

The effect of biosecurity level

on the risk of dairy farms becoming test-positive
in the Danish *Salmonella* Dublin surveillance programme

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IN COLLABORATION WITH

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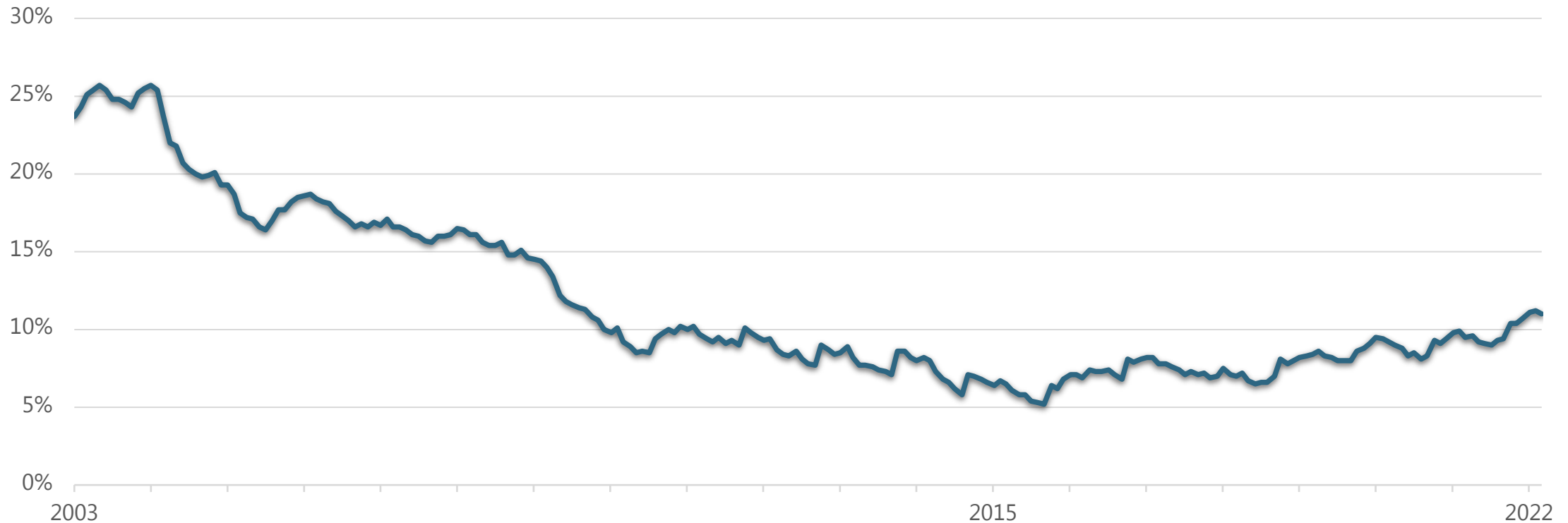
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Danish Veterinary and
Food Administration

Background - 'Likely-infected' dairy farms



Research question: How can epidemiological research contribute to more knowledge about why dairy farms are getting infected with *Salmonella* Dublin under restrictive control programme conditions?

Background & objective

- Register studies
- Questionnaire method
- Case investigations
- Targeting salmonella spp. or other serotypes



