

# ***Culicoides* (Diptera: Ceratopogonidae) in Albania: results of the 2002 entomological survey for bluetongue**

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## Summary

A survey for *Culicoides* Latreille, 1809, was made in Albania in 2002 to establish whether *Culicoides imicola* Kieffer, 1913, the main vector of bluetongue virus in the Mediterranean Basin, or any other suspected vector species, was present. The collections and analyses were performed in accordance with the protocols of the National Reference Centre for Exotic Diseases (CESME: *Centro Studi Malattie Esotiche*) in Teramo, Italy. A total of 43 catches were made in October and November in 15 districts (Bulqise, Devoll, Dibre, Durres, Fier, Gjirokaster, Has, Kolonje, Korce, Librazhd, Permet, Pogradet, Shkoder, Tirane and Tropoje). Twenty species of *Culicoides* were identified in the collections; the most abundant species belonged to the Obsoletus Complex (98% of total *Culicoides* in some catches). *Culicoides imicola* was never captured during the survey. However, a larger number of *Culicoides* collections and collection sites are needed to exclude the presence of this species at low abundance levels.

## Keywords

Albania – Bluetongue – *Culicoides* – *Culicoides obsoletus* – Entomological surveillance – Obsoletus Complex.

## Introduction

The circulation of bluetongue (BT) virus (BTV) was confirmed serologically in Albania in 2002 (1) during a joint project implemented jointly by the Albanian Veterinary Services, the Veterinary Research Institute of Tirana and the Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise 'G. Caporale', Teramo, Italy. In the same season, a survey for *Culicoides* Latreille, 1809, was also conducted to establish whether *Culicoides imicola* Kieffer, 1913, the main vector of BTV in the Mediterranean Basin, or any other suspected vector species, was present. This paper presents the results of this first entomological survey conducted between October and November 2002.

## Materials and methods

A total of 43 catches were made in October and November in 15 districts of Albania (Bulqise, Devoll, Dibre, Durres, Fier, Gjirokaster, Has,

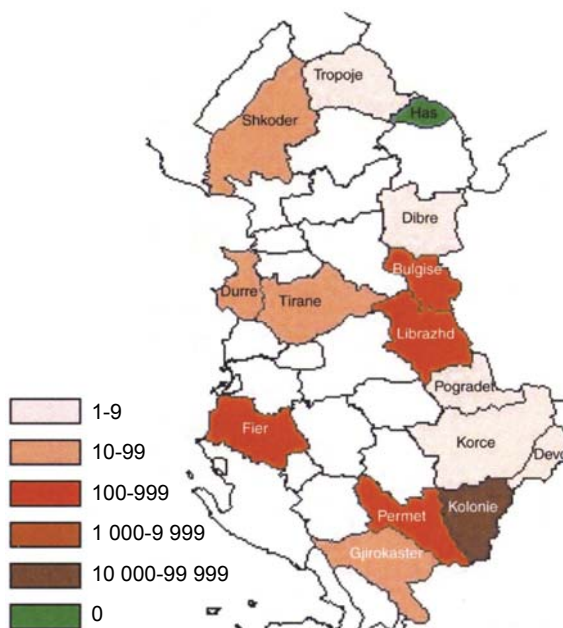
Kolonje, Korce, Librazhd, Permet, Pogradet, Shkoder, Tirane and Tropoje) (Table I). The collections and the analyses were performed in accordance with the protocols of the National Reference Centre for Exotic Diseases (CESME: *Centro Studi Malattie Esotiche* in Teramo, Italy (3).

## Results

The distribution and abundance map of *Culicoides* spp. is presented in Figure 1. With the single exception of Kolonje, the number of midges per catch was always less than 400 (Table I). *Culicoides imicola* was never captured during the survey. The species of the Obsoletus Complex were the most abundant (Fig. 2) and at least two species of the complex, *C. obsoletus* and *C. scoticus*, were present. In the Kolonje district where three catches were performed, the number of midges per catch ranged between 2 620 and 20 884 and 98% of the midges belonged to the Obsoletus Complex.

**Table I**  
**Culicoides collections made in Albania, October-November 2002**

District	No. of catches	Maximum number of <i>Culicoides</i> per catch
Bulgise	3	245
Devoll	3	2
Dibre	3	2
Durres	3	20
Fier	3	365
Gjirokaster	3	91
Has	1	0
Kolonje	3	20 884
Korce	3	2
Librazhd	3	199
Permet	3	160
Pogradet	3	2
Shkoder	3	45
Tirane	3	29
Tropoje	3	8

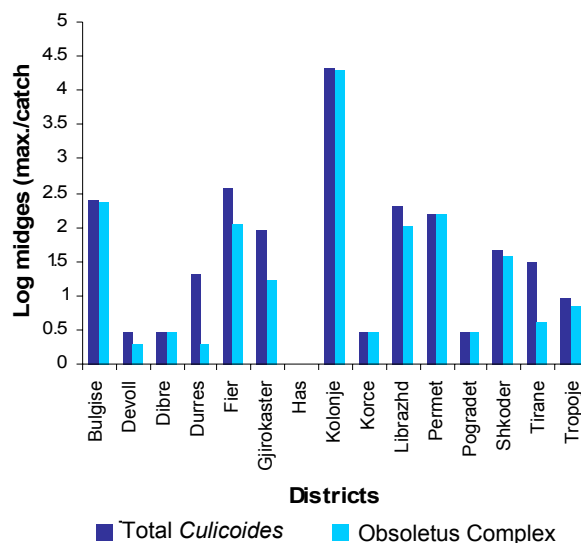


**Figure 1**  
 Abundance of *Culicoides* spp. in Albania October-November 2002

Twenty species of *Culicoides* were identified in collections, as follows:

- *C. alazanicus* Dzhafarov, 1961
- *C. cataneii* Clastrier, 1957
- *C. circumscriptus* Kieffer, 1918
- *C. festivipennis* Kieffer, 1914
- *C. gejelensis* Dzhafarov, 1964
- *C. kibunensis* Tokunaga, 1937
- *C. maritimus* Kieffer, 1924
- *C. newsteadi* Austen, 1921
- *C. nubeculosus* Meigen, 1830,
- *C. obsoletus* Meigen, 1818
- *C. odiatus* Austen, 1921
- *C. pulicaris* Linnaeus, 1758
- *C. punctatus* Meigen, 1804
- *C. puncticollis* Becker, 1903
- *C. rietbi* Kieffer, 1914
- *C. saevus* Kieffer, 1922
- *C. scoticus* Downes and Kettle, 1952
- *C. sejfadinei* Dzhafarov, 1958
- *C. submaritimus* Dzhafarov, 1962
- *C. univittatus* Vimmer, 1932.

Saut de colonne



**Figure 2**  
 Abundance of total *Culicoides* and Obsoletus Complex in Albania, October-November 2002

### Discussion

In areas where the abundance level of *C. imicola* is low (less than 100 per trap), high trapping pressure is necessary to reveal its presence (2). Consequently, a larger number of *Culicoides* collections and collection sites are required to exclude the presence of *C. imicola* at low abundance levels in Albania. However, the evidence of BTV circulation in Albania (1) and the absence of the main vector *C. imicola*, suggest that other *Culicoides* species could be implicated in virus transmission. The high

abundance level of the Obsoletus Complex, from which BTV was recently isolated in outbreaks where no specimens of *C. imicola* were captured (4), also suggests that the vectors in Albania probably belong to this species complex.

## References

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