

# Insecticide susceptibility of *Anopheles melas* strain sampled from brackish water in area of low malaria transmission in Senegal



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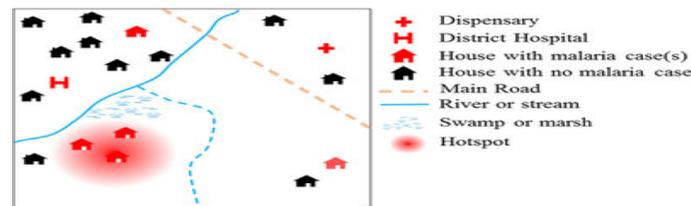
## Background

In areas of low malaria transmission, such as Western and Central Senegal where scaling up of control measures has been effective in reducing malaria incidence, additional measures are required to eliminate the disease. To eliminate malaria in this part of the country it is important to assess the sensitivity to insecticides of different vector populations and the different anopheles species involved in malaria transmission.

### Several effective interventions



### Persistence of transmission in some villages (HOTSPOTS)

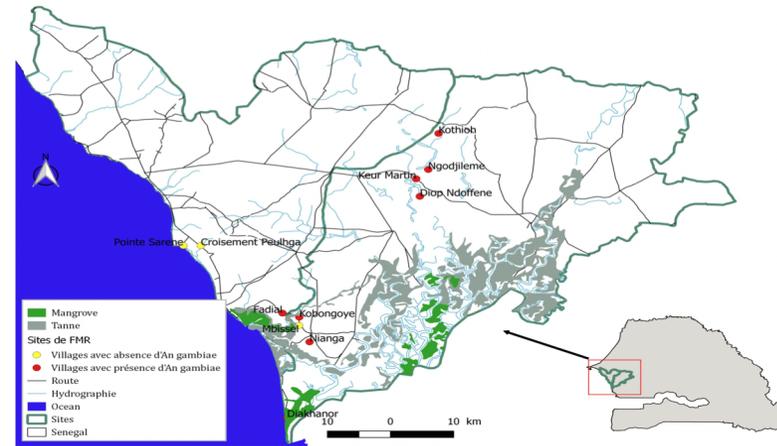


### Acknowledgment

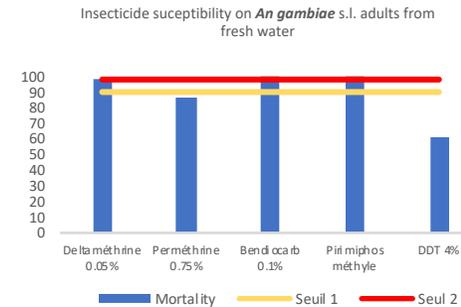
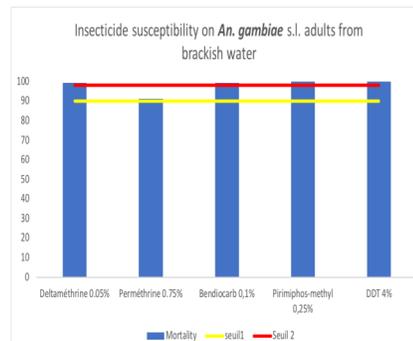
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## Methods

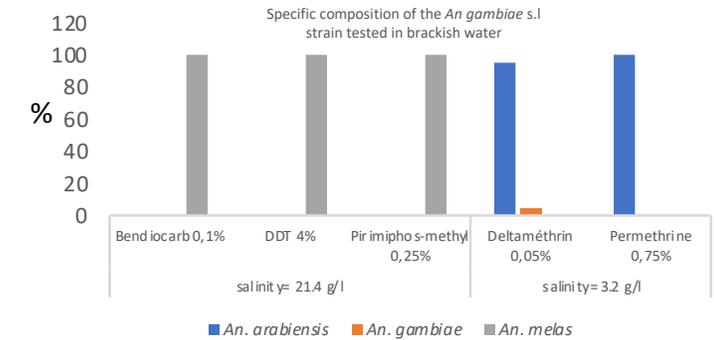
Vector susceptibility to Bendiocarb (0.1%), Pirimiphos-methyl (0.25%), Deltamethrin (0.05%), Permethrin (0.75%) and DDT (4%) was monitored using WHO method : 3-5 days old female mosquitoes reared from breeding sites in brackish water and fresh water in the costal zone in Senegal. *Anopheles gambiae* complex was identified using PCR.



## Results



Sensitivity tests carried out on brackish-water anopheles strains collected in salt-tolerated sites ranging from 3.2 to 21.4 g / l showed a deltamethrin sensitivity with 99.1% mortality, and a suspicion of resistance to permethrin with 91.2% mortality. For carbamates (Bendiocarb 0.1%), organochlorines (DDT 4%) and organophosphorus (pirimiphos-methyl 0.25%) the tests showed a total sensitivity of brackish water strains to these molecules with 100% of mortality. Freshwater strains exhibited resistance to permethrin and DDT while they were susceptible to deltamethrin and organophosphate.



The molecular identification of *An. gambiae* s.l. strains from brackish water showed that *Anopheles melas* had a complete susceptibility to bendiocarb, pirimiphos-methyl and DDT.

## Conclusion

The results show a sensitivity of *An. melas* to DDT, Bendiocarb and Pirimiphos-methyl. The next steps in this study will be to assess the sensitivity of *Anopheles melas* to pyrethrinoids and evaluate the prevalence of KDR East and KDR West genes. We will also evaluate its contribution to the residual transmission of malaria in Senegal.

