

Abstract Proceedings
of
NATIONAL LEVEL CONFERENCE ON RESEARCH WITH INNOVATIVE
IDEAS IN PHARMACEUTICAL EDUCATION, HEALTH CARE & LIFE
SCIENCES
(NLCRIPEHCLS-2017)

Date: 4th February 2017

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Former Head Department of Botany,
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CONVENER

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MESSAGE



“Time moves slowly but passes quickly, Life is a onetime offer use it well”

I am honored and delighted to welcome you to the **“National Level Conference on Research with Innovative Ideas in Pharmaceutical Education, Health Care & Life Sciences (NLCRIPEHCLS-2017)”**

National Level Conference on Research with Innovative Ideas in Pharmaceutical Education, Health Care & Life Sciences (NLCRIPEHCLS-2017) - aims to capitalize on the rapid growing field of technology in pharmaceutical, Health Care and Life Sciences providing an interdisciplinary forum for scientists, researchers, engineers, technologists and industrialists of this field and to exchange information on the recent developments. The conference covers broad theme on this area to accommodate wide range of interests and to facilitate interdisciplinary collaboration/interaction in both academia and industry. The conference will also provide an ideal environment to develop new collaborations and opportunities to meet the experts working on various areas of Chemical, Pharmaceutical, Health Care & Life Sciences. Moreover, NLCRIPEHCLS-2017 will provide an international forum for the exchange of technical information through plenary lectures, invited talks, presentations by researchers and scientists.

Dr. SUBHASH SADHU DEOKULE

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Anurag Group of Institutions

(Formerly CVSR College of Engineering)

(Formerly Lalitha College of Pharmacy)

(An Autonomous Institution)

Accredited by NBA, Approved by AICTE, PCI, New Delhi And Permanently Affiliated to JNTU, Hyderabad

Dr B Vasudha
Principal and Professor
Anurag Group of Institutions
(Formerly Lalitha college of
Pharmacy)



MESSAGE

Dear Delegates


Warm wishes from Anurag Group of Institutions (Formerly Lalitha college of Pharmacy)

I am happy to hear that Anveshana Educational and Research Foundation is organizing a National Level Conference on Research with Innovative Ideas in Pharmaceutical Education Health Care and Life Sciences on 4th February 2017 in association with Shri JNTU University Jhunjhunu.

The Conference provides an open forum for the academicians, technologists and industrialists to exchange their ideas, and foster interactive research among the participants. It will facilitate congregation of the minds from academics and industries benefiting the students, faculty members and scientists from industry.

I sincerely hope that the participants will have meaningful learning experience from the experts.

I wish conference a grand success.


Dr B Vasudha
Principal and Professor

Venkatapur (V), Chalkeras (M), Ranga Reddy (Dist), T.S. 500 088 Ph:08415-255309/011,84999 53666, 84999 63666 Fax: 08415 255311 email:info@cvsr.ac.in www.cvsr.ac.in

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Green Evolution Laboratories



Dr. RAM BHAVANI
Director
Green Evolution Laboratories



MESSAGE

It gives me immense pleasure to note that the Anveshana Educational and Research Foundation (in association with Shri JY University, Jmmjhumu) is organizing One Day National Level Conference "Research with Innovative Ideas in Pharmaceutical Education, Health Care & Life Sciences (NLCRIPEHCLS 2017 " on 4th February 2017.

I am sure that conference will bring together pharmacy, health care and life sciences professionals on to single platform and definitely come out with fruitful deliberations which will be in the broader interest of the nation.

I wish the organizers of the event a big success of Anveshana Educational and Research Foundation.

Ram Bhavani

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MESSAGE



“Difficult Roads often lead to beautiful destination”

I am very happy that Anveshana Educational and Research Foundation (AERF) organizing a **“National Level Conference on Research with Innovative Ideas in Pharmaceutical Education, Health Care & Life Sciences (NLCRIPEHCLS-2017)”** and that a souvenir is being publish on this occasion.

The Theme chosen for the conference is of topical interest. This conference provides platform to various scholars and professors to exchange new ideas, application experiences and also to establish business or research relations and to find global partners for future collaboration.

I take this opportunity to congratulate the Principal, teachers, and supporting staff and students for their achievements and wish them all success in their future endeavors.

I Congratulate the Organizers for providing a platform for this interaction through this Conference.

I wish the Conference a great Success.

Dr. DIGAMBAR NABHU MOKAT
Assistant Professor, Dept of Botany,
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MESSAGE

I am happy to know that the Anveshana Educational and Research Foundation is organizing a **“National Level Conference on Research with Innovative Ideas in Pharmaceutical Education, Health Care & Life Sciences (NLCRIPEHCLS-2017)”** on 4th Feb-2017.

The recent developments in the pharmaceutical education, health care and life science are quite encouraging and contributing technologies to mitigate the sufferings of people of developing Nations alike. I am particularly happy to note that the conference also deals with global aspects of this rapidly advancing field. The conference brings new and innovative ideas in the field of pharmaceutical, health and life science. I am quite confident that the deliberations in the National conference will address these aspects and help the scholars students and the staff of this and allied departments in understanding the latest developments and design their research programmes in years to come.



Dr. BYLLA PRASAD

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MESSAGE



University College of Science
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DR. B. RAJANI
HEAD
DEPARTMENT OF BOTANY

MESSAGE

I am glad to know that Anveshana Educational and Research Foundation is organizing a “National Level Conference on Competitive Research with Innovative Ideas in Pharmacy, Health and Life Sciences” on 4th February, 2017. I take this opportunity to congratulate the relentless efforts of the foundation to bring current aspects of research on to one platform by organizing seminars, conferences and workshops.

The current conference is about ongoing research in the field of Pharmacy and Life Sciences for disseminating knowledge to industrialists and healthcare professionals. Thus, bridging a gap between the latest technologies and their application. Analysis of recent data and information on current research will be of great help to the scientific community. The theme of the conference evokes the necessity for integrated knowledge of various fields of Biology for innovative ideas and pioneer research. I am confident that the conference will be of immense help to research scholars, pharmacist, healthcare professionals and academicians.

I wish the organizers and the participants all the success.

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MESSAGE

On behalf of Anveshana Educational and Research Foundation, I am Glad to welcome you to the “**National Level Conference on Research with Innovative Ideas in Pharmaceutical Education, Health Care & Life Sciences (NLCRIPEHCLS-2017)**”, being organized by Anveshana Educational and Research Foundation (AERF) continues the Traditions of Addressing issues of immediate and long term interest to researchers through technological innovations.

The aim of the **NLCRIPEHCLS-2017** has always been to provide an international forum for individuals from all over the world. I would like to thanks to all authors for their outstanding Contributions and in particular the members of the Organizing and Advisory Board for their extreme support for making the conference a Grand Success.

Dr. S. CHAKRADHAR GOUD
Principal
Sana Engineering College, Kodad

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CONVENER'S REPORT



Anveshana Educational Research Foundation was started in 2013 as a Non-profit Organization. This Foundation has a broad vision and an approach to supporting strategic, whole of community to educate in order to make real, long term improvements in High School level to Higher Education level students to make sure that the research outcomes to meet their educational potential. The Foundation supports world class research activities, and creates an internationally competitive research environment and innovation system to achieve goals.

The AERF through its members, associates and collaborators actively involved in research in many domains such as Engineering, Applied Sciences, Management practices, Business research, Education, Literature, Information systems, Psychology, Law, Journalism, Social Sciences, Medical ,Health, Pharmacy, Drug development sciences, Life sciences, Animal Sciences Regional and Multi-disciplinary studies and research activities. AERF has projects from different Industrial and Educational organizations.

The AERF organizes such as Training, Faculty Development programs, Entrepreneur Development Programs, Various Technical Workshops, Industrial visits, Research programs, projects, publications, conferences and consultancy. The AERF was set up with a commitment to pursue excellence in research and to build capacities in Educational and Industrial research across globe.

On behalf of organizing committee, it is great privilege to me welcome you all too National conference on “**Research with Innovative Ideas in Pharmaceutical Education, Health Care & Life Sciences (NLCRIPEHCLS-2017)**” to be organized at Hotel Madhav International, Pune, Maharashtra, India during February 4th, 2017. I am confident that the conference will provide a forum for fruitful interactions and exchange of ideas among the delegates and students; participating from across the country. The

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conference “NLCRIPEHCLS-2017” covers the major areas of Pharmaceutical Education, Health Care and Life Sciences.

