

Isolation of Meticillin resistant *Staphylococcus aureus* from large pig breeding farms in Croatia

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Background for this study

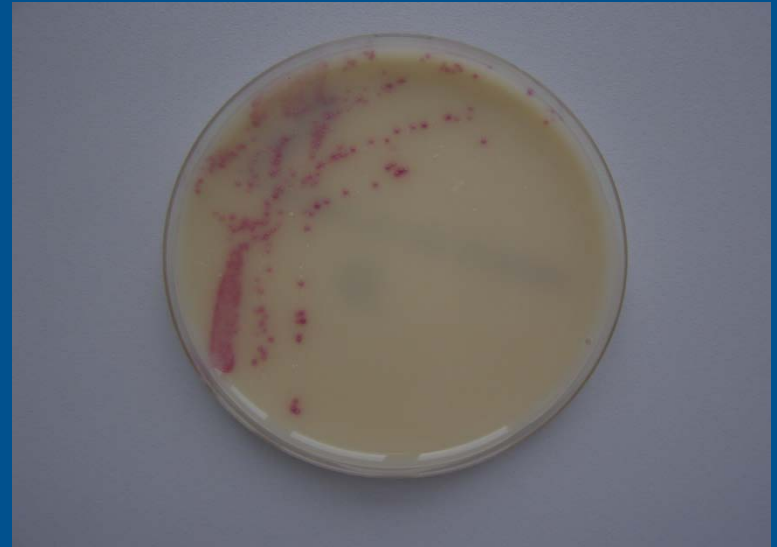
- MRSA is considered an emergent zoonotic pathogen
- Ministry of agriculture of Croatia: baseline study for MRSA isolation from pig breeding farms
- All veterinary ambulance had to deliver samples to Croatian veterinary institute

Materials and methods

- The aim of this study was to collect dust samples from pig breeding farms
- September 2010 – September 2011
- Isolation of MRSA was performed according to EU-RL protocols: Isolation of MRSA from dust samples (2nd Edition, March 2009)

Preliminary study

- April 2010 – collection of dust samples from eight biggest pig breeding farms
- 40 % of the breeding pigs under selection in Croatia on big farms (> 500 breeding animals)
- Isolation was not according to the EU-RL Protocol - pre-enrichment in TSB with cefoxitin and aztreonam was skipped
- Six of eight farms (75,0 %) was MRSA positive





- - MRSA negative farms
- - MRSA positive farms



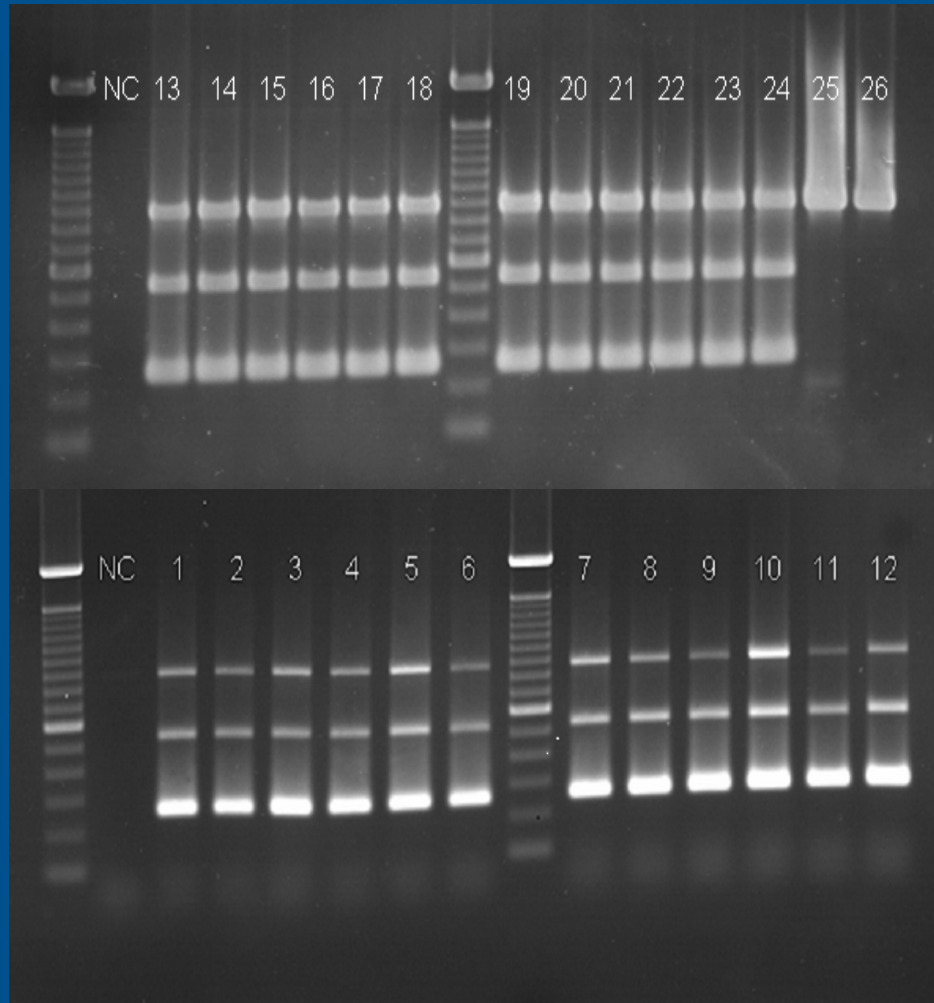
Baseline study – results 1

- 118 farms / 651 dust samples (little farms with 40 – 500 breeding pigs)
- 8 biggest farms / 68 dust samples
- 16 of 118 little pig breeding farms (13,6 %) was MRSA positive
- 6 of 8 large pig breeding farms (75,0 %) was MRSA positive
- 17,5 % of all farms were MRSA positive



-  - MRSA negative farms
-  - MRSA positive farms

Baseline study – results 2



- Multiplex PCR for the detection of *mecA* gene (National Food Intitute Protocol, DTU, 2008)

- 16S
- *mecA*
- nuclease

Baseline study – results 3

- Spa typing – only for the four MRSA positive big farms
 1. 11 samples / 9 MRSA positive (81,8%)
 - t 011 *spa*-type
 2. 7 samples / 1 MRSA positive (14,3%)
 - 1 sample – t 1451 *spa*-type
 3. 10 samples / 6 MRSA positive (60,0%)
 - 5 samples - t 034 *spa*-type
 - 1 sample – t 1451 *spa*-type
 4. 11 samples / 6 MRSA positive (54,5%)
 - t 011 *spa*-type
 5. 5 samples / 1 MRSA positive (20,0 %)
 - t 011 *spa*-type
 6. 6 samples / 1 MRSA positive (16,7 %)
 - t 011 *spa*-type

Conclusions

- Prevalence of positive MRSA pig breeding farms in Croatia was 17,5%
- Most MRSA isolates from the biggest pig farms belong to t011 *spa*-type
- Other *spa*-types – t1451 and t034
- Other MRSA positive isolates are in procedure of *spa*-typing

Thank you for your attention