

# **A nationwide survey on MRSA in pigs in Finland**

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# Background

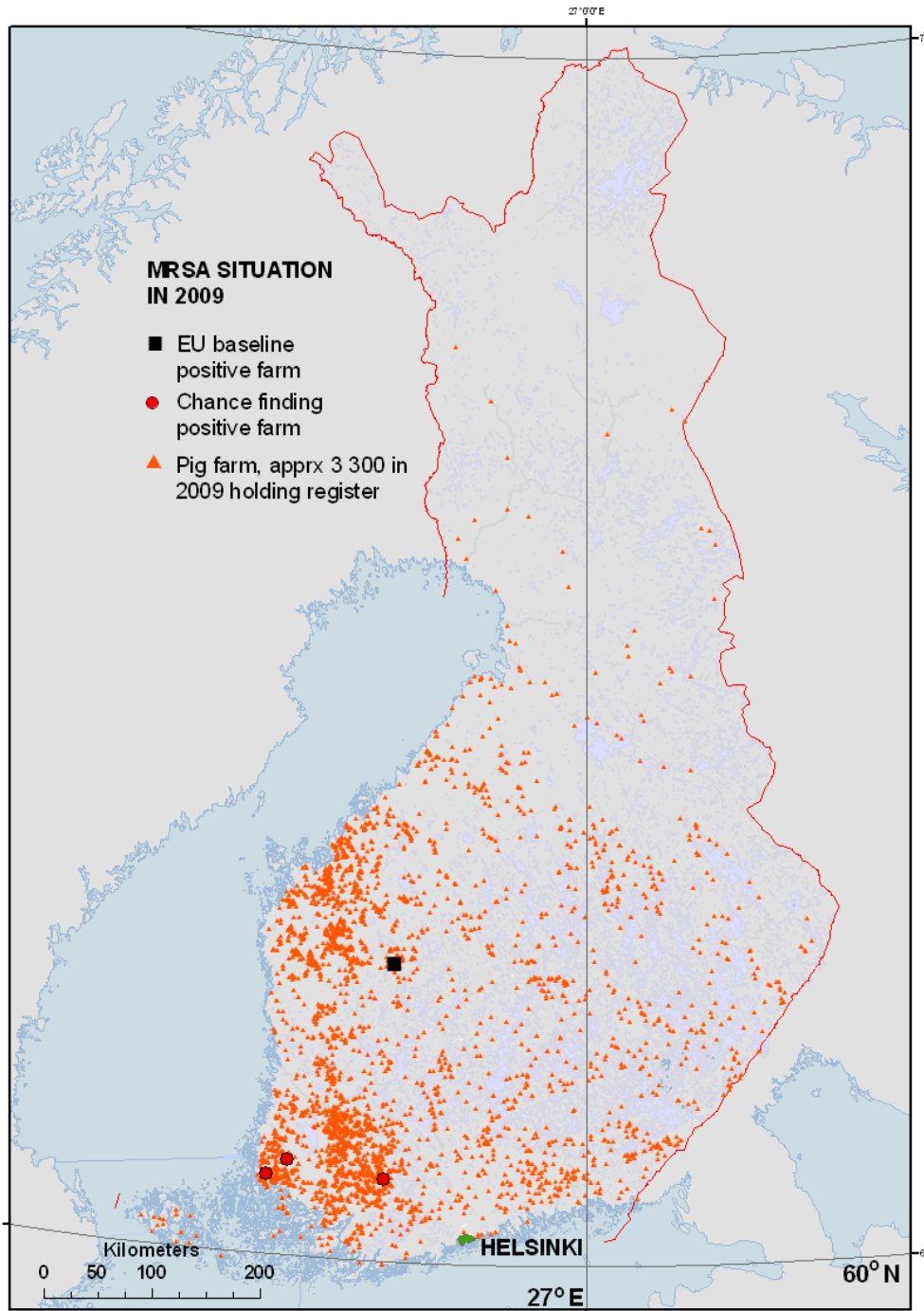
In the EU baseline study in 2008 207 Finnish pig farms were sampled.

