

Estimation Of *Culicoides imicola*'s Sheep Biting Rate In France.

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Abstract

As a result of the establishment of a *Culicoides imicola* population in the south of France, Roquebrune-sur-Argens has become a potentially high risk area for Bluetongue disease. The vectorial capacity, which provides a measure of disease risk, was chosen to estimate risk dynamics during vector activity period in this area.

The biting rate is a parameter of the vectorial capacity which may significantly influence the bluetongue virus transmission. This parameter cannot be measured in routine, but it could be indirectly estimated by the number of *C. imicola* collected in UV-light traps. The study presented here aims to estimate the relationship that may exist between this number and the number of *imicola*'s bites/sheep/night. To assess this biting rate, a study was carried out in a sheep farm during two consecutive nights. After a fixed exposition period, ewes were enclosed by a cotton sheet and battery-operated aspirators were used for 10' to collect every flying insect present. A rest period was respected between each collection cycle. A UV-light trap was placed nearby the animals only during the first night. This experiment was repeated at two periods of the vector activity season.

Even if it appears essential to develop more efficient methods to trap engorged *Culicoides*, first results concerning maximum activity period during the night and estimation of the ratio of *C. imicola* biting animals / number of *C. imicola* trapped are presented. The hypothesis according to which UV-light traps could guarantee a good protection to sheep against *Culicoides* bites is also discussed.