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The Effect of Yogic Practices on Post Graduate Students in Relation to Psychological Parameter	O. P. 40
Morphometric Study of Pyramidalis Muscle and its Role in Reconstructive Surgeries: A Cadaveric Study	O. P. 41
A Multicomponent Polyvinyl Alcohol-Sericin-Tannic Acid Bioactive Hydrogel as a Potent Wound Dressing	O. P. 42
Green Synthesised Cobalt Ferrite Nanoparticles Ameliorates Sodium Nitrite Induced Oxidative Stress	O. P. 43
Gene Expression, Purification and Characterization of Subtilisin with Potential Healthcare Applications	O. P. 44
Role of CD200 Isoforms in TNF- $\alpha$ Mediated Immunoregulation	O. P. 45
Biocompatibility of Hydrophilic Regenerated <i>Antheraea mylitta</i> Silk Fibroin	O. P. 46
Antioxidant and Hepato-Renal Protective Effects of Red and White Onion Bulb Extract on Albino Wistar Rats	O. P. 47
Tyrosine Kinase Inhibitor in Combination with PPAR- Agonist: Directing Metabolic Dysfunction	O. P. 48
Morphometric Analysis of Main Sulci of Brain with Its Clinical Implications - A Cadaveric Study	O. P. 49
Evaluation of Prescribing Pattern of Chemotherapy Drugs, Monitoring and Reporting of Adverse Drug Reaction in Patients Undergoing Chemotherapy for Various Types of Cancers at Tertiary Care Hospital	O. P. 50
Evaluation of Antimicrobial Activity of <i>Scylla serrata</i> Hemolymph Against ESKAPE Organisms Isolated from the Clinical Sample	O. P. 51
A Symbiotic Approach of Health Informatics, Allopathy and Traditional Medicine in Effective Health Care	O. P. 52
Production, Optimization and Characterization of Antibacterial Fluorescent Green Pigment from Endophytic Bacteria	O. P. 53
Molecular Identification of Endophytic Bacteria from Grasses in Kodagu District, Karnataka State, India and Reviewing its Antagonistic Potential	O. P. 54
Digital Framework for Lung Cancer Detection Using CT Imaging In Matlab Applications	O. P. 55
Prevalence of Leptospirosis among Suspected Pyrexia of Unknown Origin Cases in Dakshina Kannada District, Karnataka, India in the Year 2022	O. P. 56
Biomimetic Hydroxyapatite Coating on Titanium (Commercial Pure) for Biomedical Applications	O. P. 57
Effect of Hibiscus Leaves on Lactofermentation of Dosa Batter	O. P. 58
Fourier Transform Infrared Spectroscopy- A Novel Tool for Neurodegenerative Studies	O. P. 59



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## Effect of Hibiscus Leaves on Lactofermentation of Dosa Batter

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### Abstract:

**Background:** Dosa prepared using Hibiscus leaves is one of the traditional cuisines of coastal regions of Karnataka state, India. It has distinct and favourable flavour and consumed for its health benefits. The objective of the study was to identify the effect of the hibiscus leaves on lactofermentation of dosa batter and on the nutritional value.

**Methodology:** Two sets of raw rice, urad dal and fenugreek seeds in 1:0.25:0.05 ratio were soaked for 8 hours and ground upto dosa consistency. One set was Control sample which contained the above ingredients only. The Test sample included hibiscus leaves in 10% proportion during the grinding process. Both the samples were incubated for 12 h at 37°C. After fermentation, the samples were serially diluted and dilution from  $10^{-8}$  to  $10^{-10}$  were pour- plated in MRS Agar media. After incubation of 24h at 37°C, the colony characteristics and colony count was analysed for both samples. The bacteria were subcultured to obtain pure cultures and subjected to biochemical analysis. The strain having circular-transparent colony characteristics was sequenced and the gene sequence data is uploaded in GenBank, NCBI. The dosas prepared from test and control batter samples were subjected to proximate analysis and phytochemical screening.

**Results:** Both sample cultures showed bacteria colonies having circular-transparent, punctiform-opaque, spindle-opaque and irregular- translucent colony characteristics. The biochemical analysis indicated that the cultures were lactic acid bacteria, and gene sequence analysis confirmed it to be *Pediococcus pentosaceus*. Test samples showed higher total ash, total sugar, total protein, phosphorous and vitamin C content to Control sample, while the control sample showed higher iron content than Test sample. Phytochemical screening of ethyl acetate, ethanol and aqueous extracts of dosa showed that phenolics and phaeophytin were present.

**Conclusions:** The hibiscus leaves didn't inhibit the microaerophilic LABs in dosa and enhanced the nutritive values.

### Keywords:

*Lactic acid bacteria, Proximate analysis, Phytochemical screening, Nutritive value of dosa, Hibiscus leaves*

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