**Abstract**

The methanolic extracts of Sida acuta and Vetiveria zizanioides leaves and root was investigated for antimalarial activity against Plasmodium berghei infections in mice. The median lethal dose was determined to ascertain the safety of the extract in mice. The antimalarial activities during early and established infections were evaluated. Phytochemical screening was also investigated to elucidate the possible mechanism of the antimalarial and antivectorial properties. The extracts of Sida acuta and Vetiveria zizanioides leaf and root demonstrated significant antiplasmodial activity in all the three groups (test for root and leaves and one control includes three groups) of the antimalarial evaluations. Plant extracts treatment showed higher mortality against mosquito larvae, lethal dose (Lc50 and Lc90) was also worked out for the larval instars of malarial vector, Anopheles stephensi. Phytochemical screening revealed the presence of some vital insecticidal and antiplasmodial constituents such as terpenoids, flavonoids and alkaloids. The leaf and root extract of S. acuta and V. zizanioides showed markedly significant antimalarial activity and antivectorial activity effects even at low concentrations. o S. acuta and V. zizanioides are promising in mosquito control and also safe for the non-target organisms. This integrated application could be useful as alternative synthetic insecticides. These agents should preferentially to be applied in mosquito control strategies to reduce the mosquito populations and prevent the malaria.