The technical program covers one day of presentations including keynote speech, lead talks, and contributed research papers. I would like to express my gratitude to all the authors and reviewers who have made great efforts for their preparations of their latest research findings and invited speakers who kindly accepted for sharing their expertise with the participants. I hope that the conference souvenir will serve as a comprehensive compilation of the present knowledge and experiences and will be used widely by research scholars, students and scientists. I would like to thank all those who have made their contribution to successfully organize this conference.

Regards

Dr.R.CHANDRASHEKHAR

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KEY NOTE LECTURE

**ROLE OF PLANTS AS A NEUTRACEUTICAL AND
PHARMACEUTICAL INTEREST**

Dr. S.S. DEOKULE

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ABSTRACT

Plants are one of the most important resources of human foods and medicine. Rapidly increasing knowledge on nutrition and medicine has dramatically changed the concepts of about food and health and brought in revolution on them. Popularity of herbal medicines, otherwise called complementary and alternative medicine has been increasing over few year. Fruits, vegetables and other crops containing various phytoconstituents such as alkaloids, anthocyanins, carotenoids, flavonoids, isoflavins, lignans, monophenols, monoterpenes, organosulfides, phenolic acids, phytosterols, saponins, triterpenoids etc. acts as health promoting phytochemicals.

Increased sense of entitlement to quality of life, increase in public access to worldwide health information and concerns about cost, adverse side effects of modern medicines and the popular belief that alternative medicines are safe have turned the research towards natural products which are safe and healthy. Phytochemical with antioxidant capacity naturally present in food are of great interest due to their beneficial effects on human health are they offer protection against oxidative deterioration. Carotenoids, tocopherols, ascorbates, lipoic acids and Polyphenols are strong natural antioxidants with free radical scavenging activity. Plants like *Rhodiola* Sp., *Rheum* Sp., *Passiflora* Sp., *Borassus flabellifera*, *Ficus* Sp., *Monochorea vaginalis*, *Pothas scandens*, *Rubus* Sp. have been proved to have immense antioxidant and pharmacological properties like antitumor, an antidiabetic, anti-inflammatory, antipyretic and analgesic activities.

Quality of product and quality of science are the major areas of risk in the systems of medicine and it is also increasingly getting proved that not at all herbal medicines are safe and free from side effects. Finally, Herbal drug development should be focused to develop standardized herbal products with reference to their active phytoconstituents present for commercialization, correct identification and supply of raw material avoiding

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adulteration. Traditional and modern medicine technique along with genuine science must be combined in order to bring out high quality herbal products that are safer, cheaper and effective. Scientifically validated and technologically standardized botanical products may be derived using traditional medicine- inspired reverse pharmacology approach. Most of these medicines are poly-herbal, multi-targeted slow acting and may have disease modulating activities rather than direct agonist or antagonist activities. Pragmatic clinical trials with system approach may be better suited for creating evidence base to traditional medicine.

This lecture will give an overview of important strategies for development of innovative botanical nutraceuticals and pharmaceutical products to global standards by taking real examples of ongoing national networks research program from India.

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LEAD LECTURE – I

HARNESSING BIODIVERSITY OF MEDICINAL PLANTS FROM
WESTERN GHATS

Dr. DIGAMBAR N.MOKAT

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ABSTRACT

India has only 2.4 per cent world's total land mass with 11 per cent total floristic diversity which has emerged as eighteenth mega diversity centers rank third in Asia and eleventh in world. India is sharing 4 of the 34 global hotspots of biodiversity out of these two are declared as hottest hot spots such as Western Ghats and Eastern Himalaya. Since last few decades Western Ghats is attracting scientists of different disciplines from different corners of the world due to its exclusive biodiversity, appreciated gene pool, and significant floral and faunal components. This unique biodiversity includes species, genetic and ecosystem diversity. Western Ghats is really treasure of large number of rare medicinal plants, which have therapeutic properties against the dreadful diseases like AIDS, cancer, diabetes, malaria, dengue, etc.

At present about 4000 species with about 1500 endemic plants and 63 per cent woody evergreen endemic trees with about 1500 medicinal and 200 aromatic plants are found in Western Ghats. Several medicinal plants species are also endemic and threatened in Western Ghats, which needs special attention for harnessing their therapeutic properties and require urgent conservation in natural habitat. The *Ancistrocladus heyneanus*, *Toddalia asiatica*, *Cochlospermum religiosum*, *Smilax zeylanica*, *Elaeocarpus tuberculatus*, *Hydnocarpus pentandra*, *Canarium strictum*, *Vateria indica*, *Garcinia gummitutta*, *Garcinia morella*, *Hydnocarpus alpina*, *Gaultheria fragrantissima*, *Symplocos racemosa*, *Saraca asoca*, *Salacia chinensis*, *Salacia oblonga*, *Pterocarpus marsupium*, *Moullava spicata*, *Sarcostemma intermedium*, *Chlorophytum borivilianum*, etc. are the species needs special attention for harnessing their medicinal properties for curing many dangerous diseases. Western Ghats is also rich in spices, tuber crops, wild edibles, orchids, bamboos, palms, etc. needs special attention for their Nutraceuticals, Cosmeceutical and therapeutic properties. Today the need of the time is for their propagation, cultivation, conservation and systematic utilization.

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LEAD LECTURE - II

**DNA FINGERPRINT IN CAPSICUM ANNUUM WITH THE HELP
OF MOLECULAR MARKER AND INVITRO STUDIES ON
ANTICANCER ACTIVITY OF CAPSAICIN**

Dr. BYLLA PRASAD

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University, Subedari, Warangal, Telangana State, India.

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ABSTRACT

Chilli pepper (*Capsicum* sp.) belonging to Solanaceae family, originated in Americas, then spread to Europe, Africa and Asia, especially to India, China and Japan. It is the integral and most important ingredient of different cuisines around the world; as it adds pungency, taste, flavour and colour to the dishes. It has immense medicinal value, and with the discovery that alkaloid Capsaicin is endowed with anti-cancer properties, its medicinal value has increased significantly. Chilli pepper cultivation is an important agribusiness for individual countries or localized geographic areas and the livelihood of thousands of farmers depend on a successful harvest. Export market has motivated commercial farming of highly /extremely pungent chilli pepper

Chilli pepper (*Capsicum species*) is cultivated all over the world as vegetable and spice crop. Chilli pepper includes sweet or bell pepper (zero pungency varieties eg., California wonder, Yolo wonder, Shimla Mirch etc.) and hot pepper (pungent varieties eg., Habanero, Bhut Jolokia, Naga jolokia, G4, G5, Pusa Jyothi, Pusa sadhabahar, Pusa jwala & Kotpar etc. Sweet pepper is cultivated in temperate countries mostly in greenhouses, while hot pepper is cultivated in tropical and sub-tropical countries in open fields

The popularity of Indian chilli pepper spreads throughout the world, after the discovery that 'Bhut Jolokia', a putative interspecific hybrid between *C. chinense* and *C. frutescens* from North East India (Assam), scored up to 1,001,304 SHUs and was considered the hottest pepper in the world, even hotter than the 'Red Savina' Habanero (up to 577,000 SHUs). Several chilli pepper landraces belonging to *C.annuum*, *C.frutescens* *C.chinense*, with varying degree of pungency, aroma, flavour and colour are cultivated in different parts of North Eastern State, Manipur. The cultivar Umorok with average pungency level in the range of 250,000-250,000 SHU

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was reported endemic to Manipur Statistical data on area and production of chilli pepper in India during 2009 -2010 to-2014-2015. India export chilli pepper to Malaysia, Sri Lanka, Bangladesh, USA and UAE. During 2010-2011, India exported chilli pepper products like powders & flakes upto a volume of 2.40 lakh tonnes valued Rs.1,536 crores (\$ 2,56,000) . In 2011-2012 India exported chilli pepper products upto a volume of 2.41 lakh tonnes valued Rs. 2,144 crores (\$ 3,57,333) and earned precious foreign exchange. United Andhra Pradesh is the largest producer of Chilli pepper and it contributes about 34% followed by Karnataka (15%), Orissa (10 %), Tamil Nadu (8%), Rajasthan (5%), Maharashtra (4%) and other States contributing 24% to the total area and production in 2014-2015.

Chilli pepper cultivation in A.P is highly profitable. *C.annuum* varieties G4, G5, G-334, G-002, G-311, G3, G-3, LCA-334, LCA-353, LCA-335, LCA-331, G-273, Pragna, Teja, Agnirekha etc, are still ruling varieties in local area maybe because of suitable agroclimatic conditions, active domestic, State, National markets and export market. Guntur district operates the world's largest chilli pepper market. Chilli peppers trading worth several crores of rupees take place in Guntur and Warangal markets. Chilli pepper prices in Guntur market determine prices at national level. Warangal ranks third in area and production of chilli pepper production.

