

Chapter-7



7. Conclusion

Fluorosis is an endemic problem in several developing countries and has become a global health issue. Higher concentration of fluoride is toxic to fresh water fishes because of its accumulation in fish skin. It causes retardation in fish growth, disturbances to blood composition and protein metabolism and impairs production and development of the life stages of fish.

Fluorides may be taken up from soil and be accumulated in plants or they may be deposited on the upper parts of the plants in dust. Animals that eat fluoride-containing plants may accumulate fluoride in their body and causes skeletal and dental fluorosis.

The present research work was carried out with the intention of providing an effective remedial measure to control the toxic effects encountered by fluoride in fish and rat. The findings of the present study indicate that the Probiotic bacteria *L. rhamnosus* has marked capacity to cope with the toxicity of fluoride in fish and rat.

Thus the microflora of *L. rhamnosus* plays a very important role in protection against fluoride toxicity.

Probiotic microorganisms provide specific health benefits when consumed as a food component or supplement. Probiotics fortify the body by creating better absorption of nutrients including provision of complex B vitamins particularly B6 needed for stress management in the body.

However, knowledge of how probiotics may function as prophylactic agents in the host gastrointestinal (GI) tract is largely conjecture at present and the study of precise mode of action of probiotics is the scope of future research.

Since the health of the host improves when its gut contains a diverse microflora, using a single-species of probiotic bacteria may not be as efficient as using a group of

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representative bacteria. Now a common tool, genetic engineering will allow us to create probiotics which are capable of faster growth, better attachment and production of a variety of beneficial compounds.

Thus, through the collaboration between laboratory studies and experiments basic research can contribute to the development of many Probiotic strains to combat with the toxic effects of fluoride in both fish and rat.