

Toxic Effect of Aqueous Extract of Curry Leaves on Erythrocyte Sedimentation Rate in Fish, *Channa Punctatus*

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ABSTRACT

In the present investigation, the effect of sub-lethal concentration of Curry leaves aqueous extract on fish *Channa punctatus* was studied after 24 hrs, 48 hrs, 72 hrs and 96 hrs exposure. Different concentrations of Curry leaves (5ppm/ lit, 20ppm/lit) were used against erythrocyte sedimentation rate (ESR) and results showed the gradual increase in the ESR, ranging (7.22-8.00 mm\hrs) for 15 pm/lit for (24 hrs - 96 hrs) and (7.46-8.36/lit) for 20ppm/lit, respectively.

Keywords: Curry leaves, Erythrocyte Sedimentation rate, *Channa punctatus*.

I. INTRODUCTION

The presence of predatory and weed fishes in culture pond is a serious problem for culturing edible freshwater fishes in India. This has adversely affected the development of fish production and to solve this problem the use of synthetic pesticides is most common practice in many aquaculture farms. Due to their long-terms persistence in the water bodies and fish body, it adversely affects the quality of fish and their status leads the contamination of aquatic environment. In order to over these problems studies were being carried out on the feasibility of using bio-pesticides or plant extract. Now-a-days, use of medicinal plant is as effective alternatives for synthetic pesticides and fertilizers. In the present investigation, the toxicity of aqueous extract of Curry leaves has been observed on erythrocyte sedimentation rate (ESR)(mm\hr) in fish *Channa punctatus*.

II. EXPERIMENTAL ANIMAL

Healthy specimens of fish (*Channa punctatus*) were collected from the local fish market and were transferred into glass aquaria containing 25 lit. Of chlorine free water for acclimatization after dipping them into low concentration of potassium permanganate for a few seconds in order to check microbial infection. The determination of Lc50 was analyzed statistically by log dose/probit regression line method.

III. PREPARATION OF AQUEOUS CURRY LEAVES EXTRACTS

The leaves of Curry leaves (*Murraya koenigii*) were collected local market of Nanded city. Plant material was dried and grind. To prepare the aqueous extract, the powder was dissolved in water at a concentration for 5g per litre for 24 hours at room temperature. The mixture was filtered and the extract (5g/l) was used immediately in the experiments in different dilutions. Many significant changes were induced by the Curry leaves aqueous extract toxicity in the hematological parameters like erythrocyte sedimentation rate (ESR) of fish, *Channa punctatus* as show in Table 1.

The ESR (mm/hr) increase, in ESR (mm/hr) from 7.22 mm/hr to 8.00mm/hr for 24 hrs to 96 hrs, respectively was recorded in 15 ppm of Curry leaves aqueous extract concentration and similar increase in ESR (mm/hr) form 7.46 mm/hr to 8.36 mm/hr for 24 hrs to 96 hrs, respectively Table 1: ESR (mm/hr) in the blood of channa punctatus after Curry leaves aqueous extract treatment in different exposure periods.

Conc. in ppm	Control	24 hr.	48 hr.	72 hr.	96 hr.
15ppm	7.10-	7.22-	7.42-	7.74-	8.00-
	0.07	0.56	0.80	0.12	0.64
20ppm	7.10-	7.46-	7.74-	8.10-	8.36-
	0.09	0,15	0.45	0.88	0.28

Each reading is a mean of six observations +- S.D. ppm=parts per million.

was recorded in 20 ppm of Curry leaves aqueous extract concentration

(fig.1 and 2.)

