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THE EFFECT OF PIPERONYL BUTOXIDE ON THE SUSCEPTIBILITY STATUS OF *Anopheles gambiae s.l.* TO PUBLIC HEALTH INSECTICIDES IN A NIGER DELTA ZONE

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ABSTRACT – Present level of resistance of *Anopheles gambiae sensu lato* and the effectiveness of PBO-bednet insecticides were examined in the lowland forest vegetation of Rivers State, Nigeria. Sample collection was achieved in the rainy season. Female *Anopheles gambiae s.l.* were tested. Technical grade insecticides included bendiocarb, propoxur, permethrin, deltamethrin, lambda-cyhalothrin, alpha-cypermethrin, primiphos-methyl and dichlorodiphenyltrichloroethane. Dead and active mosquitoes after 15, 30, 35, 40, 45, 60, 75, 90, 105, 120 minutes were recorded. Some resistant insecticides were further subjected to piperonyl butoxide (PBO) synergist bioassay. Analysis of variance checked for significant variations in dead mosquitoes to the insecticides tested. Bendiocarb proved active for indoor residual spraying (IRS) and long-lasting insecticidal nets (LLINs) impregnation. Addition of PBO-synergists to pyrethroids was effective and should be used for IRS and LLINs. The study presented reference point data when observing the level of insecticide resistance in Rivers State.

Keywords: Anopheles gambiae s.l., insecticides, lowland forest, mortality, resistance, Rivers State

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