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1941 - Chemical Society of Ceylon  
Institute of Chemistry Ceylon 1978

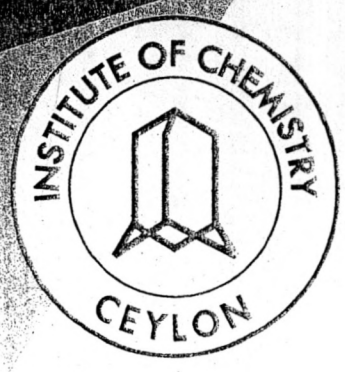
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*longa* rhizomes and *Citrus sinensis* peels and essential oils of *Cymbopogon nardus* leaves, *Eucalyptus globulus* leaves and *Syzygium aromaticum* buds purchased from the market. 1 ml of 10% (v/v%) extract /essential oil containing ethanol solutions prepared using each plant extract / essential oil was tested for mosquito repellent activity using arm-in-cage method. A volunteer's forearm rubbed with 1 ml test solution was exposed to 20 mosquitoes and the number of mosquitoes that aligned or biting the arm was recorded in each minute for five minutes. Analysis was carried out as a triplicate and mosquito repellent activities were

found to be in the order: *C. nardus* and *E. globulus* (100%) > *O. sanctum* (97.94%) > *S. aromaticum* (95.81%) > *C. sinensis* (93.75%) > *C. longa* (89.56%) > *V. negundo* (85.44%) > *A. indica* (81.25%). Outdoor and indoor field trials on mosquito repellent gel and mosquito repellent spray prepared containing 16% (v/v%) active ingredients were conducted separately on two days from 5 am to 11 am by application on volunteers' legs. 100% mosquito repellency up to six hours was observed for the gel and the spray for outdoor and indoor field trials.

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**Technical Sessions A-05**

**Antioxidant status and breast cancer**

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The effect of antioxidants and breast cancer (BC) has been studied with inconclusive results. Thus the objectives of the study were to assess the serum total antioxidant status (TAS) and uric acid (UA) concentration of newly diagnosed breast cancer patients and to compare with the age matched apparently healthy females.

Consent was obtained from newly diagnosed BC patients (n=150) and apparently healthy women in the same age group (n=75). Serum UA concentrations were measured using Kone 20XT biochemical analyzer and serum TAS was analyzed as Trolox equivalents using ABTS [2,2'-azinobis (3-ethylbenzothiazoline-6-sulfonic acid)] free radical scavenging assay. Ethical approval for the study was obtained (631/12, 28/14).

Mean serum UA concentration of BC patients and healthy females were 200±57 µmol/L and 256±72 µmol/L respectively. BC women had UA levels closer to the lower reference margin and was significantly lower (p=0.000) when compared with apparently healthy women. BC women having UA less than 194 µmol/L (cutoff value studied via ROC curve with 92% sensitivity and 63% specificity, p=0.000, 95% CI 0.68-0.83) showed a 2.2 risk (95% CI, 1.7, 2.8) of having BC compared to healthy women. Mean serum TAC of BC patients and healthy females in Trolox equivalents were 6.25(±1.35) and 6.09(±1.31), respectively and not significantly different (p>0.05). Neither serum UA nor TAC concentrations significantly differed (p>0.05) according to the menopausal status among BC and

healthy women.

Even though TAS studied via ABTS free radical scavenging assay is not indicative of BC risk, having serum UA less than 194 µmol/L indicate twice (2.2) the risk of BC compared to apparently healthy females among the study sample.

**Acknowledgements**

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