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Monitoring of *Culicoides* populations in France

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In response to the bluetongue outbreaks in 2000 and to the establishment in Corsica of the Afrotropical biting midge species, *Culicoides imicola*, a monitoring program coordinated by the Centre de coopération internationale en recherche agronomique pour le développement (Cirad) was set up by the Ministère de l'Alimentation, de l'agriculture et de la pêche (French Agricultural Ministry).

Since 2009, trapping was carried out at 160 locations dispersed over the French departments. The selected sites were farms with ruminants (ovine, bovine or goats), and traps were deployed close to animal herds. The main objectives were to gain better insight in the distribution and dynamics of species of the genus *Culicoides* in France and to determine the *Culicoides* vector-free period. Black-light traps were run for one night every week in spring and autumn (from February to April and from October to December) and one night every month (black moon week) in summer and winter (from May to September and in January). Captured *Culicoides* were identified morphologically and the numbers of parous and nulliparous females for each species were recorded. From January to December 2009, a total of 1 036 540 *Culicoides*, belonging to at least 69 species were trapped. A new species for the French fauna has been recorded, *C. abchazicus*. The most abundant species representing 70% of the total catch was the *Obsoletus* complex, *C. obsoletus/scoticus*, followed by the Newsteadi group (10% of the total catch). First biting midge specimens were caught late February in southwest France. The following weeks showed spatial dynamics following a southwest-northeast gradient with a peak middle April. Then a slight reduction is observed followed by another peak in May and June. A late peak was observed early October.

In conclusion, wide-area and long term entomological surveillance allows the establishment of correlations between species distribution, population dynamics and climatic and ecological factors for a better understanding of vector presence and dynamics.