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POSTER

Susceptibility of Malaria Vectors to Insecticides in Ampara, Batticaloa, Trincomalee & Mannar Districts of Sri Lanka

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Background: The current status of insecticide resistance was studied for potential malaria vectors in four districts namely Ampara, Batticaloa, Mannar and Trincomalee of Sri Lanka.

Methods: Insecticide-susceptibility tests were carried out using WHO standard kits against various chemical compounds at ambient room temperature of 27+1°C and relative humidity of 75-80% for adult and larvae separately. A total of 3629 adult female *Anopheles* mosquitoes belong to nine species (*An. subpictus*, *An. vagus*, *An. nigerrimus*, *An. peditaeniatus*, *An. pallidus*, *An. annularis*, *An. jamesii*, *An. pseudojamesi* and *An. barbirostris*) were exposed to cyfluthrin- 0.15%, etofenofrox- 0.5%, bendiocarb- 0.01%, malathion – 5%, deltamethrin – 0.05%, permethrin – 0.75%, λ-cyhalothrin– 0.05%, fenitrothion – 1.0% and propoxur – 0.1%. A total of 610 larvae belong to five *Anopheles* species (*An. subpictus*, *An. vagus*, *An. barbirostris* and *An. peditaeniatus*) were exposed to 0.0025, 0.005, 0.125 and 0.625 mg/l of viz. temephos (Abate).

Results: All of the mosquito larvae or adult species used for the study were susceptible for selected insecticides (Mortality 98-100%). Adult *Anopheles* species showed a possibility of developing resistance to some chemicals (Mortality 97- 80%): *An. nigerrimus* (lambda-cyhalothrin and permethrin), *An. peditaeniatus* (malathion, deltamethrin and cyfluthrin) *An. subpictus* (deltamethrin, permethrin, propoxur, cyfluthrin, and etofenprox), *An. vagus* (deltamethrin, permethrin and etofenprox) and *An. pallidus* (deltamethrin). *Anopheles* larvae of *An. subpictus*, *An. barbirostris* and *An. peditaeniatus* showed the potential of developing resistance (Mortality 97-80%).

Interpretation & conclusion: As a result of resettlements and expanding commercial agriculture there can be a potentiality of developing insecticide resistance in mosquito individuals. Therefore, proper use of chemicals as pesticides should be adopted in these areas.

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