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**ePoster Viewing**

**Resistance surveillance & epidemiology: MRSA, VRE & other Gram-positives**

**Large epidemiological study of *Staphylococcus aureus* colonization in French horses: evidence of very low prevalence of MRSA and antibiotic resistance, heterogeneity of SA carriage in the various farms/centres, and absence of cross-contamination between horse and human**

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### **Background:**

The sporadic isolation of MRSA (mecA+,mecC+) strains involved in equine infections in France led us to investigate the prevalence of nasal colonization with *S. aureus* (SA) in horses, to explore the occupational risk in staff in contact with horses. In addition, we aimed to perform molecular characterization of SA isolates.

### **Material/methods:**

Nasal swabs (Copan) were collected between July and September 2015 in 41 equestrian farms/centers in 4 French geographical areas France. Each center, 30 randomly-selected horses and volunteer staff were included. After liquid enrichment (BHI 2.5 % NaCl, 36    C, 24 hours), a chromID SAID agar (bioM  rieux) was seeded. The typical *S. aureus* colonies (blue) were definitively identified by Maldi-TOF (Vitek MS, bioM  rieux). Meticillin resistance was investigated using multiplex PCR (*nuc* /*mecA*/*mecC*). Then, the *spa*-type of each strain was determined as well as the antimicrobial susceptibility tests (AST) including 14 antibiotics.

### **Results:**

Overall, 1356 samples (equines, n = 1297; humans, n = 59) were included. SA colonization was found in 104 horses (8%) and 15 staff members (25%). While 19/41 centers were exempt from SA, the prevalence was high in two centers (n = 20/33 (61%) and n = 21/36 (58%)). No MRSA was detected. The 104 equine strains belonged to 19 different *spa*-types including three predominant *spa*-types (t1166, n=25 strains/6 centers; t127, n= 15/6; t1294, n= 9/1). Of note, the *spa*-types from human SA isolates (n= 15) were never congruent with equine ones and were consistent with *spa*-types classically described in humans. AST revealed a low prevalence of antibiotic resistances in equine isolates including resistance to penicillin G (n = 14, 13%) and erythromycin (n = 13, 12%).

### **Conclusions:**

The present study is the largest ever carried out in France about the prevalence of SA in horses. The absence of MRSA suggests that the prevalence of carriage of such strains in horses is probably low in France, although equine infections have been reported sporadically. Moreover, data obtained showed a wide heterogeneity of prevalence across French geographical areas and from one horse center/farm to another. Interestingly, no cross contamination between horses and humans were noticed which suggest a low risk transmission to human in the context of professional practices or leisure. However, a epidemiological survey is required to regularly follow the evolution of i) the clones circulating in French horse farms/centers, ii) the rate of transmission from Horse to Human.