Problems faced by chilli pepper cultivators and traders:

Two major problems faced by chilli pepper cultivators and traders, was (a) crop failure due unwitting use of spurious/fake/counterfeit seeds and (b) time consuming pungency phenotyping.

Spurious seeds:

Year after year the issue of spurious or counterfeit or fake seeds of commercial crops, especially chilli pepper in the local area has become a pestering problem for cultivators. Spurious seeds are explained by taking two situations. (i) In the first situation, seed raised by a particular person or company is marketed in the brand name of an elite variety by another person or company, and (ii) in the second situation, seed packet with the label of a ruling variety contains small or large quantities of viable or non-viable seeds of known or unknown descent. Farmers are easily exploited and the most gullible. Attracted to the aggressive advertising campaign of seed companies, tempted by the low prices and unable to distinguish between the seed varieties in the seed packet, used spurious seeds that spelled disaster to the cultivators. This has further pushed them into debt and in extreme cases the cultivator committed suicide (Muralidhar *et.al.*, 2011).

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Pungency phenotyping:

The commercial value of chilli pepper is based on pungency. Chilli pepper cultivation can be more profitable if capsaicin levels are determined beforehand. (Test guide lines No 45, document PG/76/8, UPOV Geneva). Pungency phenotyping in chilli pepper fruits is mandatory both for domestic and export purposes. However, the task of pungency phenotyping is cumbersome and time consuming, since it is carried out in dry fruits, after 4-5 months of commencement of cultivation and the trait is influenced by genotype, environment and their interactions.

LEAD LECTURE - III

**THE IMPACT OF TRADITIONAL AND FOLKLORE CLAIMS OF
MEDICINAL PLANTS IN HEALTH CARE**

Dr.P.RADHA

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ABSTRACT

In India, Traditional medicine systems such as Siddha, Ayurveda, Unani, Yoga and folk-medicines are used by local inhabitants since ages. In which, Siddha and Ayurveda are mostly based on natural resources including plants, animals, minerals and salts which made passage for invention of modern pharmaceuticals. Besides these, number of folk-medicines is diversely employed by the traditional medicine practitioners. Since most of highly precious formulations of these systems are rely on plants, the ethno-medicinal important of some selected plants like *Andrographis*, *Ephedra*, *Taxus*, *Piper sps*, *Phyllanthus Tribulus*, *Withania*, *Catharanthes*, *Trirunelveli senna*, *Urgenia*, *Goliosa superb* and the diseases for which these plants are used in different formulations and their impact on in the health care are discussed.

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LEAD LECTURE – IV

ANTI-CANCER ACTIVITY OF VINCA ALKALOIDS FROM
MADAGASCAR PERIWINKLE (CATHARANTHUS
ROSEUS (L.) G.DON)

Dr.R.CHANDRASHEKHAR and Dr. BHAVANI RAM

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ABSTRACT

Multidrug resistance towards the antibiotics and their related effects has an added effect to pursue the use of natural drugs. Given the evidence for rapid global spread of resistance of clinical isolates; there is a need for discovery of new drugs. Herbal medicine remains the oldest and most used form of medicine of our planet. A rich heritage of knowledge on preventive and curative medicines is available even in ancient scholastic works, like in the Atharvanaveda, Rig-Veda, charaka samhita, Ayurveda etc. Plants are the basic source of knowledge of modern medicine. According to the world health organization, Medicinal plants would be the best source to obtain a variety of drugs for cancer cure. About 80% of individual medicines have compounds derived from medicinal plants. Therefore, such plants should be investigated to better understand their properties, safety and efficiency. Cancer is a leading cause of death worldwide. From a total of 58 million deaths worldwide in 2015, cancer accounts for 7.6 million (or 13%) of all deaths. More than 70% of all cancer deaths in 2015 occurred in low and middle income countries. Deaths from cancer in the world are projected to continue rising, with an estimated 9 million people dying from cancer in 2015 and 11.4 million dying in 2030. The main types of cancer leading to overall cancer mortality are:

- A. Lung (1.3 million deaths/year)
- B. Stomach (almost 1 million deaths/year)
- C. Liver (662,000 deaths/year)
- D. Colon (655,000 deaths/year) and
- E. Breast (502,000 deaths/year)

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There are an estimated 2.5 million cases of cancer in India at any given time. Nearly 800,000 cases were diagnosed in 2000 and there were 550,000 deaths due to cancer in that same year. What is most disheartening is that many of these cancers can either be prevented altogether or treated effectively if detected early. Worse, yet, more than 70% of all cancers in India are found when the disease is so advanced that treatment is much less effective. Cancer is a generic term for a group of more than 100 diseases that can affect any part of the body. Other terms used are malignant tumours and neoplasms. One defining feature of cancer is the rapid creation of abnormal cells which grow beyond their usual boundaries, and which can invade adjoining parts of the body and spread to other organs, a process referred to as metastasis. Metastases are the major cause of death from cancer.

Cancer occurs because of changes of the genes responsible for cell growth and repair. These changes are the result of the interaction between genetic host factors and external agents. Physical carcinogens such as ultraviolet (UV) and ionizing radiation; chemical carcinogens such as asbestos and tobacco smoke biological carcinogens such as infections by virus (Hepatitis B Virus and liver cancer, Human Papilloma Virus (HPV) and cervical cancer) and bacteria (*Helicobacter pylori* and gastric cancer) and parasites (schistosomiasis and bladder cancer) contamination of food by mycotoxins such as aflatoxins (products of *Aspergillus* fungi) causing liver cancer. Treatment may involve surgery, radiation therapy, chemotherapy, hormonal therapy, or some combination of these.

The most advanced forms of treatment may produce a 5-year survival rate of 75% or more for certain types of cancer, e.g. cancer of the uterine corpus, breast, testis, and melanoma. By contrast, survival rates in cancer of the pancreas, liver, stomach, and lung are generally less than 15%. Cancer chemotherapy has developed rapidly, but some chemotherapies cause unacceptable side effects and are costly. This has led to the search for more natural biological products, especially those derived from plant products. Additionally, substitution or combination of conventional chemotherapeutic compounds with herbal medicine might improve efficacy and decrease side effects.

Anti-Cancer Activity of Vinblastine and Vincristine:

Catharanthus roseus (L.) G. Don is the most important plant source of alkaloids; like Vincristine and Vinblastine which are anticancer molecules with potential cytotoxic properties. The Vincristine was discovered by Gordon H. Svoboda in 1958, at the Lilly Research Laboratories. Last major

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useful drugs to have reached the marketplace based on this approach are the so called vinca alkaloids, vincristine sulfate (leurocristine) and vinblastine sulfate (vincal leukoblastine). Vincristine is the drug of choice for the treatment of childhood leukemia; vinblastine is a secondary drug for the treatment of Hodgkin's disease and other neoplasms. Plant-derived compounds have been an important source of several clinically useful anti-cancer agents. These include vinblastine, vincristine, the camptothecin derivatives, topotecan and irinotecan, etoposide, derived from epipodophyllotoxin, and paclitaxel (taxol). A number of promising new agents are in clinical development based on selective activity against cancer-related molecular targets, including flavopiridol and combretastin A4 phosphate, while some agents which failed in earlier clinical studies are stimulating renewed interest.

Anticancer molecule	Formula	Mol. Weight	Melting Point
VINBLASTINE	C ₄₆ H ₅₈ N ₄ O ₉	810.974	267°C
VINCRISTINE	C ₄₆ H ₅₆ N ₄ O ₁₀	824.958	220 °C

Table.1: Physical Properties of Vinblastine and Vincristine

Vinblastine and Vincristine are alkaloids found in the *Catharanthus roseus* (formerly classified as *Vinca rosea*, which led to these compounds becoming called Vinca alkaloids). They and vindesine and vinorelbine, semisynthetic derivatives of vinblastine, all work by inhibiting mitosis (cell division) in metaphase. These alkaloids bind to tubulin, thus preventing the cell from making the spindles it needs to be able to move its chromosomes around as it divides (this is similar to the action of colchicine, but is different from the action of paclitaxel, which interferes with cell division by keeping the spindles from being broken down). These alkaloids also seem to interfere with cells' ability to synthesize DNA and RNA. They are all administered intravenously in their sulfate form once a week; these solutions are fatal if they're administered any other way, and can cause a lot of tissue irritation if they leak out of the vein.

