

# STATISTICAL MODELLING OF CULICOIDES SPP. (DIPTERA: CERATOPOGONIDAE) USING ASCAT SOIL MOISTURE DATA

## ABSTRACT

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Culicoides spp. (Diptera: Ceratopogonidae) are the main vectors for the spread of viruses responsible for Bluetongue Disease (BTD), African Horse Sickness (AHS), Rift Valley Fever (RVF) and Epizootic Haemorrhagic Disease (EHD). The viruses survive between blood-sucking midges and host populations (e.g. ruminants for BTD). From around 1400 species known worldwide, only a small proportion is able to transmit relevant pathogens. Therefore, a monitoring was established in 2008 at the University of Veterinary Medical Vienna to determine species diversity, relative

abundance and seasonal cycles of Culicoides spp. Additionally, relationships between environmental parameters and catches of midges were quantified by so-called cross-correlation maps (CCMs). Based on this investigation it reveals that the seasonal cycle of Culicoides spp. abundance is well described by temperature and precipitation observations, as well as soil moisture from ASCAT satellite data. Using the latter significantly improves the performance of the Poisson regression model. Results were presented for the period 2009 to 2010.