

## **Immunoregulatory response following fluranthene instillation in embryonated chicken eggs**

### **ABSTRACT**

The immunotoxic effect the air pollutant, fluranthene in chicken has never been documented. This study was undertaken to determine the possible immunotoxicity of fluoranthene in embryonated chicken eggs. Fifty 9-day-old embryonated chicken eggs were used in this study where 40 were each inoculated with fluoranthene at the dose of 15 mg/kg via the allantoic route. The remaining 10 eggs were inoculated with phosphate buffered saline (PBS) and acted as controls. All eggs were incubated at 37°C and candled every day for evidence of embryonic survival. Dead embryos (before 21 days old) were necropsied while the allantoic fluid and yolk collected for the determination of ND-HI titers. Chicks that hatched were sacrificed and blood was collected for ND-HI titer determination and lymphoid organs were procured for histopathology. Postmortem findings for fluoranthene inoculated embryos were stunted growth, generalized or localized hemorrhages especially at legs and head. Histopathologically, fluoranthene induced lymphoid hyperplasia in the thymus, spleen and bursa. Such change has led to an increase in antibody production compared to the controls. This study has provided evidence that fluoranthene may cross the egg barrier (in ovo) in avian species.

**Keyword:** Fluranthene; Embryonated eggs; Immunoregulation; ND-HI titer