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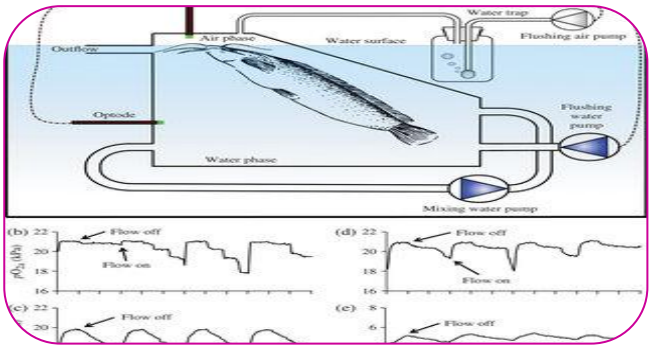

STUDY OF CHANGES IN BIMODAL OXYGEN OF OBLIGATE AIR BREATHING FISH: ANABAS TESTUDINEUS(BLOCH)

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ABSTRACT:

An animal life on Earth depends in this study on its ability to use oxygen and to extract dioxide from it. Breathing is one of the most significant physiological parameters on which many of its basic functions, such as fish growth and fish breeding, depend, which in turn has a direct effect in terms of fish production per unit area on the productivity of freshwater ecosystems.Everal water respiratory tests of fish species indicate that the toxicity with waterborne substances at low dissolved oxygen levels grows (Southgate et al. 1933, Downing 1954, Lloyd 1961, Pickering 1968, Hicks or Dewitt 1971, Smith or Oseid 1972, Voyer et al. 1975, Thurston et al. 1981, Gupta et al. 983 and Verma et al. 1985). Gupta et al. and Verma et al. (1983).

KEYWORDS: Bimodal Oxygen, Air Breathing Fish, Fish, Freshwater, ANABAS TESTUDINEUS(BLOCH), ANABAS TESTUDINEUS, BLOCH.

INTRODUCTION:-

In tropical countries, freshwater air breathing fish live in waters with low O2 levels, and in the summer or in the rainy season hypoxic waters or normoxic waters.The air breathing fish are fitted with two bimodal exchange devices using highly vascularized air breathing organs to combat the adverse ecological conditions of their environment in accordance with their physical chemical's characteristics. Their breathing fish have two modes of breathing.

The improvement in or failure of respiratory metabolism is one of the early signs of acute pesticide poisoning (Holden, 1973). In multiple fish exposed to a varied range of pesticides, shifts in the oxygen intake of fish as a result of the pesticide exposure are distinct (Karuppiah, 1996) [4]. In a number of aquatic breathing fish (Mount, 1962; Waiwood or Johansen, 1974; Vasanthi, 85) the effect from pesticides with oxygen intake is extensively studied [5, 6, 7].The researchers have however, estimated the changes in air breathing fish, such as Mystus vittatus (Gopalakrishna Reddy and Gomathy, 1977) [8] or Channa punctatus (Sambasiva Rao et al. 1984) [2], in only aquatic breathing changes.A reading of the literature reveals that only a few researchers have examined the impact of pesticides on water and air oxygen intakes by air-breathing fish (Bakthavathasalam, 1980, Natarajan, 1981; Ganapathyraman, 1987 or Karuppiah, 1996) [4], As such, consideration was given to present work in the mandatory air breathing fish, in order to fill the gap of our knowledge on that subject, Anabas testudineus (Bloch).The introduction or increase of environmental stress for marine species and fish in particular is evident. Many pesticides have delicate and insidious effects on fish. The more extreme long-term reduction in fish inventory is due to indirect

factors such as predation, disease and reproductive failure, unlike the direct eradication of the populations (for example fish kills).Anti-natural fish in any part of their lives may be made unable to do certain tasks that are required to carry out their life cycle; if fish are harmed by the presence of contaminants to defeat their natural stream, then they cannot go undistressed and leave no natural means to perpetuate the species (Waldichuk, 1974).

Support for such a shift in breathing mode to minimise toxin intake comes from anecdotal evidence that fish are exposed willingly to various types of toxins, including rotenoneCopper sulphate (Kulakkattolickal personal observations on Grass carp, Ctenopharyngodon idella, 1983) (Bhuyan 1968, Konar 1970, Hickling 1971, p. 95, Chakraborty et al. 1972, Davies and Shelton 1983, Tiexeira et al. 1984, Hegen1985).

In response to rotenone the surface activity of fish in natural water bodies has been used to sample wildfish populations (Shireman et al. 1981).Based on the findings of this analysis, the surface behaviour appears to be toxin-induced water-borne respiration (for water-breathing fish species) and then maybe air breathing (for air-breathing species of fish).This will lead to better ways of treating the respiratory toxin-induced actions of fish for the sample of wild fish populations if more research has proven this.

The fish of the maze, which belonged to the suborder Anabantoidei, are known as labyrinths on both sides of the head. The perch (Anabas) or the gouramy climb two well-known Asian Members of the party (Osphronemus).The steep climbing perch, Anabas testudineus (Bloch), also known as 'kabai' is a famous fish that breathes air or it lives in fresh water with brackish waters in southeastern Asia.The common name is the asian legend, that Anabas winds palm trees to suck juice. The common name is the perch. The root of this myth is possibly that if you go overlands, birds take Anabas or put it on the palm trees (Norman, 1975).

