

CHAPTER 17

ENVIRONMENTAL BIOLOGY

Doctoral Theses

171. MAHENDIRAN MYLSWAMY
Comparative Field Study on the Ecology of Cormorants in the Delhi Region.
Supervisor : Dr. A. J. Urfi
Th 16549

Abstract

Understands the role of aquatic birds in the structure and dynamics of food webs in fresh water wetlands by a critical examination of the linkage between fish and their avian predator. Describes document and test the hypothesis on the habitat selection, prey size selection and foraging behaviour of cormorants. Focuses on the status and foraging ecology of near threatened oriental darter anhing melanogaster in the Delhi region.

Contents

1. Introduction. 2. Literature review. 3. Status and distribution of cormorants in the Delhi region. 4. Comparative foraging ecology of cormorants in the Delhi region. 5. Status and distribution of oriental darter anhing melanogaster in the Delhi region. 6. Conclusions and recommendations for conservation. Bibliography.

172. TYAGI (Anuripriya)
Effective use of Hydrophytes for Remediating Water Bodies Contaminated with Copper and Nickel.
Supervisor : Prof. Rup Lal
Th 16329

Abstract

Evaluates the suitability of different aquatic plant species to remediate industrial effluent loaded with high levels of copper

and nickel. Different aquatic plant species viz. *Salvinia natans* (a free floating hydrophyte), *Spirodela polyrrhiza* (a free floating hydrophyte), *Azolla pinnata* (a free floating hydrophyte), *Hydrilla verticillata* (a rooted and submerged hydrophyte) and *Paspalum paspalodes* (a semi aquatic plant species) are screened for their ability to accumulate copper and nickel from different concentration of industrial effluent. Among all the aquatic plant species studied *Salvinia natans* showed highest accumulation of copper and a moderately high accumulation of nickel. The accumulation of copper and nickel is then studied under presence of soil to evaluate relative contribution of plants (*Salvinia natans*) to the removal of dissolved copper and nickel from the effluent. It is found that repeated replenishes of the industrial effluent with *Salvinia natans* resulted in removal of significant amount of copper and nickel, a major proportion being removed due to plant uptake. Consequently, *Salvinia natans* is found to be suitable candidate for remediation of industrial effluent.

Contents

1. Introduction. 2. Review of Literature. 3. Materials and methods. 4. Results. 5. Discussion. 6. Summary and conclusions. Bibliography.

173. VIJAYALATHA (V.)
Structural and Functional Characterization of Carotenoid from *Dietzia* sp. K44.
 Supervisors : Prof. Rup Lal and Dr. Rakha H. Das
Th 16328

Abstract

Describes isolation of pigmented bacterium from high altitude soil ; Clarification of taxonomic position of the isolated pigmented bacterium ; Large scale cultivation of bacterium for isolation of carotenoids ; Purification and elucidation of the structure of the major pigment ; Antioxidant activities of the major pigment ; and Apoptotic potential of the major pigment.

Contents

1. Review of literature. 2. Materials and methods. 3. Isolation of *Dietzia* sp K44 from soil and its characterization. 4. Functional characterization of canthaxanthin isomers from *Dietzia* sp. K44. 6. Summary and conclusion. Bibliography and appendix.