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Mosquito larvicidal activities of pesticide formulations from Azadirachta indica (Neem)

Malaria and Filaria are mosquito-borne diseases, which have become major international and local public health concerns. Two pesticide formulations were prepared using methanol extract of neem seeds, neem oil and citronella oil. Formulation A contains methanol extract of neem seeds, neem oil and citronella oil. Formulation B contains methanol extract of neem seeds and neem oil. The Azadirachtin (AZA) levels of the formulations were determined by HPLC. These formulations were tested following WHO standard method for mosquito 3rd instar larvae against the larvae of *Culex quinquefasciatus* and *Anopheles tessellatus*.

Fifty milliliters of pesticide diluted solutions at 412.5, 825, 1650, 3300 ppm concentrations (2.5, 5, 10, 20 ppm of AZA respectively) of formulation A & 452, 904, 1808, 3616 ppm concentrations (2.5, 5, 10, 20 ppm of AZA) of formulation B were introduced into beakers containing 25 larvae and mortality percentage at 1 h., 3 h., 6 h. & 24 h. intervals were calculated. Diluted solution of the formulation without extract and oils at the highest test concentration served as control.

Formulation A at 1650 ppm concentration (10 ppm of AZA) & at 1808 ppm concentration of formulation B (10 ppm of AZA) showed 100% mortality against *C. quinquefasciatus* after 24 h. and ED50 values after 24 h. were 388 ppm solution of formulation A & 338 ppm solution of formulation B. Formulation A at 412.5 ppm concentration (2.5 ppm of AZA) & at 904 ppm concentration of formulation B (5 ppm of AZA) showed 100 % mortality against *A. tessellatus* after 24 h. and ED50 values after 3 h. were 407 ppm solution of formulation A & 2079 ppm solution of formulation B.This study indicates that both formulations have moderate lethal properties against mosquito larvae.

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