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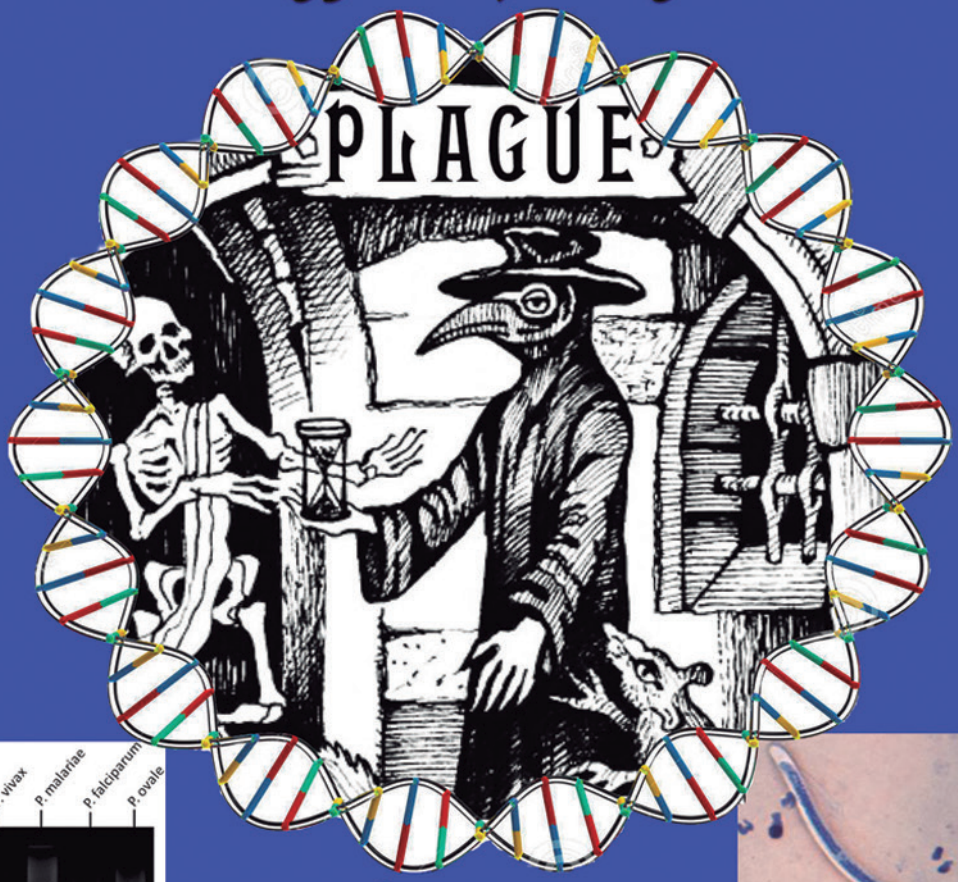
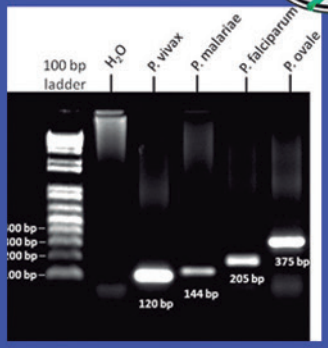
New Technology Conquering Old Vectors?





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SOVE 2017

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- Book of Abstracts -

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Modelling the temporal dynamics of *Culicoides* populations on Reunion Island (Indian Ocean) vectors of viruses of veterinary importance

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Reunion Island regularly faces outbreaks of epizootic haemorrhagic disease (EHD) and bluetongue (BT), two viral diseases transmitted by haematophagous midges of the genus *Culicoides* (Diptera: Ceratopogonidae). To date, only 5 species of *Culicoides* are recorded in Reunion Island: *Culicoides imicola*, *C. bolitinos*, *C. enderleini*, *C. grahamii*, and *C. kibatiensis*. Among these, at least the first three have been implicated in the transmission of BT and EHD viruses to ruminants. Since January 2016, biweekly monitoring using OVI traps have been set up in 10 sites to study the temporal dynamics of each species. A hurdle model (i.e. a logistic regression presence/absence model combined with a zero-truncated negative binomial mixed effect abundance model) was developed for each species in order to obtain first insights regarding the climatic and environmental determinants driving presence/absence and abundance of *Culicoides*. Our first results show that temperature, wind speed, vegetation index and rain are main parameters affecting *Culicoides* abundance. This study is the first step to model *Culicoides* population dynamics in Reunion Island. In the absence of vaccination and vector control strategies, this could help farmers, stakeholders and veterinary services identify the high abundance period and potentially high risk periods for both viruses.