D-50 The effect of ICON (Lambda - cyhalothrin) on early gestation of rats

S S K Ratnayake, Y N A Jayatunga, W D Ratnasooriya
Dept of Zoology, University of Colombo, Colombo 3

The aim of this study was to examine the effects of ICON (Lambda - cyhalothrin), a recently introduced pyrethroid insecticide, to Sri Lanka, on the pregnancy outcome of rats when exposed during early pregnancy (day 1 - day 7 of pregnancy).

3 different doses of ICON (62.5, 83.3, 125 mg $kg^{-1}day^{-1}$) or water (vehicle) were orally administered for 7 consecutive days from day 1 of pregnancy. Several reproductive parameters were monitored and computed, on day 14 of pregnancy (via laparotomy) and following birth.

The results show that the mid- and the highest doses of ICON caused a significant reduction in number of uterine implants, number of pups born and an elevation in pre-implantation loss. The highest dose of ICON also caused significant reductions in quantal pregnancy, implantation index, gestation index, live birth index and litter index. In contrast, all the 3 doses of ICON caused a significant elevation in post-implantation loss. These anti-reproductive effects of ICON were dose-dependent ($r=0.982$, $p=0.086$). ICON was foetotoxic (revealed by Brine Shrimp Toxicity Assay) and was moderate to severe maternal toxic (as reflected by reduction in body weight, food and water intake, changes of fur colour, induction of diarrhoea, salivation , ataxia, convulsions, tremors, and changes in the differential counts of neutrophils and lymphocytes). The highest dose of ICON was neither oestrogenic nor anti-oestrogenic, but had moderate sedation action (revealed by rat hole board technique). It is concluded that ICON exposure during early gestation is detrimental to pregnancy, at least, in rats.