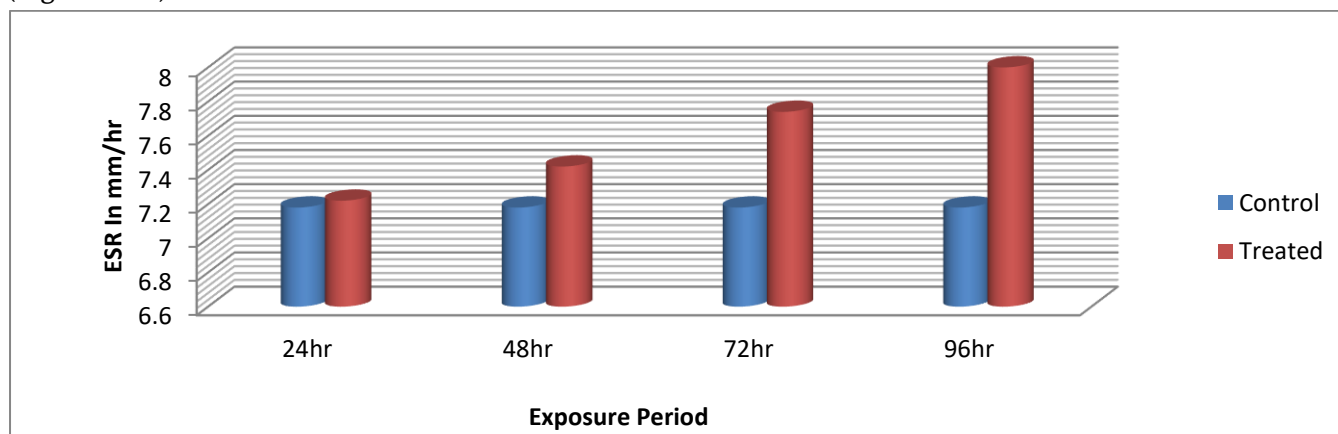


Fig.1 ESR in blood of *Channa punctatus* after exposure to Curry leaves aqueous extract at 15 ppm concentration.

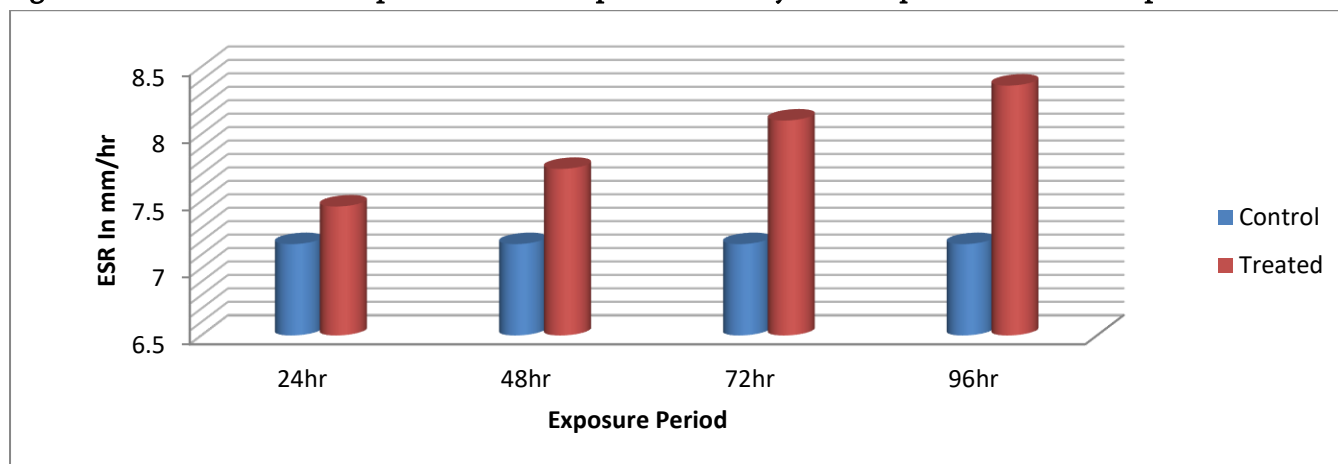


Fig. 2 ESR in blood of channa punctatus after exposure to Curry leaves aqueous extract at 20 ppm concentration.

An increase in the ESR (mm\hr) for both 15ppm and 20 ppm concentration was due to Curry leaves toxicity and exposure time. An increase in ESR (mm\hr) has been reported in channa punctatus after exposure to chlorpyrifos (Malla et. al., 2009) and in Clarius batrachus after exposure to seven (Kumar and Benerjee, 1990). An increase in ESR(mm\hr) may be due to increase in the concentration due to Curry leaves exposure or may be due to chemical compound like sulphur. Singh and Bhati (1991) also conducted study on the effect of zinc chloride on the morphology of blood in channa punctatus and in Heteropneustes foddills.

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