MEDREONET: "Surveillance network of Reoviruses, Bluetongue and African Horse Sickness, in the Mediterranean Basin and Europe“

WP 2: Regional surveillance of vectors.

Deliverable 2.2 Meeting. Strasbourg 17- 20 March 2009.

Dr. M.A. Miranda. Lab. Zoology. Emerging Diseases Group. University of the Balearic Islands- IUNICS. Spain

WP2 DELIVERABLES:

D2.1 - Recommendation of the optimal trap design for sampling *Culicoides*

D2.2 - Guide to the identification of *Culicoides* vectors and potential vectors present in the Mediterranean basin, including molecular methods.

D2.3 - Assessment of the relationship between *Culicoides* vector density and BT and AHS 'risk'

D2.4 - Evaluation of the role played in Europe by novel (non- *C. imicola*) vector species

D2.5 - Standardised protocols for detection of presence/absence and estimation of abundance of *Culicoides.*

D2.6 - Evaluation of available models of suitable vector (larval and adult) habitat

D2.7 - Recommendations on optimal surveillance protocols for *Culicoides*, according to the needs of the country (to confirm vector absence; to demarcate areas of low or zero risk; to monitor vector spread)

D2.8 - A reference collection of *C. imicola* specimens from across the region for future DNA analysis

Objectives WP2

General:

Strengthening Culicoides entomological surveillance in Europe and neighbouring countries.

Specific:

Evaluation and harmonisation of (1) surveillance protocols and (2) available tools for trapping,

Identification of vectors and modelling of vector habitat

D2.2 - Guide to the identification of Culicoides vectors and potential vectors present in the Mediterranean basin, including molecular methods.

MOLECULAR TAXONOMY

Montpellier meeting 2007:

• Ring trial of molecular methods for differentiation of obsoletus species.

Palma meeting 2007:

• Ring-trial of molecular methods organised by CIRAD.

Teramo meeting 2008:

• Presentation of the results of the ring trial. Participants: CIRAD, IBASA, IAH, ITMA, CRESA.

• Organization of the next ring trial.

MORPHOLOGICAL TAXONOMY

Montpellier meeting 2007:

Photos by J.C. Delecolle and Pirbright. Key on web. – by Schaffner.
Species lists per country.

Palma meeting 2007:

To produce template for computer-assisted key for identification of Culicoides.

Basic identification of european vectors to be included in Medreonet Webpage.

Teramo meeting 2008:

• Towards an online key for morphological identification of Palearctic *Culicoides* species. CIRAD
•Organization of a meeting on Taxonomy.

OBJECTIVES OF THE MEETING

General objective:

To develop an identification tool to facilitate the morphological identification of Palearctic *Culicoides* species

Specific objectives:

• To define consensually the taxonomic units (groups, complexes, and sibling species)

• To present the first draft of the identification key (currently on French fauna)

• To discuss and validate the diagnostic characters for the main Palearctic species

SOME REMARKS

1.- No compilation exists of the *Culicoides* of Western Europe.

2.- In many European countries the *Culicoides* fauna has not been studied neither published.

3.- In general, scarce systematic information about identification of other than vector species and their related bioecology.

4.- Confusing terminology: species complex /group.

5.- Confusing literature; i.e.: species included in the Obsoletus complex /group (*C. obsoletus*, *C. scoticus*, *C. montanus*, *C. chiopterus* and *C. dewulfi)*

6.- Epidemiology vs. Taxonomy

7.- A complete review of the European literature may be needed?

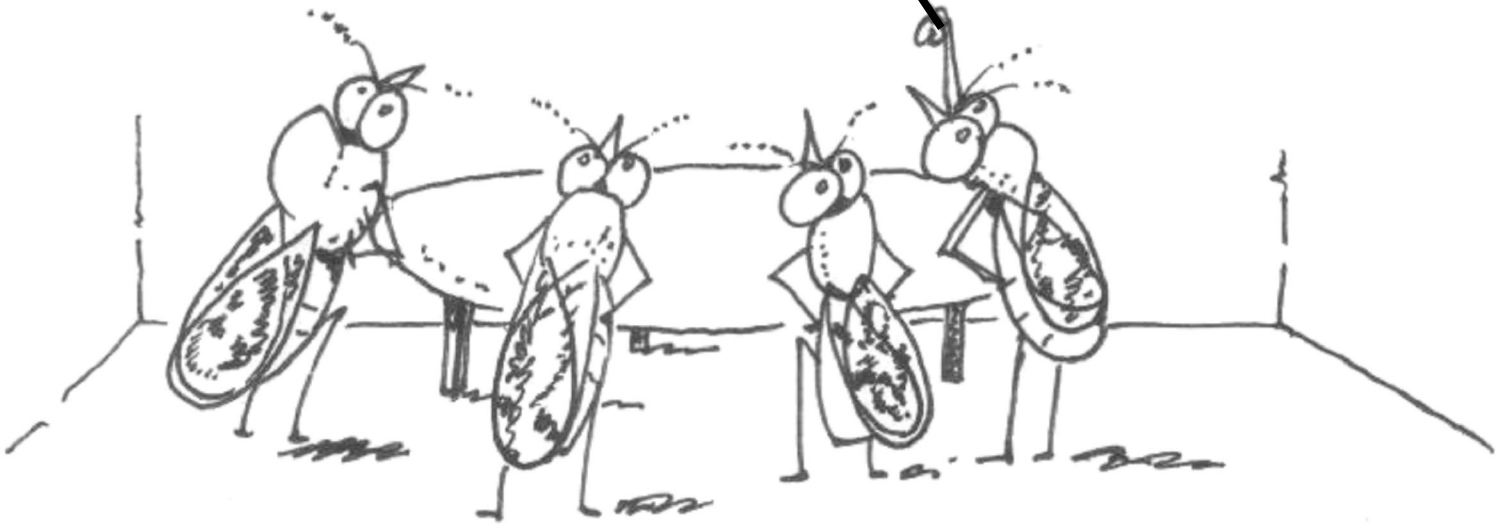
Table 1. Summary of the main conclusions on potential *Culicoides* vectors of BTV in Europe. Much of this information is based on collections of *Culicoides* using light traps only.

Species	Easy to identify morphologically on wing pattern*	Virus studies	Virus isolation/PCR detection	Abundance in Mediterranean Europe	Abundance in temperate Europe	Breeding sites	Diurnal activity recorded	Indoor/Outdoor presence recorded
Culicoides imicola	Yes	Field	+/+	+++	-	Sun-exposed organically enriched mud in the farmyard	-	+/+
Obsoletus complex*	Yes	Field/Lab	+/+	+++	+++	Forest, organically enriched soil.	+	+/+
C. dewulfi	No	Field	-/+	+	+++	Dung pats	+	+/+
C. chiopterus	Yes	Field	-/+	+	+++	Dung pats	+	+/+
Pulicaris complex	Yes	Field/Lab	+/+	+++	+++	Sun-exposed, vegetated, organically enriched, saturated mud in the farmyard	-	+/+
C. pulicaris	No	Field	+/+	+	+(+)		-	
C. newsteadi	Yes	Field	-/-	+++	+		-	
C. lupicaris	No	Field	-/-	(-)	(+)		-	
C. punctatus	Yes	Field	-/-	+(+)	+++		-	

Legend:

*Individual species of *Culicoides* are relatively easy to assign to the correct species complex, but more difficult to identify down to species level (e.g. *Culicoides obsoletus/scoticus*)

Source: ***The EFSA Journal* (2008) 735, 1-70**



These are dangerous people!!…They will not stop until knowing everything about us!!!