

Culicoides imicola in Greece

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Summary

Culicoides imicola, the major vector of bluetongue virus in Africa and the Middle East, was recorded in Greece for the first time in 1982 following an outbreak of the disease on the island of Lesbos (October 1979). Since then, many hundreds of *Culicoides* trappings have been made and thousands of *Culicoides* have been collected from the islands and from mainland Greece. *Culicoides imicola* is now present on most of the eastern Aegean islands and in northern, central and south-eastern mainland Greece.

Keywords

Bluetongue – *Culicoides imicola* – Greece – Vector.

Introduction

In October 1979, an outbreak of bluetongue (BT) caused by BT virus (BTV) serotype 4 was reported on the Greek island of Lesbos. The disease affected mainly the eastern part of the island and caused considerable economic prejudice to the farmers. Furthermore, the incident created a new field of investigation for many scientists within the Greek Veterinary Service (3, 5). John Boorman was the first scientist who studied *Culicoides* collected from Lesbos and identified at least 17 species, among which was *C. imicola* (2) (Fig. 1). This was the first record of *C. imicola* in Greece.

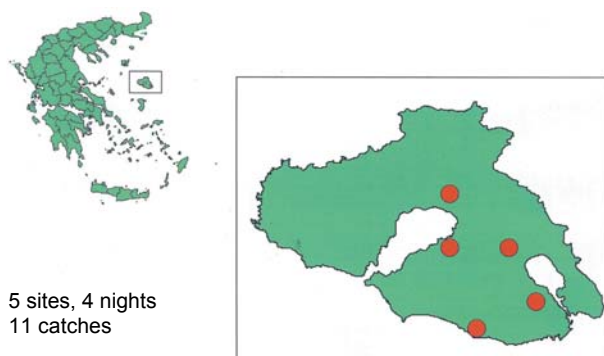


Figure 1
Culicoides imicola trappings on the island of Lesbos in 1982 (2)

In October 1984, *C. imicola* was collected on the island of Rhodes (1) (Fig. 2). At the same time, Mellor *et al.* collected *Culicoides* on mainland Greece (4) but did not find *C. imicola* among the 20 species

identified. (Fig. 3). Since 1985, many hundreds of *Culicoides* trappings have been made and thousands of insects have been sorted in the Parasitology Department in Athens. A comprehensive account of this work is presented here, with emphasis on the distribution of *C. imicola* in the country.

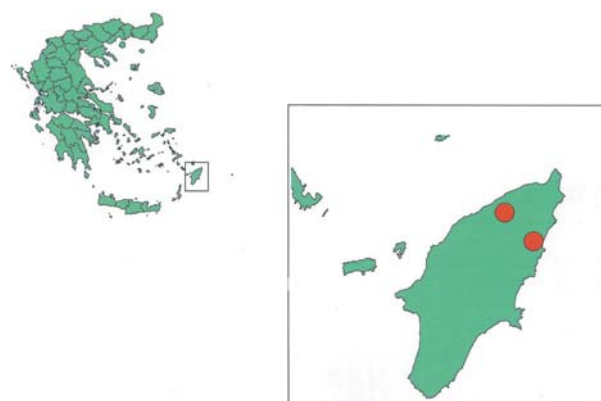


Figure 2
Two *Culicoides imicola* trappings on the island of Rhodes in 1983 (1)

Materials and methods

Insects were initially collected with Monks Wood traps and with Pirbright traps of similar design. Since 1999, more durable and efficient traps of similar design made in South Africa have been used. Insects were collected in a weak solution of detergent and preserved in a 5% formalin solution and/or 70% alcohol.



Figure 3
Culicoides trappings on mainland Greece in 1983 (4)

Identification was made by comparing specimens with collections of the Parasitology Department in Athens or with those provided by the Institute for Animal Health in Pirbright or those from early catches by J.P.T. Boorman and P.S. Mellor.

Results and discussion

From 1985 to 1990, light traps operated in four locations, namely: Mantamados, Pelopi, Kalloni and Agia Paraskevi, with sorting intervals throughout the year. A new record for Greece was *C. parroti*, and *C. imicola* was present in winter catches, although in very low numbers (1, 2 or 3 specimens).

In 1990, a survey was conducted to detect BT vectors in Greece. This was sponsored by the European Commission (VET/AH/4), with the assistance of P.S. Mellor and co-ordinated by O. Papadopoulos of the Faculty of Veterinary Medicine, Aristotle University in Thessaloniki. Collection sites are shown in Figure 4.



Figure 4
Culicoides trappings on mainland Greece from 1991 to 1992
(Contract VET/AH/4)

Light traps were operated from September 1991 to December 1992 on a weekly basis and more than 260 catches were made, sorted and identified in the Athens Laboratory. *Culicoides imicola* was found only on the island of Chios, near Lesbos and Rhodes, where this species was recorded previously (eastern Aegean). *Culicoides imicola* was observed in April, May, July, August, September, October and November, with a peak population in autumn. No *C. imicola* was found on mainland Greece.

Between 1993 and 1998, *Culicoides* were collected occasionally in many parts of the country to monitor the population. In September 1998, an outbreak of BT was recorded in the north-western part of the island of Rhodes and rapidly spread across the island. Trappings were made immediately and large numbers of *Culicoides imicola* were caught. Traps were operated twice a week through the winter into 1999 and *C. imicola* was found to be present continuously.

In 1999, BTV was reported from the islands of Simi, Kos, Samos and Lesbos and finally an outbreak occurred in northern Greece (Halkidiki) in late September and in central Greece (Larisa, Omolios) in early October. Trappings of *Culicoides* commenced and *C. imicola* was present on the islands and, for the first time, on mainland Greece (Halkidiki, Omolios). At the same time, a large research project (Contract No. QLK2-2000200611), was approved by the European Union; many Mediterranean countries participated in this project co-ordinated by P.S. Mellor and M. Baylis from Pirbright. The project commenced in 2000 and is due to end in 2004.

As part of the project, more than 100 collection sites across Greece were established and additional sites are planned (Fig. 5).

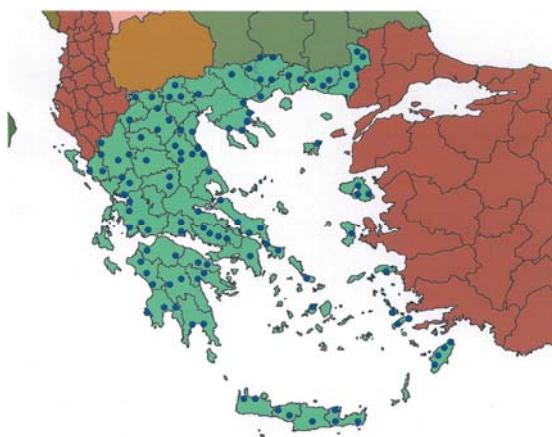


Figure 5
Sites sampled for *Culicoides* in Greece during the summers of 2000-2003

As shown in Figure 6, many other *C. imicola* sites were discovered on mainland Greece and the project

is progressing. In 1992, no *C. imicola* was detected on mainland Greece or on the island of Crete. As the situation appears today, the future does not seem promising.



Figure 6
Distribution of *Culicoides imicola* in Greece, July 2003

Acknowledgements

The author would like to thank his colleagues and veterinary surgeons across Greece for their valued and constant help during all these years of *Culicoides* trapping. Finally, grateful thanks are extended to J.P.T. Boorman and especially P.S. Mellor who gave me more than knowledge; they provided the ability to enjoy working on *Culicoides* and I feel deeply obliged to them.

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