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 (02/01/2019)

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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.

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