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## Toxicological effects of cypermethrin and deltamethrin on rumen protozoa functions in buffalo (*Bubalus bubalis*) calves

Jagvinder Kaur and H.S. Sandhu<sup>1\*</sup>

Department of Animal Husbandry & Fisheries, Government of Punjab, Chandigarh

### Abstract

Repeated oral administration of cypermethrin (0.25 mg/kg/day) and deltamethrin (0.2 mg/kg/day) for 21 days produced significant increase in rumen liquor pH (14.8-14.9%). Both insecticides in daily doses produced significant decrease in the protozoal motility from vigorous (++++ to sluggish (+) and total protozoal count to the extent of 29.5% and 14.6% in buffalo calves, respectively. Population of *Holotrichs* spp. showed rise to the extent of 29.0% (cypermethrin) and 16.6% (deltamethrin) following administration of pyrethroid insecticides. The findings indicated that repeated oral administration of cypermethrin and deltamethrin has adverse effects on the number and type of rumen protozoa, which may affect the normal functioning of rumen protozoa in buffalo calves.

**Key Word:** Buffalo calves, Cypermethrin, Deltamethrin, Insecticides, Pyrethroid, Toxicity

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## Genotoxic effect of black RL and Green 6B dyes used in textile industries

Nupur Mathur\*, Pradeep Bhatnagar, T. Dhewa, T. Bose and S. Chug

Environmental Toxicology Unit, Department of Zoology, University of Rajasthan, Jaipur-302 004, India.

### Abstract

Sanganer town, district Jaipur (Rajasthan, India) is famous worldwide for its dyeing and printing industries. Two textile dyes from Sanganer (Rajasthan) were tested for their genotoxicity, using an *in-vitro* Ames assay. Results from this study showed that the dyes being used in textile industries at Sanganer can induce genotoxic responses and therefore should be used with great caution.

**Key words:** Dyes, Genotoxicity, Ames test, Chromosomal Aberration

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## Effects of dermal application of chromium and linear alkylbenzene sulphonate alone and in combination in guinea pigs

A. K. Mathur\*

Industrial Toxicology Research Centre, Post Box.No.80, Mahatma Gandhi Marg, Lucknow-226001, U.P. (India)

## Abstract

The effects of the dermal application of chromium (Cr), linear alkylbenzene sulphonate (LAS) alone and the combination of Cr + LAS for a period of 30 days on liver, kidney and skin have been investigated. Significantly increased activities of enzymes such as aspartate amino transferase, alanine amino transferase, acid phosphatase, alkaline phosphatase, gamma glutamyl transpeptidase and beta-glucuronidase occurred in the above tissues of exposed animals. Increased lipid peroxidation and decreased glutathione were also observed. The histamine contents in skin increased in Cr+LAS exposed group. Cr accumulated significantly in tissues. Shrunken hepatocytes, lobulisation and congestion of vacuoles in kidney and thickening of the stratum corneum of skin were observed. Biochemical and histopathological alterations and metal accumulation were more marked in the Cr+LAS exposed group.

**Key words:** Dermal, chromium, linear alkylbenzene sulphonate, enzymes, guinea pigs

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## ***In vivo* antimutagenic effect of *Semecarpus anacardium* against Mitomycin-C induced chromosome aberrations in mouse bone marrow cells**

**D. Prabhu\*, Laila S. Rajwani & P.V. Desai**

South Gujarat University, Surat, Gujarat

## Abstract

The antimutagenic effect of *Semecarpus anacardium* under *in vivo* condition is studied. Mice were intraperitoneally treated with 500 mg/kg and 250 mg/kg of *Semecarpus anacardium*. Both 500 and 250 mg/kg b.wt. of *Semecarpus anacardium* were pretreated at 3h, 6h, 12h and 24h before the treatment of mitomycin-C. The dose levels 500 and 250 mg/kg both showed a significant inhibition of induced aberrations at the 12h pretreatment period. The simultaneous treatment with mitomycin-C did not show a marked decrease in the number of aberrations, similarly, *Semecarpus anacardium* treated after 3h and 6h of mitomycin-C treatment also did not show a significant reduction. The results on the reduction of induced chromosome aberrations clearly show that *Semecarpus anacardium* serves as an antioxidant because of the presence of flavanoids which scavenge free radicals. The action of *Semecarpus anacardium* oil extract has definite beneficial role against mitomycin-C induced mutagenicity and its administration may be protective and therapeutic.

**Key words:** *Semecarpus anacardium*, antimutagenicity, chromosome aberrations, bone marrow

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## **Oral Toxicity of Lindane ( $\gamma$ -HCH) as a function of duration of exposure in rats : biochemical effects**

**Sudha Prasad and Giridhar Soni\***

Dept. of Biochemistry and chemistry

Punjab Agricultural University, Ludhiana 141004.

## Abstract

Toxicity of lindane ( $\gamma$ -HCH) upon sub acute exposure @ 500 mg/kg diet in rats, increased with increase in exposure period. Feed intake and body weight decreased gradually and significantly. Marked deleterious effects on liver were evident by increased activities of enzymes of liver function test such as AST, ALT, ALP and LDH. Osmotic fragility and lipid peroxidation increased in erythrocytes showing damage. Except catalase, other antioxidant enzymes studied showed decreased activities in erythrocytes. Lindane seemed to induce damage by free radical mediation, as lipid peroxidation in all the tissues was increased with increased duration of exposure. Antioxidant enzymes in tissues showed a mixed response , except in liver and kidneys where these were remarkably high.

**Key words:** Lindane, -HCH, Toxicity, Biochemical effects

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### ***In vitro* effect of papaya seed extract on erythrocytes**

**Deepa R. Nambiar and R.J. Verma\***

Department of Zoology, University School of Sciences,  
Gujarat University, Ahmedabad-380 009, India.

#### **Abstract**

A saline suspension of RBC when incubated with increasing concentrations (0.05 mg/ml-8.0 mg/ml) of aqueous papaya seed extract at 37°C for 6 hrs caused marked alterations in morphological characters of RBC followed by hemolysis. The effect was more pronounced with higher concentrations of extract than that of the lower. The result suggests extreme cytotoxic effect of extract on RBC leading to its lysis.

**Key words:** Carica papaya, RBC suspension, hemolysis.

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### ***Opinion* : Neem-Seed oil as termite repellent**

**Rakesh C. YashRoy\* and P.K. Gupta<sup>+</sup>**

\*Biophysics EM and I Section; <sup>+</sup>Pharmacology and Toxicology Division,  
Indian Veterinary Research Institute, Izatnagar, 243 122, India.

#### **Abstract**

Termite-attack may be averted with the application of fluidized (warmed) neem-seed oil by spraying, painting and pepitting/injecting infested crops, wooden furnishings and crevices, respectively