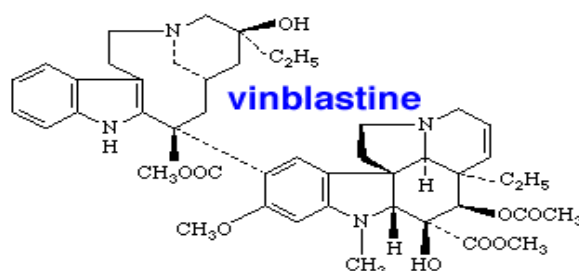


Fig.1: Structure of Vinblastine

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Vinblastine is typically administered at a dose of 6 milligrams per square meter of body surface. It's marketed as Velban by Eli Lilly and has a half-life in the bloodstream of 24 hours. Vinblastine is mainly useful for treating Hodgkin's disease, lymphocytic lymphoma, histiocytic lymphoma, advanced testicular cancer, advanced breast cancer, Kaposi's sarcoma, and Letterer-Siwe disease. It also seems to fight cancer by interfering with glutamic acid metabolism (specifically, the pathways leading from glutamic acid to the Krebs cycle and to urea formation). People with bacterial infections should not be given this drug, nor should pregnant women, since it caused severe birth defects in animal studies. Side effects include hair loss, nausea, lowered blood cell counts, headache, stomach pain, numbness, constipation and mouth sores. Bone marrow damage is the typical dose-limiting factor.

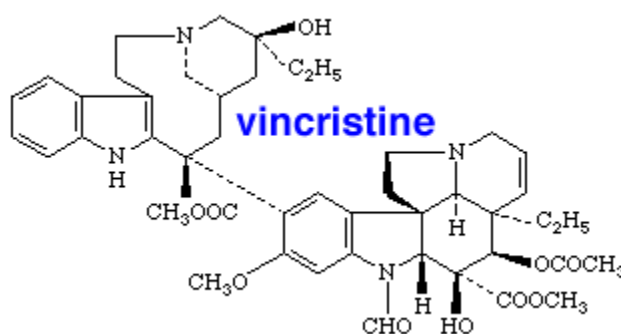


Fig.2: Structure of Vincristine

Vincristine, which is marketed as Oncovin by Eli Lilly, has a serum half-life of about 85 hours. It is used mainly to treat acute leukemia, Rhabdomyosarcoma, neuroblastoma, Hodgkin's disease and other lymphomas. The typical dose is 1.4 milligrams per square meter of body surface once a week, and neurotoxicity is the dose limiting factor (it can cause damage to the peripheral nervous system). Because of this, people with neuromuscular disorders should steer clear of this drug if possible. Likewise, people with some forms of Charcot-Marie-Tooth syndrome should avoid Vincristine.

Pregnant women should definitely not take it, because it causes severe birth defects in animal tests. Side effects include those found with Vinblastine, plus nervous system problems such as sensory impairment; some people may also develop breathing problems or lung spasms shortly after the drug is administered. People occasionally develop secondary cancers if they receive the drug along with other anticancer drugs that are known to be carcinogens.

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CONCLUSION:

Vincristine and Vinblastine together represent a new class of naturally occurring oncolytic agents which are extensively used in the chemotherapeutic management of a wide variety of human neoplasms. Some of the major kinds of cancers are treated by these classes of compounds as follows:

- A. **Vinblastine:** Hodgkin's disease, Non -Hodgkin's lymphoma, Renal, Testicular, Head and neck cancer.
- B. **Vincristine:** Acute lymphocytic leukemia, Hodgkin's disease, Hyposarcoma, Small Cell lung cancer, Cervical and breast Cancer.

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IN VITRO ANTI OXIDANT ACTIVITY OF HYDRO-ALCOHOLIC
EXTRACT OF CAESALPINIA BONDOC

[Paper Id – 1001]

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ABSTRACT

Present study deals with the *In vitro* Anti oxidant activity of hydro alcoholic extract of *Caesalpinia bonduc* commonly known as sagargota belongs to the family. Hydro alcoholic extract of *Caesalpinia bonduc* was subjected to *In vitro* antioxidant activity screening models such as DPPH, ABTS radical scavenging activity, inhibition of Lipid peroxidation where Gallic acid, Butylated Hydroxy Toulene (BHT) and Ascorbic acid were used as the standards. In all the models studied, hydro alcoholic extract of *Caesalpinia bonduc* showed nearly equal activities to Standards. used. In conclusion, the present study approved that the *Caesalpinia bonduc* extract have promising *In- vitro* antioxidant activity.

Keywords: *Caesalpinia bonduc* , DPPH, ABTS, Lipid peroxidation

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STANDARDIZATION OF PROTOCOL FOR THE ISOLATION,
STRUCTURAL DETERMINATION AND QUANTIFICATION OF
GOSSYPOL FROM COTTON (GOSSYPIUM) SEEDS

[Paper Id – 1002]

A Paper Presented by: ¹R.Chandrashekhar, ²Bhavani Ram, ³N. Lakshmi Bhavani,
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ABSTRACT

Cotton and related species contain toxic component “gossypol”; a polyphenolic yellow pigment that is an integral part of the cotton plant’s self defense system against insect pests and possibly some diseases. Cotton seed which remains after the cotton ginned is used to produce cotton seed oil. Owing to the gossypol toxicity after the pulling out of oil, cottonseed cake cannot be used as poultry fodder or for human being but it is used only for heifers feed. The present study deals with standardization of the protocol for isolation, structural determination with analytical descriptions of gossypol expected molecular weight, expected functional groups and the presence of desired number of protons and quantification of gossypol from cotton seeds. Though adequate for minimal planning, this study is avoidable expenses of solvent extraction systems for the isolation of gossypol as a mother component present in the cotton seeds, moderate counter to bulk use of such schemes.

Keywords: Cottonseeds, Gossypol, Standardization, Isolation, Structural determination.

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EVALUATION OF ANTIMICROBIAL ACTIVITY OF PLANT
EXTRACTS AND ESSENTIAL OILS ON ANTIBIOTIC
RESISTANT BACTERIAL STRAINS

[Paper Id – 1003]

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ABSTRACT

Developing antibiotic resistance is an example of most serious threats to successful treatment of microbial diseases. Plant extracts have a great potential as antimicrobial agents against resistant microorganisms. The aim of the present study is to evaluate antibacterial activity of plant extracts *Salmalia malabarica*, *Symplocos racemosa*, *Acoruscalamus*, *Psoraleacaryophyllus*, oils of *Semecarpusanacardium*, *Azadirachtaindica*, *Pongamiapinnata*, and essential oil of *Citronella* and *Palmarosa* against multidrug resistant strains of *Escherichia coli*, *Staphylococcus aureus* (MRSA), *Staphylococcus epidermi* discollected from Lilavati Hospital. Antibacterial activity of extracts was performed using agar well diffusion method and MBC. Hydroalcoholic extract of *Psoraleacorylifolia* MBC=0.0078µgand *Salmalia malabarica* MBC=0.78 µgshowed significant activity against *Staphylococcus aureus*, *Staphylococcus epidermidis*. Oils of *Semecarpusanacardium* and *Azadirachtaindica* also showed significant antibacterial activity (MBC=1.93µl and 7.81 µl respectively) against *Staphylococcus aureus* and *Staphylococcus epidermidis*. Essential oil *Citronella* and *Palmarosa* showed maximum inhibitory effect against *Staphylococcus aureus* and *Staphylococcus epidermidis* (MBC=0.25 µl and 1 µl respectively). Thus, these plant extracts and essential oils can be used in the treatment of diseases caused by resistant microbes.

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CHEMICAL NATURE AND THERAPEUTIC EFFECTS OF
LAGENARIA CICERARIA

[Paper Id – 1004]

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Lagenaria siceraria (Mol.) Standley also known as bitter bottle gourd, Lauki or Sorakaya, Cucurbitacea family is a large softly pubescent climbing herb with 5 – angled hispid stem and bifid tendrils. Leaves lobed, hairy, flowers large, fruits large bottle shaped, having soft juicy fleshy seeds. Male flower long and female short stalked.

Active Principle: Bitter fruits yield 0.013% of solid foam contains cucurbitacins. These bitter principles are present in fruit as aglycones. The fruit juice contains Beta-g lycosidase., Vit. B, Aglycone, Cucurbitacin B,D,G and Tri terpenoids.

Keywords: expectorant, anodyne, glycemic index, Cucurbitacins, Prebiotics.

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CDR (CORPORATE DEBT RESTRUCTURING)& SDR
(STRATEGIC DEBT RESTRUCTURING SCHEME)

[Paper Id – 1005]

A Paper Presented by: Rajan B. Gupte
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ABSTRACT

CDR means restructuring of the outstanding debts of a company when it finds it difficult to repay the same as per the terms and condition of the said debt agreement.

