

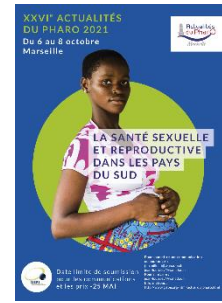
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Resistance to pyrethroids and DDT in the *Anopheles arabiensis* population of Marovoay, Madagascar

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In Madagascar, malaria control is essentially based on case management, indoor residual spraying campaigns and insecticide-treated bed net distribution campaigns. It is imperative to monitor the sensitivity of *Anopheles* to insecticides. With this in mind, we assessed the susceptibility of *Anopheles arabiensis* populations in the Marovoay health district to different insecticides in March 2017. *Anopheles* larvae and nymphs collected in Tsararano were reared for 10 to 12 days. After morphological identification, 650 adult female *Anopheles gambiae*, aged two to five days, were used for susceptibility testing with lambda-cyhalothrin (0.05%), deltamethrin (0.05%), DichloroDiphenyltrichloroethane or DDT (4%), Malathion (5%), Fenitrothion (1%) and Bendiocarb (0.1%) according to the protocol recommended by the WHO. PCR tests were carried out to identify members of the *An. gambiae* complex among these tested *anopheles*. The individuals tested were *An. arabiensis* according to the PCR results. The *An. arabiensis* population in Tsararano was resistant to lambda-cyhalothrin and Deltamethrin (pyrethroids) and to DDT, with respective mortality rates of 51% (CI95%: 43-57.7%), 49% (CI95%: 44.1-57%) and 42% (CI95%: 37.5-45.3%). On the other hand, it was sensitive (100%) to carbamate (Bendiocarb) and organophosphates (Malathion and Fenitrothion). Our results thus demonstrate the resistance of *Anopheles arabiensis* in Tsararano, Marovoay. This situation is alarming because pyrethroids are recommended for the impregnation of mosquito nets. This is a potential threat to the vector control programme in this region. Also, as our data showed resistance of *An. arabiensis* to DDT and pyrethroids, the possibility of knockdown resistance (*kdr*), which has never been observed in Madagascar before, will be discussed in our presentation. We have generated useful and usable data to improve malaria control policy in Madagascar where the use of third generation nets (pyrethroid + synergists) to control pyrethroid resistant vectors should be taken into account.