

(*Cyprinus carpio*)

()	/	()	/	(<i>Cyprinus carpio</i>)	°C	(OECD)
			/	LC ₅₀	.	/
/	/	/		LC ₅₀	/	/
			/		.	/
				(Very High Toxic)		

LC₅₀

(E-mail:issasharifpour@yahoo.com)

|| : || : -
-

Archive of SID

(.)

(.)

(.)

()

pH

(EC)

()

EC

pH

()

() °C	
()	pH
/ /	(EC)
/ /	
/ /	
	(HT)
/	
/ /	

(ppm)

(... / / / ppm)

()

()

...

(LC₅₀-96h)

()

() (OECD)

(static)

Probit Value

Quattro pro Spss

Y=a+bX

LC

a

Probit y (Slope)

b

LC₅₀

X Antilog

X

LC₅₀

LC

Archive of SID

/ - /

/ / / /

LC₅₀

() LC₅₀

-Lethal concentration
- Organisation Economic Cooperation and Development

LC₅₀

h	h	h	h	()
/	/	/	/	()
/	/	/	/	
/	/	/	/	

:

()

()

()

()

Archive of SID

(N)

(H)

(H&E, X100)

...

(N) (C) ()
(H&E, X400) (E)

Archive of SID

(N) (H)
(H&E, X100)

(N) (V)
(H&E, X250) ()

()

LC₅₀

(*Oreochromis mossambicus*)

/

/ / /

/ /

/ /

pH

(.)

(.)

...

()¹

LC₅₀

/ ppm (*Tilapia sp.*)

Na⁺/k⁺ ()

()

LC₅₀

(*Brachydanio rerio*)

(*Hyphessobrycon bifasciatus*)

LC₅₀

(*Striped bass*)

() ()

LC₅₀

(*Anguilla anguilla*)

()
LC₅₀

LC₅₀

/ ppm

()

« »

)

(

Daphnia

Malathion Diazinon Saturn Machete

magna

()

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A Study of Endosulfan Caused Lethal Effects as well as Histopathological Changes in Common Carp (*Cyprinus carpio*)

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Abstract

To evaluate the toxic effects of pesticide Endosulfan in fish, acute toxicity tests were carried out in valuing common carp (*Cyprinus carpio*) of 5-20 and 21-40 gr, using static water of 21°C and employing Organisation of Economic Cooperation and Development (O.E.C.D) method.

Mortality limits of 0.0002-0.0022 and 0.001-0.0046 mg/lit were found in fish of 5-20 gr and 21-40 gr, respectively. The LC₅₀ of 0.0061, 0.0029, 0.0016 and 0.0009 mg/lit were obtained in fish of 5-20 gr within 24, 48, 72 and 96 hours of post- challenge, respectively, while those in fish of 21-40 gr were 0.0079, 0.0053, 0.0035 and 0.0024 mg/lit, respectively.

The affected fish showed pale colour, irregular swimming behaviour, whirling and bottom sitting. Following a temporary recovery, fish showed sufferings of severe convulsion and respiratory disorder, resulting in death within a short time after challenge.

Histologically, there were hyperemia and inflammation of secondary lamellae in the fish challenged with lower doses of the pesticide whereas a general necrosis was observed when fish were in contact with higher doses. Similar histopathological changes were observed in the kidney and liver tissues.

According to the mortality limits and LC₅₀ (less than 0.1 mg/lit), this pesticide should be considered as a very highly toxic chemical for common carp, causing a rapid and accumulative mortality in fish.

Keywords: Endosulfan, Common carp (*Cyprinus carpio*), Toxicity, LC₅₀, Histopathology.

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