# RESPIRATORY MOVEMENT IN A FRESH WATER TELEOST, RITA RITA (HAM.) EXPOSED TO FURADAN.

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**ABSTRACT.**

STUDY ON THE TOXIC EFFECT OF FURADAN ON OXYGEN UPTAKE IN RITA RITA (HAM.) HAVE BEEN MADE .O2AM.)UPTAKE IN CONTROL GROUP OF RITA RITA(HAM) WERE 109.O +_ 1.5 CC/KG/H .FURADAN INTOXICATION IN RITA RITA CAUSED SIGNIFICANT DECREASE (UPTO 35.I%) IN OXYGEN UPTAKE AS COMPARED TO CONTROL.

**Key word**; oxygen uptake, fish ,furadan intoxication

**Introduction**

Respiration is one of the most important physiological parameter on which many

Of the vital function like growth and reproduction of fish depend (o ARA1971). this in turn ,has a direct bearing on the productivity of fresh water ecosysteam in terms of fish reduced per unit area. One of the early symptoms of acute pesticide poisoning is the alteration of failure of respiration metabolism (HOLDEN 1973). Change in oxygen uptake of fishes in response to pesticide exposure are vary in different fishes exposed to a variety of pesticides. The effect of pesticies on oxygen uptake from water breathing fish has not been studied in siluroid fishes. As such the present work has been taken into account in a fresh water teleost, Rita rita (ham.).

**MATERIAL AND METHODS**

Live specimens of Rita rita (ham.) (40.0+_ 1.5g) ,collected locally was maintained in glass aquaria at 28.5 +_ 1.0 degree c and fed daily with pieces of goal liver. Feeding was stopped one day before the fishes were used in the experiment . This fish obtains o2 from water using both the gills and sinkin and from air using only skin when kept out of water.The TLm or Lc50 of furadan was determined at 28.5+_ 1.0 degree cent. Prior to any experiment. At this temperature the Lc50 value (24h) for furadan was 1.20 mg/l. Oxygen uptake of Rita rita was measured at sublethal concentration of furadan as recorded in table 1.The details of the methods employed in the determination of oxygen consumption with free access to air were those of munshi and dube (1973).who used a rectangular respirometer with provision of continuous water flow and a short air chamber over it. The concentration of dissolved o2 content

In water was measured using a manometer .the difference of significance,if any ,between control and furadan intoxicated fishwas calculated from students T-test at the level of 5%.

**RESULTS**

The data showing the effect of Furadan on total oxygen uptake (cc/kg/h) in Rita rita are summarized in table 1.A perusal of this table indicates that oxygen uptake in control group of rita rita were 109.o+_1.5 cc/kg/h. oxygen uptake in this fish decreased significantly to 32.1% and 22.o% after furdan intoxication as compared to contral.the toxic effect seem to be dose depandant. It was further observed that this fish secures about 31% oxygen from air when keoet out of water in moist condition .

**DISCUSSION**

THERE are mainly three group of pesticides namely – organochlorine

Organophosphate and carbamate which are used for selective killing of pests in a biological community . it is very interesting to notes that all the different group of pesticide or even the different biocides of the same group do not have the same effect on fishes. The mode andsite of action of different biocides also differ and there for .it is very difficult

To generalize the effect of different biocides in differ and therefore.it is very difficult to generalize the effect of different biocides in different species of fishes unless a detailed investigation is carried out.in the present investigation in Rita rita ,it has been found that furadan intoxication brought significant decrease in oxygen uptake as compared to control ,a view consistent with the findings of uthaman (1977) in colisa lalia, vasanthi and ramaswamy(1987) in sarotherodon mossambicus,velvan (1992) in channa punctatus.The exact reson of decrease in oxygen consumption in rita rita after the treatment of furdan in the present study could not be understood and it needs further investigation .how ever ,it may be considered as an adaptive mechanism to avoid the stress of pesticides in the aquatic media, a view consistent with the finding of chaturvedi (2007).

Table 1.

| S.n | condition | dose mg/l | o2 consumption(cc/kg/h) | %decrease in o2 uptake |
|---|---|---|---|---|
| 1 | control | --- | 109+_1.5 | -- |
| 2 | FURDAN | 0.96 | 74.0+_2.2 | 32.1 |
| 3 | FURDAN | 0.76 | 85.0+_2.2 | 22.0 |

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