One (0,5%) was found positive for MRSA, spa type t034 (CC398)

All the pigs in this farm and further dust samples were examined; none were positive

However, 5 months had elapsed between the original sampling and the more thorough resampling

When setting up the MRSA diagnostics we came by chance across three MRSA positive farrowing farms



# Materials and methods

The aim was to collect samples from two sources:

- nasal swabs from 5 pigs / farm, altogether 60 farms, taken in the slaughterhouse
- nasal swabs from pigs (piglets), sent to Evira for pathological-anatomical diagnosis, for any reason

Study period: September 2009 – August 2010

Isolation of MRSA was performed according to the EU-RL recommended procedures

Help in spa typing and PVL detection was received from the National Institute for Health and Welfare (THL)

# Results, 1

Slaughterhouse nasal swab samples were obtained from pigs of 59 farms

Thirteen farms, 22%, were positive for MRSA. The spa type of one isolate / farm was determined

Six isolates were of spa type t108, one of t5103 and one of t3933; these types belong to CC398

Five isolates were of spa type t127, CC1

Nasal swabs from pigs (piglets) of 36 farms were obtained from the pathologists in Evira

One farm, 3%, was positive for MRSA, and the isolate was of spa type t108

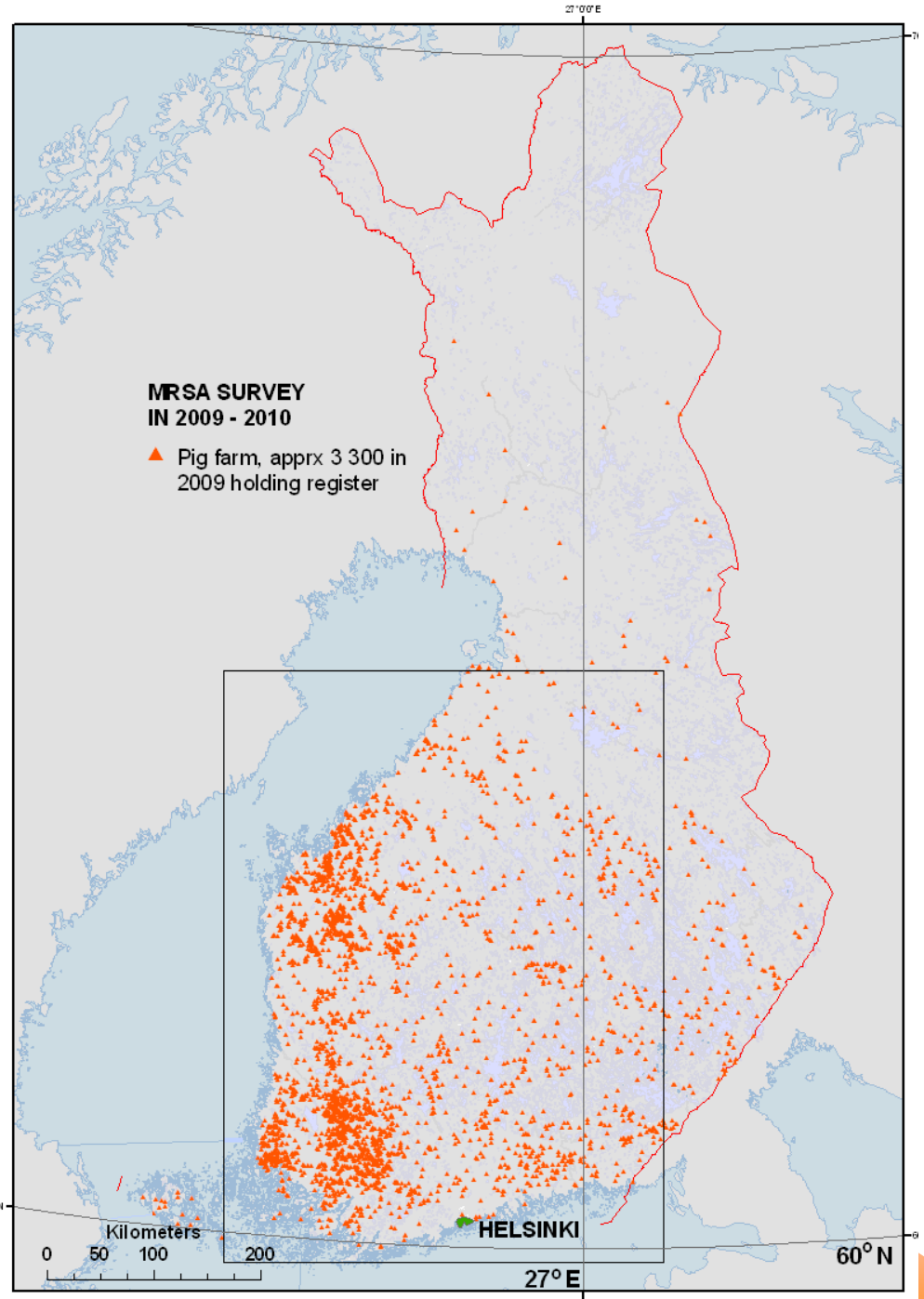
## Results, 2

Taken together, the apparent survey prevalence of MRSA - positive pig farms in Finland was 14,7% in 2010

If the "chance finding" farms and a clinical problem farm are included in the calculation, the apparent prevalence rises to 17,3% in 2009-2010

