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Fetal growth retardation induced by flupyrazofos, a new organophosphorus insecticide, in rats.

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Flupyrazofos is a new type of pyrazole organophosporus insecticide, which has a high activity against the diamond-back moth (*Plutella xylostella*). The potential of this agent to induce developmental toxicity was investigated in the Sprague-Dawley rat. One hundred mated rats (sperm in vaginal lavage = day 0) were distributed among three treated groups and a control group. Flupyrazofos was at dose levels of 0, 5, 12, and 30 mg/kg/day administered by gavage to pregnant rats from day 7 to 17 of gestation. All dams were subjected to the caesarean section on day 20 of gestation and their fetuses were examined for external, visceral and skeletal abnormalities. At 30 mg/kg, maternal effects including mortality (4.3%), clinical signs of toxicity, decreased food intake, suppressed body weight, and increased weight of adrenal glands were observed in dams. Litter values for corpora lutea, implantations, sex ratio, and litter size were within the normal range. However, a reduction in the fetal weight and an increase in the incidence of fetal skeletal retardations were observed. In addition, a decrease in the number of ossification centers of metatarsals and sacrocaudal vertebra was seen. At 12 mg/kg, toxic effects including mortality (4.2%), nasal discharge, increased weights of adrenal glands, and fetal skeletal retardations were observed. There were no signs of either maternal toxicity or embryotoxicity at 5 mg/kg. The results show that flupyrazofos induces fetal growth retardation at maternally toxic dose in rats and no observed adverse effect levels (NOAELs) of this agent are considered to be 5 mg/kg for both dams and fetuses.