

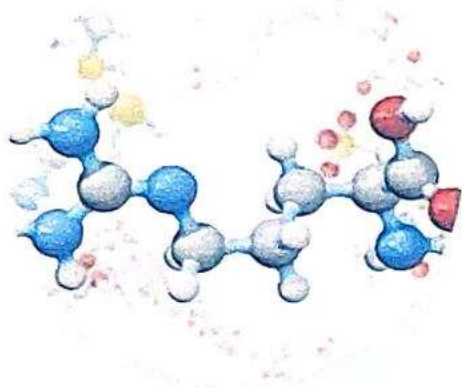
ISBN: 978-93-95847-24-7

EMERGING TRENDS IN BIOCHEMISTRY VOLUME I

Editors:

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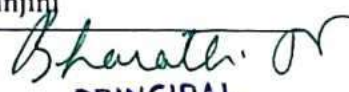
BHUMI PUBLISHING
FIRST EDITION: 2024

Bharath N
PRINCIPAL
MMK & SDM Mahila Mahavidyalaya
Krishnamurthypuram, Mysore-570 004



TABLE OF CONTENT

Sr. No.	Chapter and Author(s)	Page No.
1	PHARMACOLOGICAL BIOACTIVE COMPOUNDS AND THERAPEUTIC POTENTIAL OF VARIOUS MEDICINAL PLANTS SPECIES Sasikala Saminathan, Padmini Ramachandran and Charumathy Marimuthu	1 – 8
2	PHYCOREMEDIATION OF HEAVY METALS IN CONTAMINATED WATER: FACTORS AND PROCESSES Raju Potharaju and M. Aruna	9 – 20
3	EFFECT OF HIGHER CONCENTRATION AQUEOUS EXTRACTS OF ENTEROMORPHA FLEXUSA ON GERMINATION AND SEEDLING GROWTH OF TEST PLANT RAPHANUS SATIVUS VAR. JAPANI LONG WHITE Sunita Gaikwad	21 – 23
4	APPLICATION OF NANOMATERIALS AS BIOSENSORS Mohnish Idpache and Swati Singh	24 – 33
5	SCREENING OF <i>GMELENA ASIATICA</i> L. LEAF EXTRACTS FOR ANTIOXIDANT AND PHYTOCHEMICAL PROPERTIES Rajanna L., G S Shailaja Sharma and Malati M Bengeri	34 – 44
6	ECO -FRIENDLY FARMING: TRADITIONAL AND CHEMICAL FREE FRAMING B. S. Sujatha	45 – 49
7	UNRAVELING THE CRISPR-CAS9 PARADIGM Madhuri Pawar	50 – 55
8	GC-MS PHYTOCHEMICAL PROFILING OF ISHWARI (<i>ARISTOLOCHIA INDICA</i> LINN & <i>ARISTOLOCHIA TAGALA</i> CHAM.) LEAF EXTRACTS G. S. Shailaja Sharma and L. Rajanna	56 – 64
9	WASTE MANAGEMENT: EFFECT OF DISTILLERY EFFLUENT ON MORPHOLOGICAL PARAMETERS OF CROP PLANTS Parvathi GR and Chaitramallu M	65 – 70
10	ANTI-DIABETIC ACTIVITY OF SYNTHETIC ARYL TETALIN DERIVATIVES Chaitramallu M., Parvathi GR, B S Sujatha, G. S. Shailaja Sharma, R., Devaraju Kesagodu and Ranjini	71 – 81


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Chapter
9

WASTE MANAGEMENT: EFFECT OF DISTILLERY EFFLUENT ON
MORPHOLOGICAL PARAMETERS OF CROP PLANTS

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ABSTRACT

In the present work was aimed at analyzing the effect of distillery effluent on morphological parameters. Maximum percentage of germination was found in lower effluent concentration, and it was found to be reduced as the concentration of the effluent increased. The root and shoot length, fresh and dry weight, vigour index and tolerance index, was maximum in lower effluent concentration and it was significantly decreased in higher effluent concentrations, when compared to control. Seeds treated with lower effluent concentration did not show phytotoxicity, however higher effluent concentration treatments showed toxic effects on seeds. Seed germination and seedling growth were hindered by higher effluent concentration. If the effluent is diluted to optimum level, it can be used to irrigate agricultural fields.

KEYWORDS: Distillery effluent, seed germination, seedling growth.

INTRODUCTION

Waste Management is one of the most important environmental problems faced by the world, now a day's emphasis is laid on waste minimization and revenue generation through product recovery. Pollution prevention focuses on preventing the generation of wastes, while waste minimization refers to reducing the volume or toxicity of hazardous wastes by water recycling and reuse (Goel). Different industries generate variety of waste water pollutants. Characteristics of waste water and pollutants levels significantly vary from industry to industry (Kuntal *et al.*, 2004).

Distillery industry is one of the major Argo-based industries in India that plays a major role in Environment Pollution. Central Pollution Control Board (CPCB) of India has listed around 17 high polluting industries among which distilleries are one (Uppal2004). There are about 330 distilleries in India with an installed capacity of 3500 million liters (L) of alcohol production per annum. About 12- 15 L of wastewater is produced per L of alcohol production. In our country per annum approximately 40 billion liters of effluent is generated from 330 distilleries Chonkeret *et al.*, (2000), AIDA (2004) and Hati *et al.*, (2007). In Karnataka there are 39 distilleries

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