Binomics of mosquitoes in Anambra State, Nigeria

D.N. Aribodor
Nnamdi Azikiwe University, Awka, Anambra, Nigeria

Background: Mosquito-borne infections constitute major public health challenge in Nigeria. Following indoor residual spraying (IRS) in some communities, there was the need to study species distribution, breeding habitats and infection rates to inform efforts at the elimination of mosquito-borne infections.

Methods & Materials: Collection of larval mosquitoes was carried out using appropriate sampling techniques for specific habitats. Adult indoor and outdoor biting mosquitoes were sampled using Pyrethrum Knockdown Collection (PKC) and Human Bait Collection (HBC) techniques, respectively. Blood fed mosquitoes were dissected for infection using the pressing method.

Results: 307 mosquito larvae comprising 3 genera and 5 species (Anopheles gambiae, Aedes simpsoni, Ae. albopictus, Ae. aegypti and Culex quinquefasciatus) were collected from 4 different breeding habitats (ground pools, domestic containers, drainage/gutters and plant axils). 684 indoor mosquitoes comprising An. gambiae 39.3%, Cx. quinquefasciatus 60.5% and An. moucheti 0.2% were collected. 143 outdoor mosquitoes comprising Ae. aegypti 72.7%, Ae. albopictus 23.0%, Ae. africanus 2.8% and Ae. simpsoni 1.4% were collected. Zero infection rates were recorded for dissected species.

Conclusion: Dissected mosquitoes showed zero infection rates probably due to the recent IRS in the area studied. The 5 species identified are potential vectors of diseases of public health importance and action is needed in manipulating the identified 4 breeding habitats in order to protect community members from mosquito bites and possible transmission of infections.

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