Comparison of air samples, nasal swabs, ear-skin swabs and environmental dust samples for detection of Methicillin Resistant Staphylococcus aureus (MRSA) in pig herds - DTU Orbit (18/01/2019)

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To identify a cost-effective and practical method for detection of methicillin-resistant Staphylococcus aureus (MRSA) in pig herds, the relative sensitivity of four sample types: nasal swabs, ear-skin (skin behind the ears) swabs, environmental dust swabs and air was compared. Moreover, dependency of sensitivity on within-herd prevalence was estimated. spa-typing was applied in order to study strain diversity. The sensitivity of one air sample was equal to the sensitivity of ten pools of five nasal swabs and relatively independent of within-herd prevalence [predicted to be nearly perfect (99%) for within-herd prevalence 25%]. The results indicate that taking swabs of skin behind the ears (ten pools of five) was even more sensitive than taking nasal swabs (ten pools of five) at the herd level and detected significantly more positive samples. spa types t011, t034 and t4208 were observed. In conclusion, MRSA detection by air sampling is easy to perform, reduces costs and analytical time compared to existing methods, and is recommended for initial testing of herds. Ear-skin swab sampling may be more sensitive for MRSA detection than air sampling or nasal swab sampling.

General information
State: Published
Organisations: National Food Institute, Division of Epidemiology and Microbial Genomics, Division of Food Microbiology
Contributors: Agersø, Y., Vigre, H., Cavaco, L., Josefsen, M. H.
Pages: 1727-1736
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: Epidemiology and Infection
Volume: 142
Issue number: 8
ISSN (Print): 0950-2688
Ratings:
BFI (2019): BFI-level 1
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.88 SJR 1.128 SNIP 0.807
Web of Science (2017): Impact factor 2.044
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.98 SJR 1.18 SNIP 0.866
Web of Science (2016): Impact factor 2.075
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.29 SJR 1.349 SNIP 1.052
Web of Science (2015): Impact factor 2.515
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.19 SJR 1.305 SNIP 1.016
Web of Science (2014): Impact factor 2.535
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.57 SJR 1.337 SNIP 1.113
Web of Science (2013): Impact factor 2.491
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.69 SJR 1.437 SNIP 1.17
Web of Science (2012): Impact factor 2.867