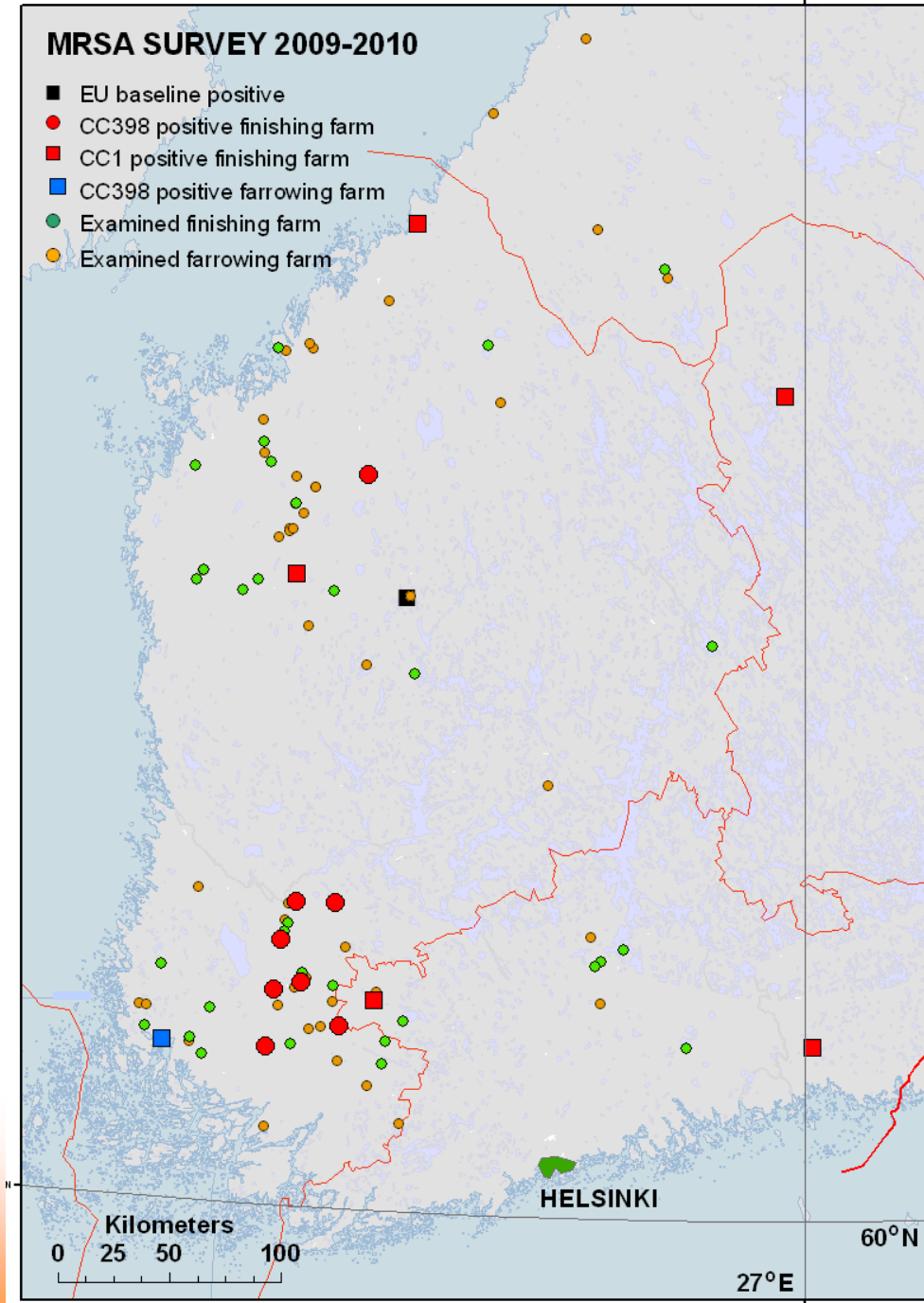
None of the isolates was PVL positive. All isolates were resistant to tetracyclines. The resistance profiles (other antibiotics than  $\beta$ -lactams and tc) suggest two lineages

No statistically significant clusters were detected; the lowest p-value for any group was 0,243 [computed with SaTScan v9.1]



# MRSA SURVEY 2009-2010

- EU baseline positive
- CC398 positive finishing farm
- CC1 positive finishing farm
- CC398 positive farrowing farm
- Examined finishing farm
- Examined farrowing farm





# Caveats and conclusions

The sensitivity of the approach to detect farms with a minority of animals colonized by MRSA is not known

The sampling was not satisfactorily random in either category

Nevertheless, the true prevalence of MRSA positive pig farms may well have been 15 – 20% in 2009 – 2010

What we would at least like to know:

- are there common sources
- what is the typical within-farm prevalence of MRSA in different types of farms and in different age groups
- how long does MRSA persist in different types of farms