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.

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.
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.

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, Omoloi) in early October. Trappings of *Culicoides* commenced and *C. imicola* was present on the islands and, for the first time, on mainland Greece (Halkidiki, Omoloi). 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).
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

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**References**