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Effectiveness of red water tree (*Erythrophleum suaveolens*) plant barks and roots extracts in controlling mosquitoes (*Anopheles gambiae*) larvae in Songea district, Tanzania

Mnguu Y.O.[1], Nkomera V.A.[2] and Malila M.N.[1]
[1]: Institute of Rural Development Planning (IRDP), P.O. Box 138, Dodoma, Tanzania,
[2]: Songea Municipal Council, P.O.Box 14. Songea, Tanzania
Corresponding author email: yomnguu@gmail.com , Mobile phone: +255755966250

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1 ABSTRACT

Malaria is one of the most important parasitic diseases and the largest killer disease in Tanzania. The conventional control measures for the disease vector involved the use of inorganic insecticide spray like *Dichloro Diphenyl Trichloroethane* (DDT) which poses a lot of environmental as well as health problems. This paper intended to assess effectiveness of organic insecticide extracted from *Erythrophleum suaveolens* plant barks and plant roots in the control of larvae of *Anopheles gambiae* by determining the lethal dose and lethal time at LD 50 and LD 95 of plant bark and roots extract solution and determining the availability of plant in the study area. The experimental design used was randomized block with 10 treatments of extract concentration from plant bark and roots. The treatments also comprised of control arm and standard arm. Larvae of *Anopheles gambiae* at 3rd and 4th instars were subjected to various concentrations of the extracts solution. Mortality was counted and recorded after one hour and 24 hours exposure to the chemical. The results from the study revealed that *Erythrophleum suaveolens* plant barks extract have greater lethal effects to larvae than extracts from plant roots. Mortality of 100% was recorded after one hour of exposure at dosage of 70 mls to100mls per litre for plant barks extract solution and mortality of 100% after twenty-four hours of exposure at dosage of 10mls to 100 mls per litre for plant barks extract solution. The availability of the *Erythrophleum suaveolens* plant showed a distribution index of 1.76 indicating regular distribution. Basing on the findings of this study, it was concluded that plant barks extract solution is more effective in controlling mosquito. The study recommends further analysis to evaluate an appropriate formulation and assess whether there are adverse effects for the use of extracts from *Erythrophleum suaveolens* plant bark.