CDR Comprises of: Providing moratorium, stretching the obligations over a longer period of time. It also includes conversion of part of the debt into equity or preference capital, reduction of interest rate, payments out of promoter's contribution / sale of surplus assets etc.

Traditionally in many cases of restructuring, borrower companies are not able to come out of financial stress due to operational or managerial inefficiencies despite substantial sacrifices made by the lending banks. In such cases, change of ownership will be the most preferred option for the Lenders. Hence, the RBI suggested that Joint Lenders' Forum (JLF) should actively consider such change in ownership and take necessary action.

Keywords: CDR, SDR, CDR cell, core group, empowered group, Joint lenders forum, ownership change.

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ASSESSMENT OF PRELIMINARY PHYTOCHEMICAL
CONSTITUENTS IN AQUEOUS AND NON-AQUEOUS LEAF
EXTRACTS OF PLUMBAGO ZEYLANICA L.

[Paper Id – 1006]

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ABSTRACT

Plants are the basic source of acquaintance of modern medicine. Practically all the parts of the plant, viz., bark, flower, seed, root and leaf are notorious to have various medicinal properties. Herbal medication remains the oldest and most used practice of medicine of our planet. Multidrug resistance towards the antibiotics and their allied effects has an auxiliary effect to pursue the use of natural drugs. There is a need for innovation of novel antimicrobial agents. *Plumbago zeylanica* commonly known as Ceylon Leadwort or Doctor bush is a species of *Plumbago* with a pantropical distribution. Present investigation concentrated on phytochemical screening of leaf crude extracts of *Plumbago zeylanica* L, in different aqueous (water) and non- aqueous (acetone and ethyl acetate) solvents respectively. Specific tests were conducted to identify each group of the phytochemicals of various solvent leaf extracts of *Plumbago zeylanica* L. The leaf extracts of *Plumbago zeylanica* L, was extracted separately with Acetone, Ethyl acetate and water subjected to screened for phytochemical constituents. Among the entire extracts tested aqueous (water) extracts showed more phytochemicals than the others followed by non- aqueous (acetone and ethyl acetate). Analysis revealed the presence of alkaloids, phenols, cardiac glycosides and tannins. The Phytochemical studies indicate that the alkaloids, anthroquinones, phenols, terpenoids and cardio glycosides were found in both aqueous (water) and non- aqueous (acetone and ethyl acetate) leaf extracts of *Plumbago zeylanica* L. The outcome of the present study will be helpful to discovery of new antimicrobial agents and antibiotics for identification of new natural drugs with no side effects.

Keywords: *Plumbago zeylanica* L, Leaf crude extracts, aqueous and non-aqueous.

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PHYTOHARMONAL IN NEED OF CALLUS STIMULATION
STUDIES ON GOTU KOLA (CENTELLA ASIATICA L.) - AN
IMPORTANT HERBAL CURATIVE
[Paper Id – 1007]

A Paper Presented by: ¹Kshirsagar Yogesh, ²S.S. Deokule

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ABSTRACT

Centella asiatica L. a prostrate, perennial herbaceous creeper, of the family “Apiaceae” is native to India, Srilanka, Malaysia and other parts of Asia. It is commonly known as *Gotu kola* in Chinese, *Brahmi* in Hindi and *Manduukaparani* in Ayurveda. It is utilized as an important folk medicinal herb by natives of Asia, Southern and middle Africa, since ancient time it is used in therapeutic uses. It is commonly used as ingredient in salads and summer drinks (Thandaayee) prepared in India. The plant has reputation in Indian system of medicines; it is used for treatment of asthma, bronchitis, elephantiasis, gastric catarrh, kidney troubles, leucorrhoea, skin disease and urethritis with anti-bacterial, antecedent, anti-filarial, anti-stress, anti-tuberculosis activities and wound healing properties. In nature callus or callus like tissue are formed in various parts of intact plant either due to deep wound or due to some diseases. But the callus tissue which is important to plant tissue culture is produced experimentally from a small excised portion called the explant of living healthy plant. The present work focused on the induction of callus from leaf explants, and predicts the suitable medium for initiation of callus from the explants and to understand the physical changes of the explant under culture conditions of *Centella asiatica L.* for callus induction. The sterilisation procedures have also been standardised for the leaf explants for callus initiation. Mild concentrations of Bavistine (30 mg/lit), and mercuric chloride (0.1.5%) as sterilizing agents effectively controlled the fungal and bacterial contamination of the cultures. The phytohormones like kinetin with 2,4- D, BAP with 2,4-D were used for callusing from leaf explants. Among hormonal combinations used in the culture media the combination of BAP and 2,4-D was found to be good for the callus induction. BAP was found to be more suitable than Kinitine for callus initiation and growth. Green colour callus was induced and proliferated after 15 days of inoculation of leaf explants on MS culture medium with BAP (0.51mg/lit) + 2,4-D (0.52mg/lit).

Keywords: *Centella asiatica L.*, Leaf explants, Bavistine, Phyto-hormones.

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STANDARDIZATION OF CYPERUS ROTUNDUS RHIZOME
EXTRACT WITH RESPECT TO PICEATANNOL AND HPLC
METHOD VALIDATION OF ITS FORMULATION

[Paper Id – 1008]

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ABSTRACT

Piceatannol (Stilbenoid) is an important marker component present in *Cyperus rotundus* Linn. (Family-Cyperaceae) rhizome. Piceatannol is mainly known for its anti-obesity activity. *C. rotundus* Linn and its phyto-molecule (viz. piceatannol) have several medicinal uses including anti-obesity, antioxidant, antimicrobial, anti-inflammatory etc.

Objective: The objective of the present study is to establish a simple, sensitive, reliable, rapid and validated HPLC method for estimation of Piceatannol in *C. rotundus* Linn. rhizome extract as well as its formulation.

Materials and Methods: *C. rotundus* Linn rhizome was extracted with methanol and dried at rota vapor (Buchi R 210). The crude extract was then formulated using maltodextrin to get free flowing non-hygroscopic powder. Piceatannol in this formulation was then quantified and validated by HPLC (Waters e 2695). Mobile phase used was Buffer (water- pH adjusted to 2.1 by formic acid) and Acetonitrile. Analysis was done by using gradient program at 327nm with respect to standard.

Keywords: *Cyperus rotundus* Linn, Cyperaceae, rhizome, Piceatannol, HPLC, enrichment, quantification, method validation.

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ANTI BACTERIAL ACTIVITY ON PSIDIUM GUAJAVA LEAVES
OF GRAM POSITIVE BACTERIA(STAPHYLOCOCCUS AUREUS,
BACILLUS SUBTILIS) & GRAM NEGATIVE BACTERIA(E.COLI&
PSEUDOMONAS AERUGINOSA) USING THE
STREPTOMYCIN DRUG

[Paper Id – 1009]

A Paper Presented by: V. Hari Priya, J. Amani Rani
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ABSTRACT

To determine the anti bacterial potential activity of guava(psidiumguajava) leaf extracts against gram positive(staphylococcus aureus) and negative bacteria (E.coli) using methanol and isopropanol extracts showed inhibitory action. Only gram positive bacteria are susceptible to the two extracts, while other gram negative bacteria showed zone of inhibition. Major constituents ofguava which is rich in flavonoids like, guaijavarin, quercetin. In preliminary phyto chemical screening, the crude extracts gave the positive reactions for alkaloids, flavonoids, saponins, tannins. Significant of anti-bacterial activity was found by the extract of (isopropanol, methanol) of guava leaf extracts. It shows anti-bacterial, anti-diarrhoeal, anti-spasmodic, anti-inflammatory activity.

Keywords: Staphylococcus aureus, E.coli, streptomycin, saline, Isopropanol, Methanol.

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FORMULATION, DEVELOPMENT AND EVALUATION OF BABY
FOODS

[Paper Id – 1010]

A Paper Presented by: Gauri.P.Deshmukh
Department of Food Science and Technology Jagdish Prasad Jhabermal Tibrewala
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ABSTRACT

Baby food is prepared from grains like wheat, green gram, sugar, skim milk powder and banana powder containing different levels (0, 5, and 10.....(unit). Proximate composition of the baby food samples determined using the AOAC method showed increase in moisture, protein, ash, crude fibre and carbohydrate with increasing malting method. The increased protein value is a striking observation that could be advantageously utilized to improve nutrition of infants, and children. Sensory evaluation of the samples was carried out by using a semi-trained panel. All the samples produced were rated acceptable when based on a 9 point scale (with 9= highly acceptable and 1= highly unacceptable). The result show that the baby food prepared from malted method is less viscous with high nutrients.

