INTRODUCTION
Mosquitoes are well known vectors of several disease causing pathogens. Mosquito-borne diseases, such as malaria, filariasis, dengue haemorrhagic fever (DHF) and chikunguinya are real threat to mankind. In the present study ethnolic extracts of leaves of Datura stramonium were evaluated for larvicidal and mosquito repellent activities against Aedes aegypti, Anopheles stephensi and Culex quinquefasciatus. The LD50 values for larvicidal activity were found to be 86.25, 16.07 and 6.25 ppm against Aedes aegypti, Anopheles stephensi and Culex quinquefasciatus respectively. The ethnolic leaves extract of Datura stramonium provided complete protection time (Mosquito repellency) of 2.73, 71.66, 117.7 mins against Aedes aegypti, Anopheles stephensi and Culex quinquefasciatus at higher concentration (1%).

KEYWORDS: Datura stramonium, Larvicidal, Mosquito repellent, Mosquitoes.

MATERIALS AND METHODS
Collection of Plants and extraction: Fully developed leaves of Datura stramonium were collected and authenticated by Dr. Rajanna (Botanist), Department of Botany, G. K. V. K, Bangalore, India. The leaves were washed with tap water, shade dried and powdered. The powdered plant material was loaded in soxhlet apparatus employing standard WHO procedure. Batches of 25 larvae were exposed to ethanolic extracts of powdered plant material in glass beakers of 500 ml capacity. Three replicate sets were tested with a final tally of 75 larvae for each concentration. Solutions containing known concentration of test solution (249 ml water) were prepared by dissolving the crude extract (6.0 % w/v) in dechlorinated tap water and 1 ml of DMSO dissolved test extract in glass beakers of 500 ml capacity. Three replicate sets were tested with a final tally of 75 larvae for each concentration. Solutions containing 249 ml tap water and 1 ml of DMSO without plant sample served as controls. No food was provided to the larvae during the test period.

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Results of the larvicidal and repellent activities of Datura stramonium leaves against Aedes aegypti, Anopheles stephensi and Culex quinquefasciatus are presented in Table:1 and 2. The data was recorded, the LD₅₀ (50% lethal dose), LD₉₀ (90% lethal dose), 95% confidence limit and Chi-square value were calculated.

**RESULTS**

With increase in concentration, the complete protection time is increasing.

**DISCUSSION**

Previous studies on ethanolic extract of Annona squamosa leaves has shown LD₅₀ (20.70 ppm), LD₉₀ (0.011 ppm) against Aedes aegypti and LD₅₀ (6.96 ppm), LD₉₀ (31.80 ppm) against Culex quinquefasciatus. The ethanolic extract of Capsicum annuum fruits shown LD₅₀ (0.011ppm), LD₉₀ (0.027 ppm) against Anopheles stephensi. The ethanolic extract of Datura stramonium leaves showed that LD₅₀ (86.2518 ppm), LD₉₀ (196.389 ppm) against Aedes aegypti, LD₅₀ (16.0783 ppm), LD₉₀ (41.9599 ppm) against Anopheles stephensi and LD₅₀ (6.25 ppm), LD₉₀ (11.25 ppm) against Culex quinquefasciatus. Earlier studies done on essential oil from leaves of Ocimum basilicum showed effective repellency 82.4±0.7, 75.0±1.2 and 115.3±1.9 mg/mat against Aedes aegypti, Anopheles stephensi and Culex quinquefasciatus. Other studies with petroleum ether extract of Zanthoxylum limonella fruits provided protection time of 296 min and 223.5 min against Aedes albopictus in mustard oil base and coconut oil base.
respectively. The ethanolic leaf extract of Datura stramonium provided complete protection time of 2.73, 71.66 and 117.7 mins against Aedes aegypti, Anopheles stephensi and Culex quinquefasciatus at higher concentration (1%).

CONCLUSION

Datura stramonium showed an effective larvicidal activity in comparison with Coleus forskohlii and Pongamia pinnata against Anopheles stephensi and Culex quinquefasciatus. The effective repellency against Culex quinquefasciatus was better compared to Anopheles stephensi and Aedes aegypti. Larvicidal and repellent activities of ethanolic leaf extract of Datura stramonium in this study against the vectors are encouraging.

ACKNOWLEDGEMENT

Authors are thankful to National Institute of Malaria Research, ICMR, Bangalore and PES college of Pharmacy for supporting our studies.

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