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An intervention study to investigate the impact of raised hygiene in the perinatal period on mastitis and health in housed ewes

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ABSTRACT

Objective: Mastitis is a bacterial infection, costing the UK sheep industry an estimated £120M/annum. Mastitis causes decreased milk yield and can lead to death or premature culling of ewes. An intervention study was conducted on one flock in England to test the impact of raising hygiene in the perinatal period on occurrence of acute mastitis (AM).

Materials and methods: Ewes were allocated to control (n = 422) or intervention (n = 315) groups at lambing. Researchers managed the intervention ewes; antibacterial hand gel was used before handling ewes and overalls and boots disinfected daily. Intervention ewes were put in pens post-lambing which had antibacterial bedding powder beneath straw bedding and were cleaned daily. Data on the presence of intramammary mass (IMM) an indicator of chronic mastitis, were collected on five occasions: during pregnancy, at lambing, early and late lactation, and pre-tupping. Occurrence of AM, lambing assistance and ewe death were recorded.

Results: The period prevalence of ewes with an IMM was 37.5% and incidence rate of AM was 5.5%. There was no difference in percentage with IMM or AM between intervention and control groups. Ewe death was associated with lambing assistance (OR = 7.22), 41.7% of control ewes and 100% of intervention ewes that died were given lambing assistance. IMMs were associated with previously detected AM (OR = 17.10) and IMM (OR = 3.25). AM was more likely to occur in ewes where an IMM was detected at a previous examination (OR = 15.49).

Conclusion: Whilst increased hygiene procedures were not significantly associated with reduced AM or IMM, ewes were mixed after housing which may have confounded the intervention. The link between lambing assistance and death is an important finding for welfare and cost to farmers and needs further investigation.

Key words: Ovine mastitis, epidemiology, animal welfare, clinical trial, suckler ewes

Seroprevalence and risk factors associated to horse and wild bird infection by West Nile virus in Madagascar

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ABSTRACT

Objective: West Nile virus (WNV) is considered as the most prevalent arbovirus in Madagascar, yet few studies have focused on WNV circulation in wild birds and horses. The aims of this study are (i) to provide recent estimates of WNV seroprevalence and incidence in horses, (ii) to assess which wild bird species are exposed to WNV and (iii) to identify risk factors associated with exposure in horses and wild birds.

Materials and methods: Horses from 4 regions of Madagascar were sampled before and after the 2015-2016 rainy season to estimate prevalence and incidence. Stable and horse characteristics were collected through a questionnaire. A wide range of wild birds species from the same regions were sampled in 2016-2017. Antibodies against WNV in horses and birds were tested using a competition ELISA test; results of a subset of samples were further confirmed using either a specific microsphere immunoassay for horses or a viral neutralization assay for birds. Logistic models were developed to identify risk factors.

Results: Overall seroprevalence in horses was 33.5% (n=254) and incidence during the rainy season was 8.8% (n=147). Age, presence of ponds, use of insecticides and combined presence of rice fields and ruminants in the vicinity of stables were identified as risk factors. Overall, 352 birds (belonging to 41 species) were tested and 12.5% (belonging to 19 species) were seropositive. Birds caught outside wetlands, in Alaotra Mangoro region, belonging to the Passeriformes order, and species with an area of distribution in the Indian Ocean islands were significantly more exposed to WNV.

Conclusion: This study confirms that WNV is endemic with high levels of circulation in horses, although no clinical cases were recorded. For the first time in Madagascar, 19 species of wild birds (among which 12 of the 21 Passeriformes species) were shown to be exposed to WNV.

Key words: West Nile Virus, Madagascar, horses, wild birds, risk factors, seroprevalence