TOWARDS THE FAVORABLE LANDSCAPES FOR *CULICOIDES IMICOLA* THE MAIN BLUETONGUE VECTOR IN CORSICA

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Due to human activities and changes in the environment, some ecosystems are acquiring the capacity to shelter major pathogens. Because environmental parameters such as climate, vegetation or land-use impact insect's bionomics, some vector and vector-borne disease distributions have significantly changed during the past years. Our aim was to study the conditions required for the settlement of a new vector in a new ecosystem, taking as example *Culicoides imicola (Diptera: Ceratopogonidae)*, the main vector of bluetongue, in Corsica.

The favourable environment for *C. imicola* was described using high resolution remote sensing and Geographical Information Systems (GIS). Factors likely to be related to vector distribution were extracted from a SPOT image (10 meters pixel) and from a digital elevation model (DEM). The normalized difference vegetation index (NDVI) was calculated and a supervised classification was carried out. Slope, altitude, and orientation of study sites were extracted from the DEM.

Data on disease and vector were used to model the distribution of favourable sites for *C. imicola* using logistic regression. Data on outbreaks (farm descriptions and health status of about 100 sheep cases) highlighted the impact of latitude and some units of vegetation. Entomological data (collected during one-night catches in a hundred sites in June 2005) were compared to the neighbourhood of farms. Data, methods, results, applications and limits of the two approaches are discussed.

Key-words: Satellite**,** Vector ecology, Epidemiology, *C. imicola*, bluetongue*,* Corsica

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