

**Gastro - protective activities of *Alpinia calcarata* extracts in rats**L D A M Arawwawala<sup>1</sup>, L S R Arambewela<sup>1</sup> and W D Ratnasooriya<sup>2</sup><sup>1</sup>*Industrial Technology Institute, Bauddhaloka Mawatha, Colombo 7*<sup>2</sup>*Department of Zoology, University of Colombo, Colombo 3*

The aim of this study was to evaluate the gastro – protective effects of *A. calcarata* (family Zingiberaceae), hot water extract (HWE), hot ethanolic extract (HEE) and its mode of action in male albino rats. Eight groups (n=9 / group) of rats were treated with HWE, HEE, distilled water (DW) or PVP ( polyvinylpyrrolidone) in following manner. Group 1 (PVP, 500 mg/kg), 2 (1 mL of DW), 3, 4, 5 (500, 750 and 1000 mg/kg of HWE), 6, 7, 8 (500, 750 and 1000 mg/kg of HEE mg/kg). Rats fasted for 36 hours were divided randomly to separate groups and treated with appropriate doses as mentioned above. After 1 h of treatment, gastric lesions were induced using absolute ethanol. After a lapse of 1 h, the animals were sacrificed and their stomachs were removed and opened along the greater curvature and number of haemorrhagic lesions and their lengths were measured. The number and the length of the lesions per animal were calculated. To evaluate the mode of gastroprotective activity, the effect of *A.calcarata* HWE on volume and acidity of the gastric juice and mucous content of the stomach was also assessed.

The present study revealed that both HWE and HEE possessed significant ( $p \leq 0.05$ ) and dose dependent protection against gastric damage caused by absolute ethanol. Compared to the control, gastroprotective effect of HEE (in terms of reduction in length of gastric lesions; by 39%, 72% and 93% in 500, 750 and 1000 mg/kg) was slightly higher than that of HWE (by 23%, 62% and 90% in 500, 750 and 1000 mg/kg). Moreover, number of gastric lesions per rat also greatly reduced compared to the respective controls (HWE : by 27, 65 and 91% ; HEE: by 27,72 and 87% in 500, 750 and 1000 mg/kg). The stomachs of 11% and 56% of the rats treated with 750 mg/kg and 1000 mg/kg of HWE had neither lesions nor erythematous patches. This effect was further increased with HEE, where the stomachs of 33% and 56% of the rats treated with 750 mg/kg and 1000 mg/kg of HEE had neither lesions nor erythematous patches. Further, in the 4<sup>th</sup> h pylorus ligated rats, the accumulated gastric juice volume (by 41%), free acidity (by 49%) and total acidity (by 21%), significantly reduced and pH value (by 45%), increased in gastric juice of HWE treated rats compared to the control. However, neither bound acidity nor mucous content was significantly altered. Therefore, the gastro - protective action of *A.calcarata* may be due to its ability to reduce acidity in gastric juice.

*Financial assistance by NSF Grant No SIDA (1L ) 2000 / BT / 03 is acknowledged.*

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