Suggested inclusion of not readily available predictors

Nielsen & Dohoo 2012



Suggested use of broad biosecurity approach

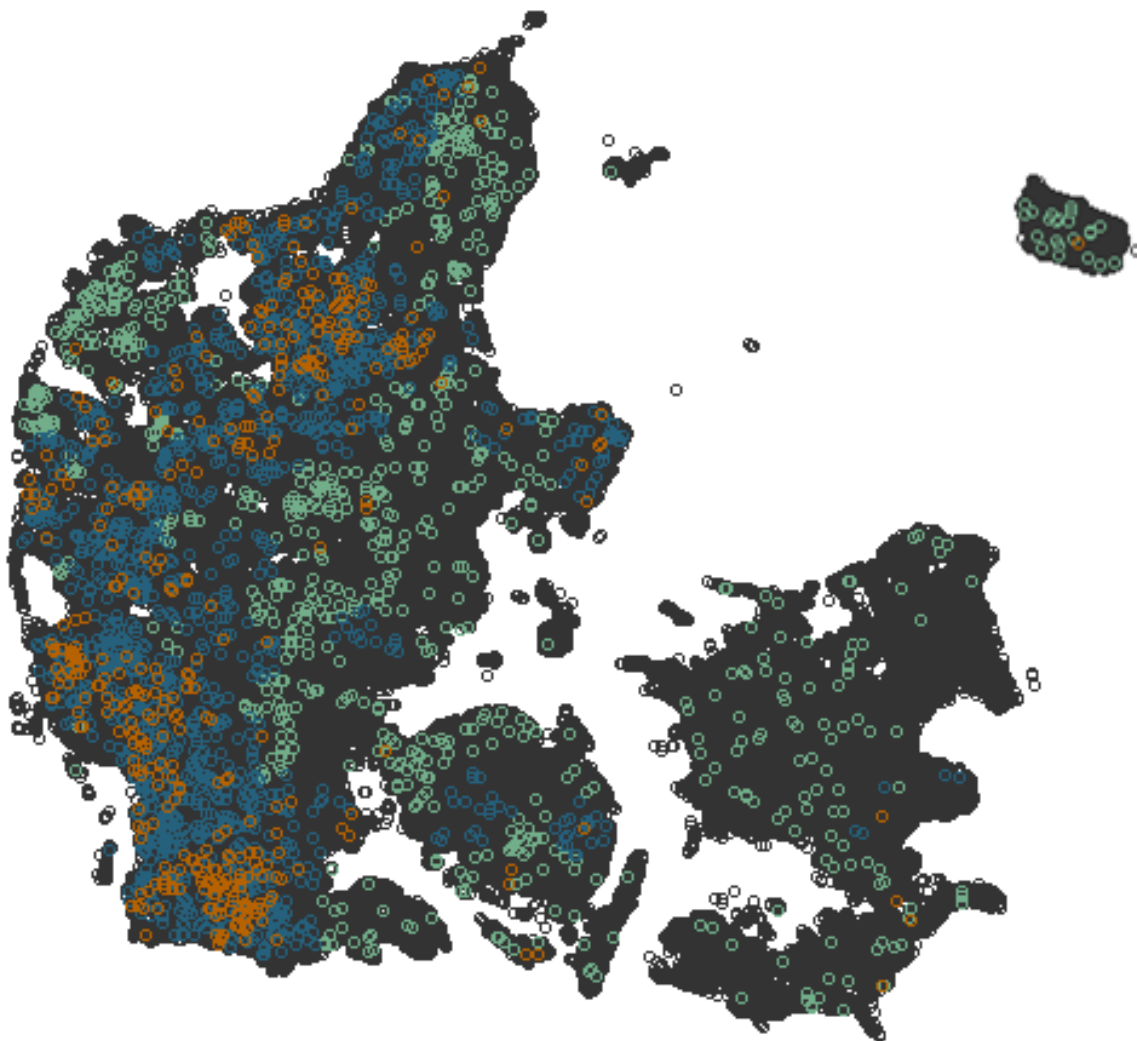
Ågren 2017



Investigate risk of indirect transmission of *Salmonella* Dublin between Danish dairy farms by estimating the effect of overall biosecurity level on the hazard that dairy farms become test-positive in the ongoing *Salmonella* Dublin surveillance programme.

