

*Review Article*

## **LIVER HISTOPATHOLOGICAL ALTERATION IN *PSAMMOPHILUS BLANFORDANUS* INDUCED BY FURADAN**

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**Abstract:** It is found that distinct red spots appear on the surface of abdomen immediately after the treatment of Furadan orally to the *Psammophilus blanfordanus*. The colour of liver faded after 72h of the treatment in comparison to that of untreated *P. blanfordanus*. Distinct histological alterations are found in the section of liver of treated animal when observed under microscope.

**Keywords:** Furadan, *Psammophilus blanfordanus*, liver.

### **Introduction**

Carbofuran is a broad spectrum systemic insecticide that is registered for use on agricultural crops such as alfa alfa, rice, sugarcane, and especially corn (Palmer and Schlinke, 1973; EPA 1976; Finlayson *et al.*, 1979; Flickinger *et al.*, 1980). Carbofuran (2, 3-dihydro-2, 2-dimethyl-7 benzofuranyl methyl carbamate) is also known as Furadan. The present work was conducted to study histopathological effect of Furadan on liver of *Psammophilus*.

### **Materials and Methods**

#### ***Psammophilus blanfordanus***

*Psammophilus blanfordanus* can be distinguished by the regularly arranged scales, flattened body and the presence of a fold in the skin of throat. *Psammophilus* for the experiment were caught locally from North Orissa University, campus Baripada, Mayurbhanj, Odisha from the month of September 2010 to March 2011.

The lizards were kept inside the labeled plastic jars with small holes to allow air to pass into it. They were acclimatized for 7 days in laboratory condition before the experiment. The lizards were divided into two groups (i) control groups; and (ii) experimental groups.

#### **Control groups**

Three numbers of *Psammophilus* were treated orally with 100 µl of acetone and after 72 hours the *Psammophilus* were sacrificed and the liver was dissected out to 0.9% normal saline.

### Experimental group

Five numbers of *Psammophilus* were treated orally with 100 $\mu$ l of Furadan dissolved in acetone (0.005gm of Furadan per 1ml of acetone) and after 72 hrs the animals were sacrificed and the liver was dissected out to 0.9% normal saline. The blood vessels were cleaned.

### Processing of tissue

The liver (both from control and experimental) were fixed in Bouin's fluid and then processed for microtome sections. The thin sections were stained with eosin and haematoxylin and observed under microscope.

### Results and Discussion

It is found that a number of red spot appear on the skin surface near the abdomen, immediately after the treatment of Furadan on *Psammophilus* in experimental group (fig.1). The size of liver of experimental group was larger and colour was somewhat faded in comparison to the control group *Psammophilus* (fig.2).

It is found that T.S. of liver of controls *Psammophilus* showing normal shape of hepatic lobule with hepatic strands surrounding a blood vessel. Hepatic strands containing normal hepatocytes. (fig.3). However, T.S. of liver of treated *Psammophilus* showing severe destruction of normal histological structure of the hepatic tissue in the animals treated with 0.005 $\mu$ l of Furadan dissolved in 1ml of acetone and kept for 72 hours (fig4).



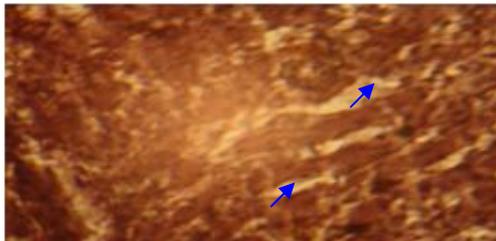
**Fig 1.** Red spot appear on skin after Furadan treatment



**Fig.2** Liver: without (C) and with (E) treatment of Furadan



**Fig 3.** T.S of liver of control group



**Fig 4.** T.S of liver of experimental group

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