MATERIAL AND METHOD:

Based on the anecdotal and experimental studies already cited, I felt such a need to determine the importance of surface access on survival time of fish exposed to toxins. However the main objectives of this inquiry were to quantify:(1) the effect of waterborne poisoning (Croton tiglium seed extract) of dissolved oxygen levels on waterborne toxicity of Brachydanio rerio, zebrafish or Clarias macrocephalus,(2) the position of access to the surface as the changing toxicity factor at various levels with both species of dissolved oxygen, and (3) (3) the effects of toxin on Clarias macrocephalus air breathing rates.

The Anabas Testudineus (Bloch) is an air-breathing fish of the Anabantidae family that implements the order, also known as the climbing perch. It can be found in Indian estuaries or freshwaters. It is voracious carnivore or can leave the water for earthworm etc.It has an excellent flavour and is popular as food. This fish is exchanged with bimodal gas by removing 02 from water via gills and air from breathing accessories. A single pair of labyrinthine organs in a couple of superbranchial chambers are part of the respiratory organs.

Anabas testudineus live specimens were collected from local fish distributors of Saranor maintained with continuous water flow to large glass aquariums. During a minimum acclimation time of 7 days at laboratories, fish were fed with chopped goat liver every day.A closed glass respirometer containing 3 litre of water (initial content of O2: 6.5 mg O2/litre; pH 7.2) was used for regular intake of air or still water. The figure shows a one litre of air ss seen in the figure.

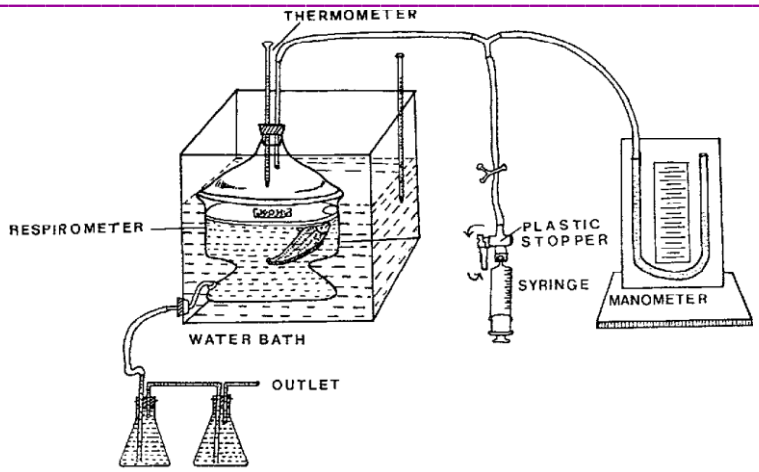

Figure 1: *Testudineus* is experimentally designed to measure bimodal O2 in *Anabas* (Bloch).

Carbosorb (B.D.H) or KOH in petrides placed on float absorbed Co2, so that through their gills and even by air, fish can exchange gases with water via a superbranchial chamber.The air step of respirometer was connected to a differential manometer. The fluid gauge movement accompanies oxygen absorption as "Carbosorb" (KOH) absorption of Co2. At least twelve hours before reading, the fish were acclimated to breathing metre. The volumetric method of Winkler measured the O2 dissolved level in water (Welch, 1948).Oxyden absorption from air was measured or determined using the combined gas and vapour pressure equations and the reported changes in the volume of the manometer (Dejours, 1975). Mean VO2 values from a number of observations were determined for each STPD fish or standard errors.Mean VO2 value for each STPD fish or standard mistakes have been determined for a series of observations. Tests have been performed at 29.0±1.50C. The pH was calculated by an electronic pH metre of the ambient water (systronics). Immersion in a temperature-controlled bath was thermostating in the air chambers.

DISCUSSION:

In tropical India various water bodies with different physical-chemical features are present. Different pool organisations, including gills, have been adapted to these water bodies.Owing to the existence of air breathing organs, bimodal breathers may live in hypoxic or hypercarbic swam water, and even contaminated waters, in addition to gills. However, for a lack of respiratory organs, certain bodies of water are not suitable for mandatory water respirations.

There are three primarily organochlorine insecticides. Organophosphate and carbamate used in a biological culture to selectively kill pests. It is very surprising to note that the effects on fish are not the same for all the different pesticides classes or even for different pesticides of the same group.The mode of action or the scope are different for different insecticides and thus, unless thorough investigation is carried out, it is very difficult to generalise the effects of different pesticides on fish.

A bimodal oxygen intake of control indicate findings from the current study show that the complicit air-borne fish, *Anabas testudineus* relies predominantly on aerial gas exchange with 54% of its total intake of oxygen via their air- breathing liver, while only 46% is supplied by air-breathing gills.Karuappiah (1996) in Channa striatus or Munshi et al. 1979) in C reported similar trends. Same trends.*marulius* (84.5%), *C. striatus* (67.7%), *C. gachua* (53 4%) and C. The contribution by aerial gas exchange was up between 62.70% in the present testudineus study following exposure to various metacid-50, Dithane M-45, and Keithane levels which is consistent with Karuppiah (1996)[4] and Pandey *et al.*punctatus (86.8%) findings (1999).

CONCLUSION:

A substantial reduction in the usage of both aquatic and full oxygen was noted after different concentrations of Metacid-50, Dithane-M-45 or Kelthanewere exposed in the current testudineus report,

which are consistent with Pandey *et al.*findings. In this study (1999).Although the exact cause of the reduction in O2 intake of this fish could be not understood, Chambers (1976) reported that organophosphate insecticide mode of action is irreversible acetylcholinesterase inhibition, with death from breathlessness due to respiratory paralysis of the breathing muscles normally attributed by vertebrate deaths.

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