Nested case - control study

Source population, Sep. 2021, 10 km

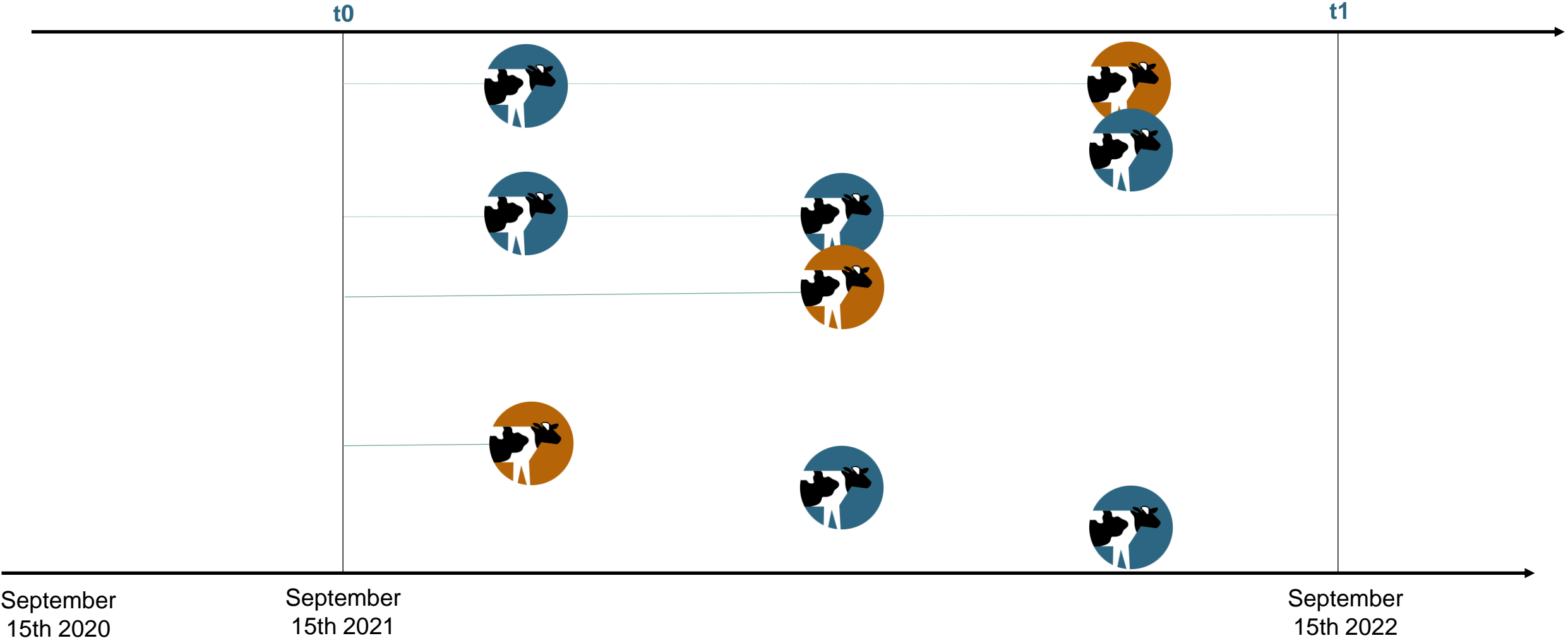


Source population (cohort)

- Recorded bulk tank milk sample last three quarter
- *Salmonella* Dublin test-negative (In level 1 \geq 24 month)
- One or more infected cattle farm within 10 kilometres (In level 2 \geq 6 month)

- Source population: 1395 out of 2538 dairy farms
- Farms in level 2: 395
- Farms without likely persistently infected neighbour: 748

