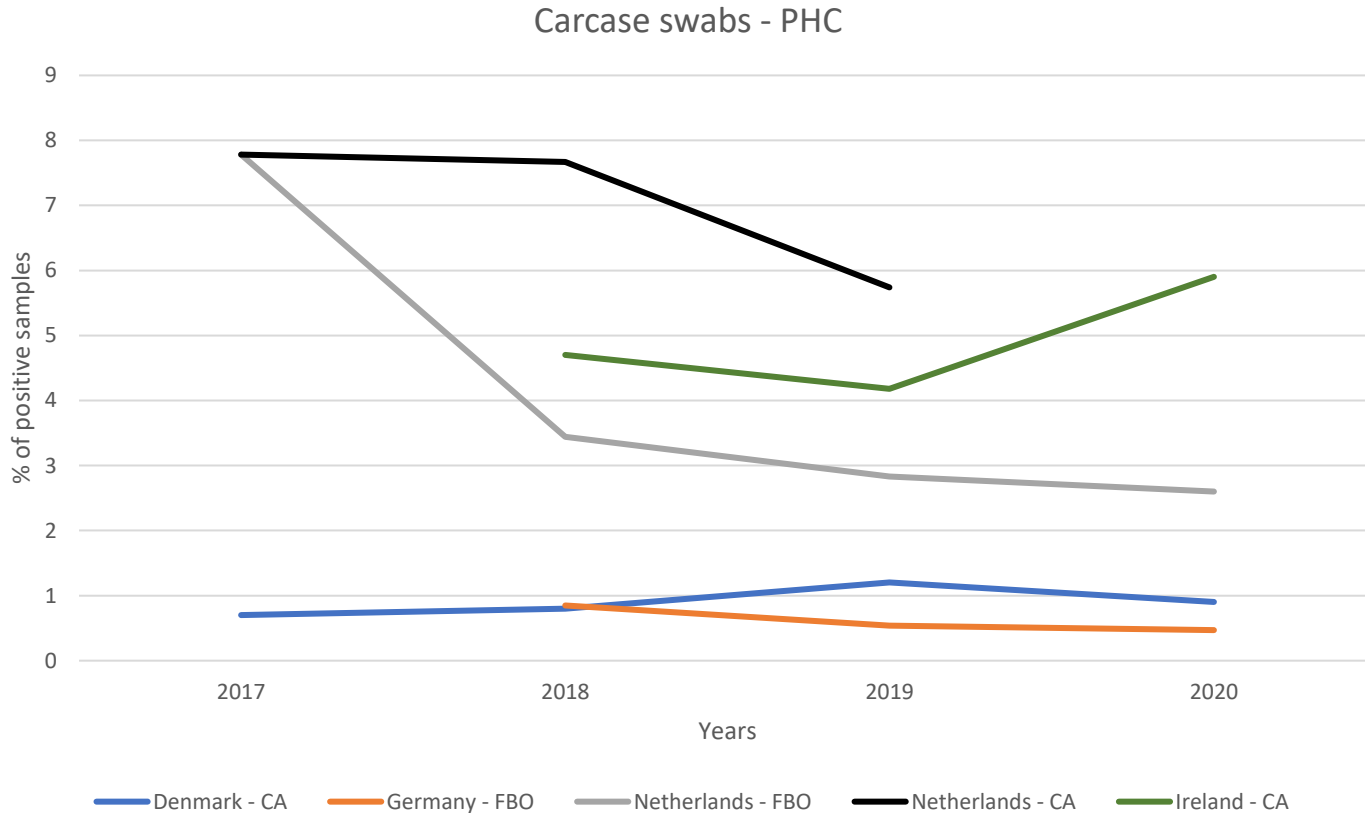
Programmes aiming for control - Netherlands

Voluntary or mandatory; responsible body	Testing method and cut-off	Number of samples tested	Method of herd categorisation	Penalties
Mandatory for herds producing fattening pigs; industry run	Serological: IDEXX <i>Salmonella</i> mix-ELISA Cut-off = OD 40%	12 blood / meat juice samples per herd every 4 months	Scores calculated as: 1: <20% positive samples 2: ≥20% and <40% positive samples 3: ≥40% positive samples Herd category assigned by adding the scores of the last 3 periods of tests: Category I: scores of 3 or 4 Category II: scores of 5 to 7 Category III: scores of 8 or 9	No penalties within The Netherlands Financial penalties per kg imposed by German abattoirs (These penalties for fattening farms in turn put pressure on grower and breeding farms)

Programmes aiming for control - Ireland

Voluntary or mandatory; responsible body	Testing method and cut-off	Number of samples tested	Method of herd categorisation	Penalties
Mandatory; Government run with industry support.	Serological: Past: in house mix-ELISA Cut-off = OD 40% Now commercial ELISA Priocheck	6 samples per herd per month	Score calculated based on weighted average of recent 3 months (3:1:1) Three categories: Herds <50% score Herds ≥50% but ≤70% score Herds >70% score	Potential to lose QA status Animals slaughtered from herd ≥50% score excluded from certain markets. Offal and heads of animals slaughtered from herd >70% score not going for human consumption.

Programmes aiming for control - Results



Discussion

- ❖ Salmonella reduction measures should be implemented as routine standard operating procedures in all pig herds independent of their “risk” to Salmonella
- ❖ Programmes aiming to eliminate infection with stringent measures applied will have more success than programmes with an objective of reducing prevalence only
HOWEVER
- ❖ The cost of such measures are high and might not be feasible to apply in most pig producing countries

Discussion

- ❖ On-farm control measures for Salmonella may have other benefits in terms of controlling other infections in pigs, possibly resulting in improved production => more research needed
- ❖ Bacteriology is important to raise awareness for the type of serotypes present on farm
- ❖ Incentives for farmers to control Salmonella will help

References

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