

Technical Sessions : A - 21

Identification of chemical constituents of *Panicum maximum* plant that shows attraction to paddy bug

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Paddy bug (*Leptocorisa oratorius*) is the major pest damaging the rice plant in Sri Lanka. These bugs attack the plant by sucking the sap of grains. This causes partially filled grains making severe loss in products. The highest population is seen during the flowering stage of rice in paddy field. Paddy bugs are not only attracted to the rice plant. They feed on weed plants growing in the paddy fields. Research has been conducted to identify the weeds that paddy bugs survive on when the rice panicles are not present. *Echinochloa colonum*, *E. glabrescens*, *Panicum repens*, *Cyperus iria* are the major plants that act as weed hosts for paddy bugs. This research is conducted to investigate the chemical compound responsible for attractivity of paddy bugs

to *Panicum maximum* weed. Leaves, flowers, stems of *Panicum maximum* plant were collected separately and subjected to steam distillation. From the steam volatiles, series of doses were prepared (2µg/ml, 4µg/ml, 6µg/ml, 8µg/ml). Bioassay to investigate attraction using Y-shaped olfactometer. Leaves and flowers showed the highest attraction. Gas chromatography results showed that volatiles of all plant parts had 3 major compounds. Preparative thin layer chromatography was carried out to isolate 2 major compounds present in flower volatile. One of the pure compounds showed a greater attraction to paddy bug than the crude flower volatile. LC-MS data showed the molecular weight of the compound is 390. Structure elucidation is currently being conducted.

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## Technical Sessions : A - 22

## Determination of the content of cadmium, lead, zinc and arsenic in chicken and beef liver available in the local market

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Intake of heavy metal contaminated meat items has been a major risk to human health. The concentrations of cadmium (Cd), Lead (Pb), Arsenic (As) and Zinc (Zn) in two different liver types chicken and beef collected from local market were analyzed using Flame Atomic Absorption Spectroscopy (Hitachi ZA 3000 Polarized Zeeman). Hydride generation method was used to determine Arsenic. Further the moisture contents of each brand of beef and chicken liver were also determined.

The average contents of metal levels detected in chicken liver ranged from (1.603 - 6.552), (0.839 - 3.173), (19.76 - 172.85) mg/kg for As, Cd, Zn, respectively. Lead was not detected in any of the chicken liver samples. For beef liver, the average contents of metal levels ranged from (1.87 - 2.53), (2.835 - 3.642), (50.952 - 100.47) mg/kg for As, Cd, Zn, respectively. Lead was not detected in any of the beef liver samples. In addition, the mean concentrations of metals in chicken liver and beef liver

were found in the order of their abundance as Zn > As > Cd and Zn > Cd > As, respectively. Pb was not detected in any of beef or chicken liver brands. Cadmium levels were exceeded more than the maximum permissible limits (defined by World Health Organization) in both chicken and beef liver samples. Zn levels were above the maximum permissible levels in chicken samples CD, CE, CF, in all the other samples the levels were below the permissible limit. In both chicken and beef liver samples As levels were above the maximum permissible limit.

This study concludes that consumption of chicken and beef liver for a long time may cause health effects in human beings.