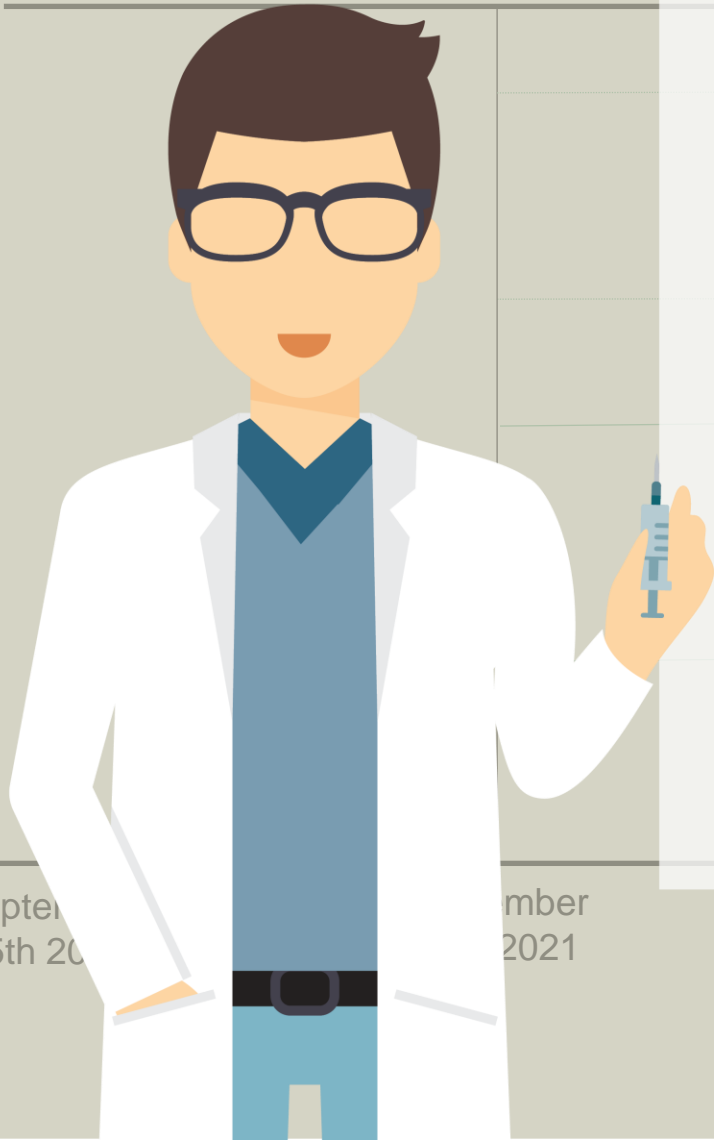
Study design



Study design

t0

t1



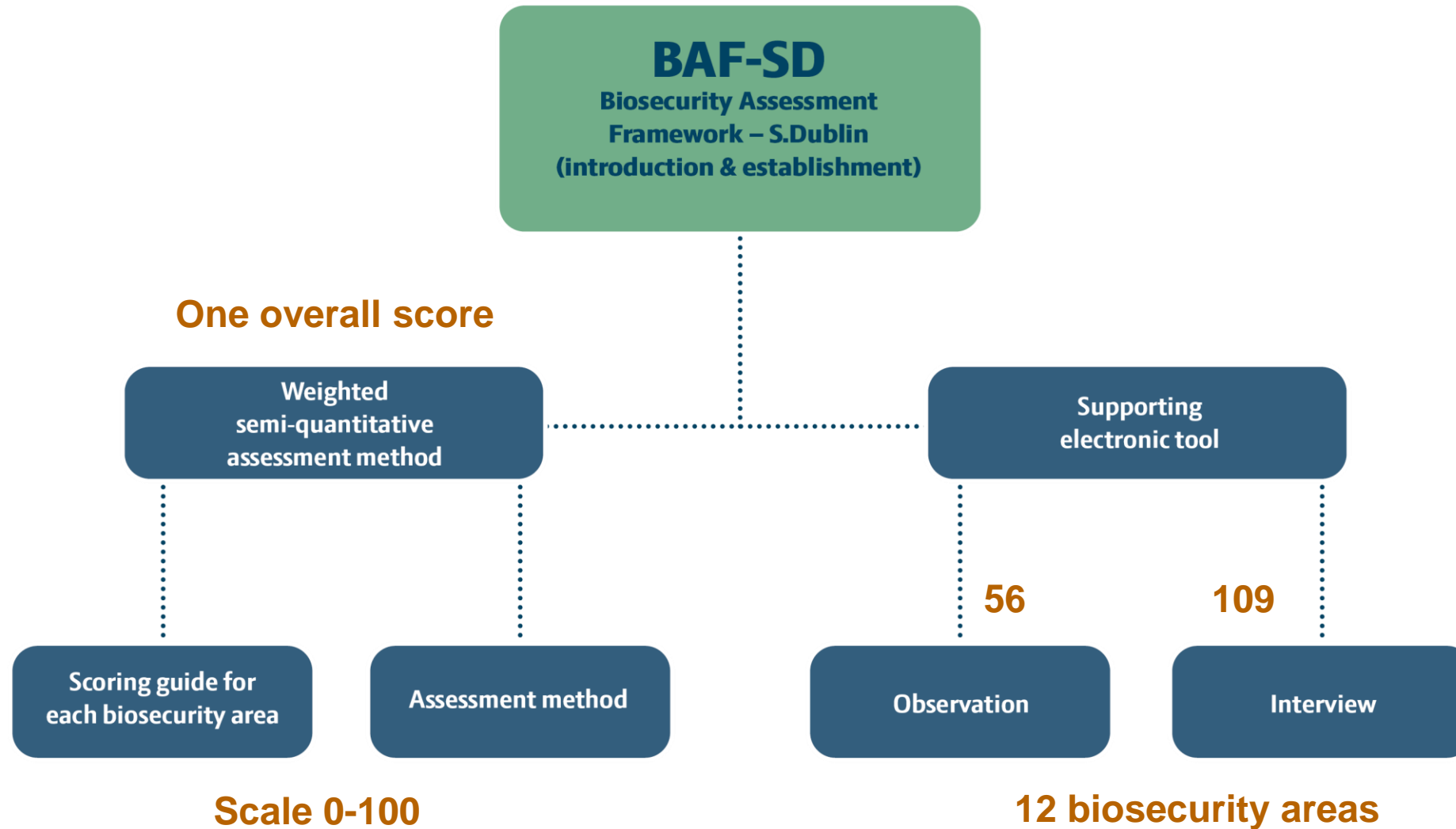
- Matched by herd size and time
- Visit shortly after designation
- Recalling biosecurity practice for the last year
- Extract information from the Danish Cattle Database & the Danish Agricultural Agency

September
15th 2021

September
15th 2021

September
15th 2022

Biosecurity data collection



Data collection



Farmer/herd manager
and biosecurity assessor



Map drawing



1
Demographic information
and herd overview



Biosecurity assessor




Observations



2
**INITIAL
ASSESSMENT**



3
Fill in
observation checklist



Farmer/herd manager
and biosecurity assessor



Walk and talk 



4
Adjust observation check-
list according to owner/
manager information



5
**ADJUSTED
ASSESSMENT**



6
Questionnaire
interview 



7
**FINAL
ASSESSMENT**