Keywords: Assessment, Baby food, Malted, Puffing

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BIO-PIRACY- A THREAT TO MEDICINAL PLANTS,
CONSERVATION & PATENTING : A REVIEW STUDY

[Paper Id – 1011]

A Paper Presented by: Dr Zehra M Siddiqui
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ABSTRACT

Medicinal plants and a plant diversity is one of the biggest asset placing India in 10th position in the world and 4th in Asia and are valuable source of new herbal drugs, natural health products and bioactive compounds, being non-toxic, no side effects, easily available and affordable with more efficacy thus gaining global attraction throughout the world. This article briefly highlights the global trends, development & prospects of strategies for conservation of sustainable use of medicinal plant resources. Our early ancestors explored biodiversity and learned benefits from nature cure for many diseases lies hidden beneath these green vegetation and this knowledge is commercially exploited today by the individuals, corporate and governments of other countries taking advantage by securing patents derived from natural resources possessed by indigenous people of that country causing gradual depletion in biodiversity & also violating states sovereign rights to its own resources, in the name of patents leading to “Bio-Piracy”, a threat to hampering traditional knowledge which is an intangible component of the resource itself of the developing countries. It has a great potential of getting connected into commercial profits by proving to be the leading sector in development of many products saving time and cost that would otherwise have to spent in research and this further claimed and rewarded illegally and unethically.

Biopiracy is not only the piracy of natural resources of a country but also is a theft of economic development opportunities. In recent times enormous cost of drug development growing side effects and drug resistance has become of great concern and compare to conventional system of screening millions of synthesized chemicals, traditional knowledge based bioprospecting significantly cut costs of pharmaceutical Research and development, hence pharma industry looking at medicines developed by local communities in older cultures like India, Africa, China where centuries old traditions of indigenous healing are still viable and in use. Thus these healing practices and cures are rich hunting grounds for biopirates, where

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large international pharmaceutical corporations make use of local indigenous traditional knowledge without acknowledging that it is an indigenous intellectual property and profits accrues solely to pharmaceutical companies.

According to IUCN-World Conservation Union, about 15,000 medicinal plant species are threatened with extinction world wide and native species and plant products of individual countries, restricted access to traditional remedies, illegal patenting & over collection of species, poses a significant threat to medicinal plant natural resources & their habitats. The lack of legal protection of our biological and cultural heritage has made indigenous communities vulnerable to bio-piracy and India has been victim of biopiracy over many decades and so the rights of availing the natural resources & traditional knowledge need to be protected and the issue of bio-piracy is threatening horizons because western countries are playing with the patents of crucial, traditional and indigenous product of the developing countries and studies reveal that, many of the indigenous owners are not in favour of trading their knowledge for any monetary benefits because the prevalence of ethics in their culture make them share their knowledge and expertise willingly without expecting any kind of favors or rewards from them, henceforth poor indigenous communities remain poor and the indiscriminate extractors of this intellectual wealth keep on exploiting the nature's wealth. Scientists, research institutes or commercial enterprises all over the world take samples to test new drugs either without permission or on ethically unacceptable terms leading to increasing biopiracy reflecting a conflict of cultural and ethical values between the original state holders and the biopirates.

Thus keeping in view the above setbacks discussed, A Global Convention on Biological Diversity & World Wild Life Fund formed Wild Life Trade Monitoring Network (TRAFFIC) taken initiative to monitor & control global trade in wild medicinal plant species & specifically recognising the property rights of indigenous and local communities over the commercial exploitation of traditional remedies, amendments need to be implemented to introduce new enforcements that would aim at getting rid of this unethical practice of biopiracy, original stake holders of this traditional knowledge must get a share of benefit in return and the awareness regarding IPR & patent rights of native communities must be agreeable at greater level in our society.

*“CONSERVE NATURE’S NATURAL TREASURE TO UNRAVEL THE
MIRACULOUS MEDICAL BENEFITS FOR THE MANKIND BEFORE IT GETS
ENDANGERED.”*

Keywords: Biopiracy, Intellectual Property Rights, IUCN, Biodiversity

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EVALUATION OF EFFECT OF PERMEATION ENHANCERS FOR
IMPROVED PERCUTANEOUS ABSORPTION OF
DICLOFENAC SODIUM

[Paper Id – 1012]

A Paper Presented by: ¹TapalaJyoti, ²MauryaSoni, ³Joshi Bhagyashri
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ABSTRACT

AIM:

The objective of the study is evaluate *in vitro* permeation potential of the Diclofenac sodium gel by different permeation enhancers.

METHODS:

The diclofenac sodium gels were formulated using Carbopol 934, Carbopol 940, Sodium CMC as base, Dimethyl sulfoxide, oleic acid and menthol Soluphor P, oleic acid, capric acid, propyleneglycol, Eucalyptus oil, Tween 80, citric acid, PEG 400, Ethanol were used as permeation enhancers with 1% w/w concentration of each as a penetration enhancer.

A comparative study was carried out for the *in vitro* permeability using Franz type diffusion cell with parchment paper.

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APPLICATION OF NANOTECHNOLOGY IN
NEUTRACEUTICALS: A NOVEL APPROACH

[Paper Id – 1013]

A Paper Presented by: ¹Sudhanshu Bhusan Routray, ²Ch.N.Patro
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ABSTRACT

A product isolated or purified from food & sold in medicinal form not associated with food .The use of nanotechnology in the preparation of neutraceutical such as nanoemulsion & polymer micelles based delivery system can enhance the bioavailability. Nanoemulsion of dibenzoylmethane (liquorice) in range of 50 nm 200 nm enhance oral bioavailability 3 fold over conventional emulsion. Now there was increased demand for functional food ingredients with improved water solubility, thermal stability, oral bioavalibility, sensory attributes and physiological performance. To overcome instability, poor water solubility and to enhance the bioavailability one option to entrap the compound into a food matrix is to use a nano emulsion. Nanoemulsion offer many advantages such as high kinetic or thermodynamic stability, ability to combine hydrophilic or lipophilic phytochemicals in same system and ability to transport easily droplets through cell membranes. The combination of DNA and nanotechnology generates the nutrition delivery system which brings the active agents efficiently in the human bodies and cells. To make the enzyme highly active and long lived nanomaterials provide superior enzyme support system due to their large surface to volume ratio compared to traditional microscale support materials. The incorporation of functional nanoparticles is leading to production of packaging materials for providing barrier to oxygen and carbon dioxide flow, modifying the permeation of behaviour of foods, deodorising, increasing barrier properties, blocking ultraviolet light, improving mechanical and heat resistance properties, developing antifungal and antimicrobial surface. The current application in food science provides detection of food pathogens through nanosensors. It is possible to manipulate molecule and atoms of food. Nanotechnology make neutraceutical cheaper, more safe and sustainable using less water and chemicals. The nanofood market is expected to reach 20.4 billion dollars by end of 2010 .

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**FORMULATION AND EVALUATION OF AN ANTI-
INFLAMMATORY-ANALGESIC GEL FOR NEUROPATHIC PAIN**

[Paper Id – 1014]

A Paper Presented by: ¹Shraddha Patil, ²Tanvi Kamat

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ASBTRACT

Management of patients who present with chronic pain is a common problem in medical care. The classification of chronic pain falls into three broad categories: pain owing to tissue disease or damage (nociceptive pain, such as osteoarthritis), pain caused by somatosensory system disease or damage (neuropathic pain), and coexistence of nociceptive and neuropathic pain (mixed pain)¹. Medical treatment with potent antiepileptic or antidepressant drugs like remains the first step in treatment of neuropathic pain like trigeminal neuralgia. These drugs have side-effects.

Atopical gel was designed with an objective of providing symptomatic relief in conditions of neuropathic pain. Prostaglandins are implicated in neuropathic pain. Topical diclofenac will inhibit the production of local proinflammatory prostaglandins. Benzocaine provides an analgesic effect. An antidepressant was added to alleviate neuropathic pain. The analgesic activity was then tested to measure the efficacy of the formulation.

