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NH-52, Chandigarh Road, Hisar (Hry.)  
Contact No. 86078-99999, 82550-99999  
Website : [www.osgu.ac.in](http://www.osgu.ac.in)  
Email : [info@osgu.ac.in](mailto:info@osgu.ac.in)

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## RECENT TRENDS IN APPLIED MATHEMATICS

Nidhi Agarwal, Research Scholar, Department of Mathematics  
School of Applied Sciences, Om Sterling Global University Hisar

### Abstract:

The intention of this paper is to study the recent trends in present-day mathematics and role of mathematics in other disciplines. The paper is in five parts. Section one is Introduction. Section two is dealing with trends of application areas of mathematics at the wake of the twentieth century, Section three looks at the changes in mathematics application as a result of the modern approach to mathematics and discoveries in other fields, section four addresses the current thinking of collaborative and interdisciplinary mathematics and the section five gives some examples of application areas where mathematics is emerging as a vital component with great opportunities for inter discipline research.

**Keywords:** Trend in Mathematics, Mathematical Research Activity, Inter-Discipline Mathematics, New Areas of Application.

## EXTRACTING AND ANALYSING FUNGAL STRAINS FROM SOIL CONTAMINATED WITH PESTICIDES

Rimple Khicher, Research Scholar, Ikbal, Neeraj Sheti

Department of Biotechnology, Om Sterling Global University, Hisar, Haryana

### Abstract:

Fungus diversity in Hisar pesticide fields was evaluated in this investigation. From numerous Hisar District fields, 20 soil samples were gathered four times. Samples from different zones were grown on Potato Dextrose Agar (PDA). Penicillin and Streptomycin were added to the medium by soil dilution and plate. Different isolation and identification procedures were employed to extract 54 fungal colonies to characterize 19 fungi (14 recognized and 5 undetermined). Physiochemical properties of soil samples were also examined. Seven genera make up agricultural soil filamentous fungus Ascomycota. Both Zygomycota and Deuteromycota contain one genus. Aspergillus, Fusarium, Ulocladium, Rhizopus, Humicola, Exserohilum, Drechslera, Curvularia, and Alternaria were isolated. The principal genera were Rhizopus, Aspergillus, and Curvularia. The mycoflora percentile contribution was statistically examined.

**Keywords:** Agriculture soil, Fungus, Biodiversity, Zygomycota

## MOSQUITO REPELLANT PROPENSITY OF LEMONGRASS EMUGEL

<sup>1</sup>Alfa John<sup>1</sup>Adesola Omoshalewa M, <sup>1</sup>Okeke Chukwunwike I, <sup>2</sup>Ogira, Johnson O. and <sup>1</sup>Ariahu EC

<sup>1</sup>Department of Pharmaceutics and Pharmaceutical Technology, Faculty of Pharmaceutical Sciences, Bingham University, KaruNasarawa State Nigeria.

<sup>2</sup>Department of Pharmaceutical and Medicinal Chemistry, Faculty of Pharmaceutical Sciences, Bingham University, KaruNasarawa State Nigeria.

### Abstract:

**Background:** The use of mosquito repellants seats amongst the strategies for malaria eradication program but the predominantly available ones are synthetic with some risk of toxicity or side effects. This investigation is aimed at deriving mosquito repellent from less risky natural source; lemongrass. **Methods:** Lemon grass extract was obtained using n-hexane in soxhlet apparatus. The extract was formulated as lemongrass extract emugel (LGEM) 1 and 2 % w/w. Organoleptic properties, spreadability, pH, skin irritation test and the mosquito repellent effects of the emugel were evaluated. The percentage repellency (R) and complete protection time (CPT) were determined and compared with N,N-diethyl-meta-toluamide (DEET). **Results:** LGEM 1 & 2 % w/w exhibited good spreadability, had pH in the range of 5.3 – 8, and was non-irritant to the skin. Mosquito repellency, R was concentration dependent, above 83 % in LGEM 2%. The CPT was 5h and 8h for LGEM and DEET respectively. **Conclusion:** LGEM is potential substitute to DEET for topical application as mosquito repellent. Improving gel stability might prolong CPT and repellent efficiency. Further study is under way and would constitute separate report.

**Keywords:** lemongrass extract, mosquito, repellent, emugel, DEET