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FUNGICIDAL EFFECT ON FISH CULTURE

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A large volume of work on the synthesis and application of 5-Isoxazolone compounds have been reported [1, 2, 3]. Among the applications use as fungicides has been reported. In course of investigation it was seen that 3 methyl-4-(meta hydroxyl) benzilidine-5-Isoxazolone shows highest antifungal activity against pyricularia oryzae.

INTRODUCTION

Therefore it will be the common belief that the compounds will be very much useful with greater effect in cultivation, being utilized against fungi like pyricularia oryzae, a common hazard in cultivation. But before recommending it for a common use as fungicide extensive studies must be made for its other side effects acting against the qualities of products and by-products harvested from a cultivable land by a common farmer.

A common by-product from a cultivable land is fish; either cultivated by a farmer or not cultivated by a farmer. Therefore its effect on fish viz. toxic effect, effect on growth and duration of toxicity etc should be studied with greater care.

EXPERIMENTAL

6 litres of water was taken in each 13 tall jars of 10 litre capacity. In 13 jars 13 fishes of similar age and variety were allowed to remain for 2 days in natural condition for acclimatization.

While it was observed that the fishes survived in that condition 1 cc of solution of heterocyclic compound were added in 12 different concentrations to the 12 different jars, the other jar being left as a control of the experiment.

Thus, 12 fishes were allowed to remain with a solution of the heterocyclic compound having 12 different concentrations. Thus the 13^{th} one being left in natural condition as a control of the experiment.

Sl. No.	Name of the compound	Lethal dose in ppm	Dissolved oxygen in ppm	Remark
1.	Isooxazolone of Benzaldehyde	20	4.1	After 5 minutes they were in distress. After 20 minutes died. After 2 days another fish was introduced into the jar. It remained normal
2.	Isooxazolone of o-OH Benaldehyde	15	2.9	
3.	Isooxazolone of m-OH Benzaldehyde	10	3.5	
4.	Isooxazolone of p-OH Benzaldehyde	10	3.7	
5.	Isooxazolone of 2-4-Dihydroxy Benzaldehyde	78	3.7	
6.	Isooxazolone of o-NO_2 Bezaldehyde	48	2.75	
7.	Isooxazolone of m-NO_2 Benzaldehyde	35	3.8	
8.	Isooxazolone of p-NO_2 Benzaldehyde	50	3.9	
9.	Isooxazolone of 2-4-Dichloro Benzaldehyde	130	3.2	
10.	Isooxazolone of p-methoxy Benzaldehyde	60	3.2	
11.	Isooxazolone of 4-hydroxy-3-methoxy Benzaldehyde	100	2.6	
12.	Isooxazolone of 2-3-Dimethoxy Benzaldehyde	130	3.56	Ran to and fro. After 1 hour they came to normal.
13.	Isoxazolone of Cinnanaldehyde	10	3.1	After 15 minutes it was in distress. After 1 hour died.
14.	Isoxazolone of Camphor	20	2.6	Died after 4 hours. Eyes came outside.
15.	Isoxazolone of Rotenone	30	2.0	Died after 15 minutes
16.	Oxime of Rotenone	5	0.8	Ran very fast. Released air bubbles after 15 minutes. After 3 days another fish was introduced. It died.
17.	Rotenone	2	0.85	Died after 5 Hours
18.	Oxime of Camphor	10	2.8	Immediate to and fro movement was marked. After 80 minutes died. Eyes came outside.
19.	Phenyl Isooxazolone	20	1.2	Very fast movement. Died after 15 minutes. The upper part of the body remained expanded.

Conclusion

It is concluded that Isooaolones are very much toxic to fish. So it cannot be cultivated near a cultivative land.

References

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3. Misra, Suchitra, *Ph.D. thesis*, Utkal University (2013).

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