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SYNTHESIS OF 6-(5-SUBSTITUTED-1H-INDOL-3-YL)-2,4-DIOXO-1,2,3,4-TETRAHYDROPYRIMIDINE-5-CARBONITRILES 6(A-D) AND 6-(5-SUBSTITUTED-1H-INDOL-3-YL)-4-OXO-2-THIOXO-1,2,3,4-TETRAHYDRO PYRIMIDINE-5-CARBONITRILES 7(A-D).AND THEIR ANTIMICROBIAL, PROLIFERATIVE ACTIVITYALONG WITH MOLECULAR DOCKING STUDIES

[Paper Id – 1015]

A Paper Presented by: ¹G. Thirupathi, ²Y. Bharathi Kumari

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ABSTRACT

Treatment of 5-substituted indole-3-carboxaldehydes 1(a-d) with ethylcyanoacetate (2) in presence of triethylamine at r.t. for 3h resulted 3-(5-substituted 1H-indol-3-yl)ethyl acrylates 3(a-d). 3(a-d) on treatment with urea (4) and thiourea (5) in presence of triphenylphosphine under reflux for 12h resulted 6-(5-substituted-1H-indol-3-yl)-2,4-dioxo-1,2,3,4-tetrahydropyrimidine-5-carbonitriles 6(a-d) and 6-(5-substituted-1H-indol-3-yl)-4-oxo-2-thioxo-1,2,3,4-tetrahydro pyrimidine-5-carbonitriles 7(a-d). Alternatively the title compounds synthesised by treatment of 1(a-d) with 2 in presence of L-tyrosine at r.t. for 2h resulted 3 (a-d), which on treatment with urea (4) and thiourea (5) in presence of ZnO NPs under reflux for 6h resulted 6(a-d) and 7(a-d). The compounds synthesised 6(a-d) and 7(a-d) were found to have very good anti bacterial activity against *klebsiellapneumoniae*, *Escherichia coli*, *Staphylococcus aureus* and *Bacillus subtilis*. The compounds synthesised 6(a-d) and 7(a-d) were found to have very good fungicidal activity against *Rhizoctoniasolani*, *Fusariumoxysporum*, *Aspergillusniger* and *Aspergillusflavus*. The compounds synthesized 6(a-d) and 7(a-d) exhibited relatively significant anti proliferative activity in different types of cell lines (U937, COLO 205, HL60 and THP1).

Keywords: ZnONPs, Anti microbial activity, Anti proliferative activity

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NEED OF BIOPOLYMERS AND APPLICATIONS OF
POLYHYDROXYBUTYRATE(PHB): A SHORT REVIEW

[Paper Id - 1016]

A Paper Presented by: Koyyati Rama

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ABSTRACT

The current review focuses on the need of biopolymers which has gained a significant role in recent years as they are naturally occurring, biodegradable, temperature resistant, eco-friendly, durable, biocompatible compared to the synthetic polymers which has many drawbacks. Among many biopolymers the polyhydroxybutyrate (PHB) a representative of polyhydroxyalkanoates has many applications in various fields such as medicine, agriculture, pharmacy, food processing, industry etc.,

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SELF EMULSIFYING DRUG DELIVERY SYSTEM FOR
ENHANCEMENT OF SOLUBILIZATION AND BIOAVAILABILITY
OF POORLY SOLUBLE DRUGS

[Paper Id – 1017]

A Paper Presented by: ¹Girish Chandra Soni, ²Sunil Kumar Prajapati
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ABSTRACT

The increasing number of lipophilic drug candidates in development in the pharmaceutical industry calls for advanced drug delivery systems with increased bioavailability less day-to-day and food-intake-dependent. Many of these drug candidates possess poor water solubility, so that their dissolution rate in the gastrointestinal tract (GIT) limits their absorption following oral administration. Lipophilic and less water-soluble therapeutic agents cause decreased bioavailability, increased chance of food effect, incomplete release from the dosage form and higher inter-subject variability. Since the first step in the oral absorption process is dissolution of the drug compound in the gastrointestinal lumen contents, poor aqueous solubility is rapidly becoming the leading hurdle for formulation scientists working on oral delivery of drug compounds. In the past few decades, various lipid-based formulations have been investigated to enhance the bioavailability of such challenging drug candidates and to increase their clinical efficacy when administered orally.

Recently, self-emulsifying drug delivery systems (SEDDS) have attracted increasing interests and, in particular, self-nanoemulsifying drug delivery systems (SNEDDS). SEDDS and SNEDDS consist in micro- or nano-emulsions of oil containing the drug that spontaneously form in aqueous media on mild agitation.

Self emulsifying drug delivery systems are isotropic mixtures of oils and surfactants. Sometimes containing co-solvents and can be used for the design of formulations in order to improve the oral absorption of highly lipophilic compounds. Self-emulsifying formulations spread readily in the

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gastrointestinal tract (GIT), the GI motility of the stomach and the intestine provide the necessary agitation for self emulsification. The prepared formulations were evaluated for thermodynamic stability (centrifugation, heating cooling cycle (H/C cycle), freeze thaw cycle), dispersibility, robustness to dilution, particle size measurements, zeta potential, refractive index, percent transmittance, viscosity, drug content and In vitro drug release

With future development of this technology, SEDDS will continue to enable novel applications in drug delivery and solve problems associated with the delivery of poorly soluble drugs and in enhancement of bioavailability.

Keywords: lipophilic drugs, bioavailability, self emulsifying drug delivery system (SEDDS), isotropic mixture.

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SYNTHESIS AND ANTIBACTERIAL ACTIVITY OF SOME
NOVEL HYDRAZONE DERIVATIVES OF ANACARDIC ACID
LINKED WITH 1,4-DISUBSTITUTED 1,2,3-TRIAZOLE RING

[Paper Id – 1018]

A Paper Presented by: ¹A.L.V. Kumar Reddy, ²Niren.E.Kathale

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ABSTRACT

Hydrazones possessing an azometine -NHN=CH- proton. Hydrazones constitute an important class of compounds for development of novel drugs. A number of hydrazone derivatives have been reported to various biological activities like analgesic, anti-inflammatory, antihypertensive, anticonvulsant, antimicrobial, anti-tubercular, antitumor, antimalarial and antiproliferative activities [1]. 1,2,3-Triazoles are important five-membered nitrogen heterocycles, involved in a wide range of industrial applications such as agrochemicals, corrosion inhibitions, dyes, optical brighteners and biologically active agents [2]. The compounds are in general prepared through the coupling reaction between alkynes and azides to form a mixture of 1,4-substituted- and 1,5- substituted-1,2,3-triazoles at high temperature [3]. Anacardic acid (pentadecyl salicylic acid) is a phenolic constituent present in Cashew Nut Shell Liquid (CNSL); (*Anacardium occidentale L.*) and exhibits antimicrobial properties [4] which have led to the preparation of various analogues. Many researchers have been interested in synthetic derivatives of ancardic acid and it was discovered that anacardic acid is a promising lead compound in the discovery of novel pharmacophore through structural modification.

As part of our ongoing research activity, we have synthesized some new hydrazone (**7a-g**) derivatives linking anacardic acid, 1,2,3-Triazole ring and hydrazone moiety. The synthesis of the hydrazone derivatives (**7a-g**) was accomplished in five synthetic steps from anacardic acid as starting material, utilization greener solvents/green reagents. Some of the highlights of the synthesis involve (i) methylation reaction using dimethyl carbonate as greener reagent (ii) mild bromination reaction utilizing TCT /DMF complex / NaBr (iii) one pot click reaction using ionic liquid (iv) synthesis of hydrazone derivatives under solvent free conditions. The structures of newly synthesized derivatives **7a-g** were determined by spectroscopic techniques

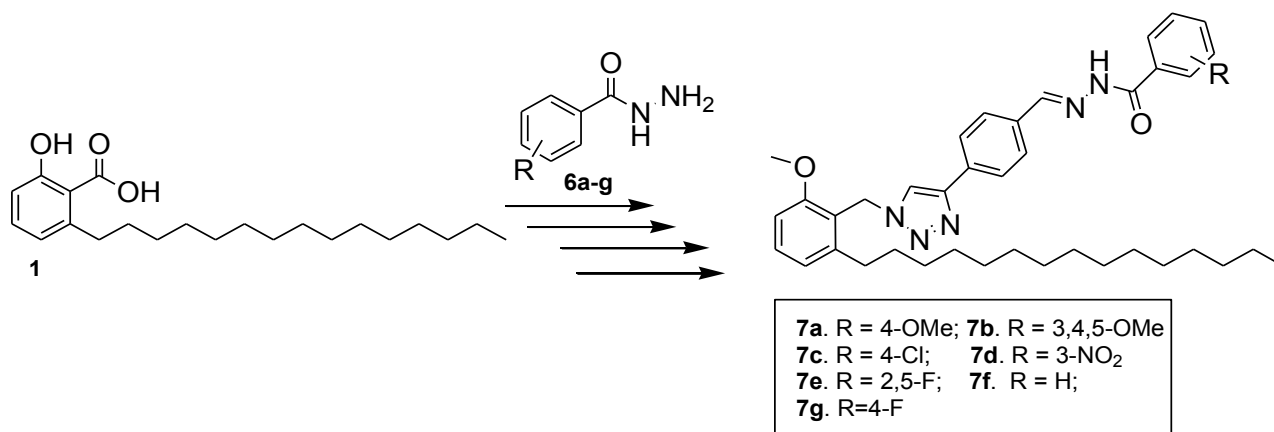
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like ¹H NMR, mass and IR spectral data. Antibacterial activity screening results revealed that hydrazone derivatives **7a**, **7b** and **7e** with R = 4-OMe, 3,4,5-OMe and 2,5-F exhibited good antibacterial activity against Gram positive (*viz.*, *S.aureus* and *B. subtilus*) and Gram negative strains (*viz.*, *E.coli* and *P.aeruginosa*).



