

SPATIAL VARIABILITY IN CATCHES OF *CULICOIDES* ACROSS FARMS IN THE BALA AREA OF NORTH WALES

H. Guis^{1,2*} K. Labuschagne³ D. Sugden¹ K.M. McIntyre¹
M.J. Vilar¹ M. Baylis¹

The aim of this study was to investigate the spatial variability of *Culicoides* catches at a local scale using environmental data and farm characteristics. A thrice-replicated random sampling design was set up on a 1x1 km grid in a 6x6 km study site in Bala, North Wales in July 2008 over a period of 12 days using Onderstepoort black light traps to catch *Culicoides*. Overall, 132 catches were made on 35 farms, 32 of which were sampled three times and three of which were sampled daily. A total of 357,229 *Culicoides* encompassing 19 species (mean catch = 2706 per trap and per night; maximum catch = 65,763) were caught. The species of the *Obsoletus* complex accounted for 62% of the catches. Environmental factors (such as land cover, land use,

soil type, altitude and weather) and farm characteristics (animals, insecticide use, dung management, proximity to water and to potential breeding sites, and openness of the landscape) will be used to model the abundance of *Culicoides* species. The influence of *Culicoides* abundance in neighbouring farms will also be assessed and accounted for. This will help better understand spatial distribution and variability of *Culicoides* densities at a local scale and provide elements for discussion on how to approach mapping and modelling of vector abundance at coarser scales.

KEYWORDS: *CULICOIDES* – CAPTURE – RURAL ENVIRONMENT – WALES.

1. University of Liverpool, LUCINDA group, United Kingdom

2. CIRAD, UMR Animal and Integrated Risk Management, Campus international de Baillarguet, TA C 22/E, F-34398 Montpellier, France.

3. ARC- Onderstepoort Veterinary Institute, Onderstepoort, South Africa.

* Corresponding author

Tel.: +33 4 67 59 39 06; Fax: +33 4 67 59 37 54

E-mail: helene.guis@cirad.fr