INTRODUCTION
Mosquito borne diseases are one of the world’s most health hazardous problems.\textsuperscript{1} Mosquitoes serve as a major vector for the transmission of numerous diseases such as malaria, dengue fever, yellow fever, filariasis, schistosomiasis and Japanese encephalitis.\textsuperscript{2,3} Aedes aegypti, a vector of dengue and dengue hemorrhagic fever, which is a widely distributed tropical and subtropical disease, is now endemic in more than 100 countries and threatens the health of approximately 2.5 billion people.\textsuperscript{4} The control of these larvae primarily depends upon various synthetic agents such as organophosphates, which may later leads to the environmental and health concerns on repetitive usage.\textsuperscript{5} These problems leads to the development of newer larvicidal drug of commercial importance.

Costus speciosus Koen is an erect plant, up to 2.7 meters high of Zingiberaceae family. It is freely cultivated in rainy seasons. The rhizomes are found to be a good source of steroidal saponins tigogenin and diosgenin.\textsuperscript{6} The plant is well known for its various traditional uses such as aphrodisiac, treatment of leprosy, skin diseases and inflammations etc. The present study aims at evaluating the larvicidal potential of the alcoholic extracts of leaf, stem and rhizomes of Costus speciosus Koen.

MATERIALS AND METHODS
Collection of plant material: The leaves, stem and rhizomes of Costus speciosus was collected from in and out skirts of chelembra and the same was authenticated by Dr A.K Pradeep, Herbarium curator, Department of Botany, Calicut University, Malappuram. Preparation of extracts: The collected materials were shade dried and powdered. The powdered plant material was extracted using cold maceration technique. All the extracts were dissolved in water prior to use for the study. Larvicidal assay: The larvicidal assay was carried out with the help of third and fourth Instar larvae of Aedes aegypti. The study was carried out at a test concentration of 100, 250, 500, 1000, 2000 µg/ml of alcoholic extract of leaf, stem and rhizome of Costus speciosus. One ml of different concentration of the extracts was added to water in a beaker and final volume of was maintained at 250ml for all extract samples. 20 larvae per concentration were used for the study. The number of dead larvae at 0, 1, 2, 3, 4, 5, 6, 12 and 24 hours was recorded and the percentage mortality was calculated. A control group was maintained using only water. The study was performed in triplicate and the average of the study is taken.\textsuperscript{1,6-8}

RESULTS AND DISCUSSIONS
Kerala is a rich source of flora. But till today exploring of these rich resources remain at the base level. In this current study, an attempt has been made to untap one of the Zingiberaceae family that is Costus speciosus Koen for its larvicidal potential. In the present study the efficacy of the alcoholic extracts of the rhizomes, stem and leaves were evaluated against third and fourth Instar larvae of Aedes aegypti at various concentrations of 100, 250, 500, 1000, 2000 µg/ml. The results were shown in the Table: 01. The extract was evaluated at 0, 1\textsuperscript{st}, 2\textsuperscript{nd}, 3\textsuperscript{rd}, 4\textsuperscript{th}, 6\textsuperscript{th}, 12\textsuperscript{th} and 24\textsuperscript{th} hour. The evaluation clearly shows all the extracts exhibits larvicidal property dose dependently. The larvicidal potential of Costus speciosus

**Key words:** Mosquito, larvicidal, Costus speciosus and Aedes aegypti.
Koen was in the following order: Leaves > Stem > Rhizome.

Mosquitoes are one of the biggest threats among the public in creating most health problems in the developing and developed countries. They can be controlled by using mosquito repellent, causing larval mortality and killing mosquitoes. Undoubtedly, plant derived toxicants are valuable source of potential insecticides. They play a major role in mosquito control programs in near future. So, there is always a tremendous need in plant insecticides throughout the globe. These plant derived insecticides are effective against specific target insects, less expensive, easily bio degradable and to non toxic products.

CONCLUSIONS

It can be concluded that, larvicidal potential of the leaves are better than that of the other parts such as rhizomes and stem. Though the efficacy of the leaves were moderately significant, further isolation and purification of isolated compounds may attribute towards desired drug with significant larvicidal effect.

REFERENCES