Keywords: Anacardic acid, Hydrazone Derivatives, Antibacterial Activity, Triazole Ring.

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THE SCOPE OF BACTERIAL AMYLASES FOR
BIODEGRADATION

[Paper Id – 1019]

A Paper Presented by: P.Pushpalatha
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Most of the microorganisms present in the nature have decomposing activity. The microbial enzymes are more stable and obtained easily. Amylases are among the most important enzymes and have a great significance in present day industry. Starch degrading bacteria find great applications in industries such as food, fermentation, textile and paper. Thus isolating and manipulating pure culture from various soil and waste materials has manifold importance for various biotechnology industries. In the present investigation bacterial strains producing amylase were isolated from soil sample and inoculated into Casein Peptone Starch medium for fermentative production of amylase. The optimum temperature for production was 35-40°C. The pH range was found to be 7. The fermented broth upon filtration yield amylase produced, which is then tested for its ability to degrade variety of substances. A comparative analysis of biodegradation ability of bacterial amylases was done and degradation capacity of bacterial strains was found to be effective.

Keywords: Amylases, Biodegradation, fermentation, soil sample.

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METRONIDAZOLE USED AS ORAL SUSPENSION USING ION
EXCHANGE RESIN(IER)

[Paper Id – 1020]

A Paper Presented by: A. Pooja

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ABSTRACT

Children are frequently failed to take medications properly because of unpleasant taste of medicament. Non-compliance can lead to worsening of diseased condition. Numbers of taste masking technologies have been used to address the problem of patient compliance. Use of sweeteners, amino acids and flavoring agents alone are often inadequate in masking the taste of highly bitter drugs. Coating is more efficient technology for aggressively bitter drugs even though coating imperfections, if present, reduce the efficiency of the technique. In Ion exchange resin (IER) method weak cation exchange or weak anion exchange resins are used for taste masking, depending on the nature of drug. The nature of the drug resin complex formed is such that the average pH of 6.7 and contain concentration of about 40meq/L in the saliva are not able to break the drug resin complex but it is weak enough to break down by hydrochloric acid present in the stomach. Thus the drug resin complex is absolutely tasteless with no after taste, and at the same time, its bioavailability is not affected. Children under the age of 8 are typically prescribed liquid medications because of smaller structure of a child's esophagus.

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PLANT GROWTH PROMOTING MICROBES ASSOCIATE WITH
JATROPHA AND PONGAMIA PLANTS

[Paper Id – 1021]

A Paper Presented by: ¹Poornachandar.G, Srinivas Baskari, Paul Marx, Srinivas L, Swarna Balka, Dhatri Madduru, Prof.Ch.Venkata Ramana Devi
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ABSTRACT

Plant growth promoting bacteria are important for plant nutrition by increasing N and P uptake by the plants, and playing a significant role as plant growth promoting rhizobacteria (PGPR) in the biofertilization of crops. The present study was done on the plant growth promoting microbes associate with Pongamia and Jatropha plants. Soil samples were collected from Pongamia and Jatropha fields. Enumeration of microbes (bacteria, fungi, Actinomycetes) was done by the dilution plating technique using appropriate media. Mean microbial population was found to be more (9×10^5 cfu g⁻¹ of soil) in Pongamia field. Enumeration of specific microbes (Pseudomonas, non-symbiotic nitrogen fixing bacteria and Siderophore producing bacteria) was done by the dilution plating technique with appropriate media. The results showed significant difference between the two crops Pongamia and Jatropha for specific microbial enumeration parameters. Mean specific microbial count (9×10^4 cfu g⁻¹ of soil) was found to be high in Pongamia field. The effect of PGPB on Jatropha seeds, collected from various locations i.e. ICRISAT, Velchal and Kothapally were studied by inoculating the seeds with non-symbiotic nitrogen fixing bacteria and Siderophore producing bacteria. Significant difference was observed in the seeds collected from Kothapally inoculated with non-symbiotic nitrogen fixing bacteria, where the root length and shoot length (10 cm and 15 cm) was observed to be more when compared to that of seeds collected from other areas and Siderophore producing bacteria. The out come of this experiment necessities further studies on PGPB to study the effect of high growth in cropping systems.

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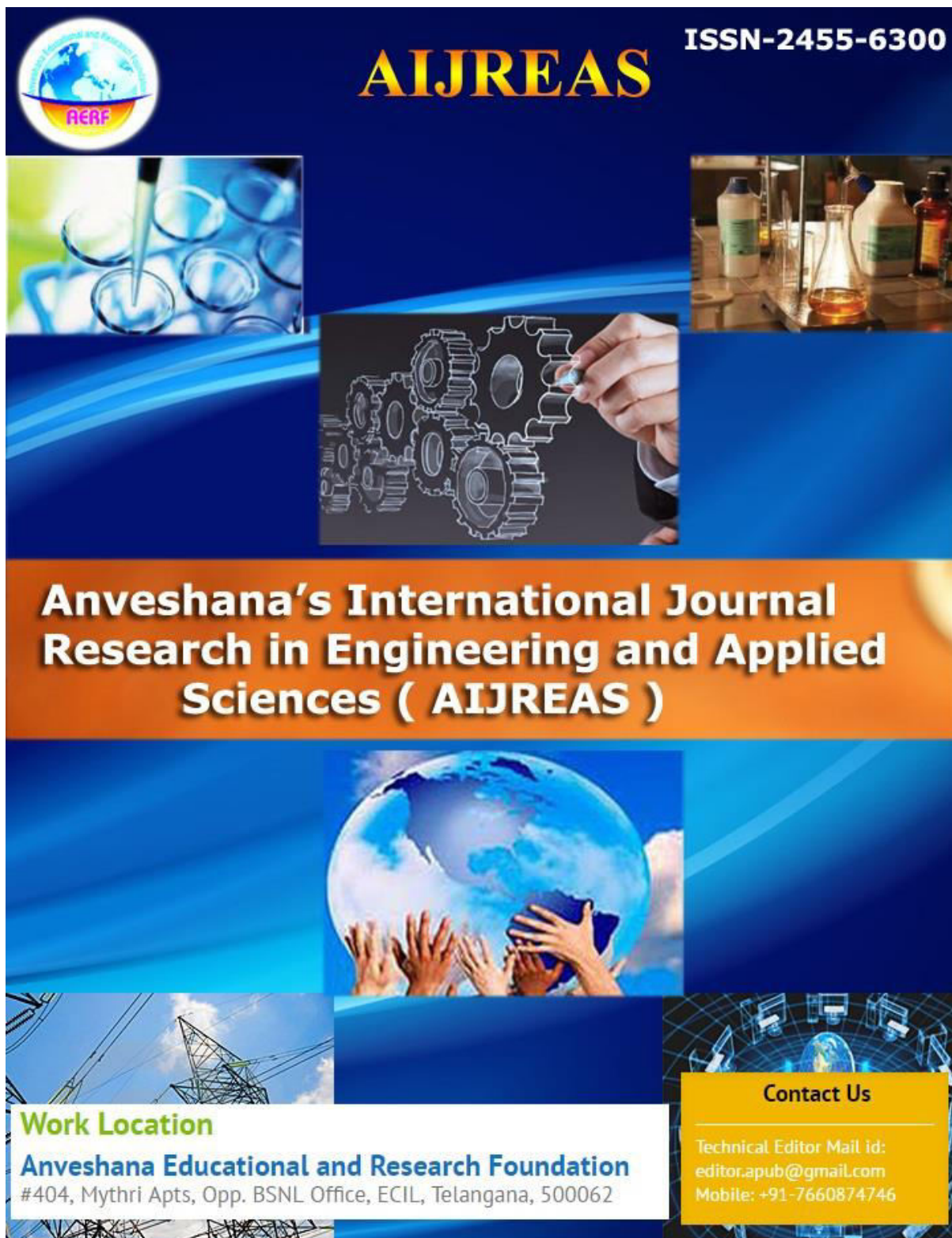
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