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From the Editor's

Dear Readers,

In the June issue of our Newsletter, we received several popular articles from diverse fields. All the authors deserve great appreciation for sharing articles in huge numbers. Please continue sending articles to our Publication team and share published newsletter with your friends also.

I would like to thank the Editorial team including Print, Designer and Publication committee for their efforts throughout the edition.

Your suggestions are always welcome for improvement.

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## REPORT OF

### National Conference on Scientific Advancement for Sustainable Environment and its Impact on Health: An Earth day Celebration (SASE-2023) April 22-23, 2023

The national Conference on "Scientific Advancement for Sustainable Environment and its Impact on Health: An Earth Day Celebration (SASE-2023)" during April 22-23, 2023 was organized jointly by the Department of Dravyaguna, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India and the National Environment Science Academy, New Delhi. The event was sponsored by SRICC, BHU, Varanasi and Department of Biotechnology, Govt. of India. The conference was organized in the Prof. K.N. Udupa Auditorium, Institute of Medical Sciences, Banaras Hindu University, Varanasi. Varanasi is well-known and oldest inhabited city in the world, was formerly known as Kashi (the name "Kashi" comes from the word "Kasha," which means "brightness"). Brahma Vardha, Anandakanana, Avimuktaka, Mahasmasana, Kasi, Sudarsana, Surandhana, and Ramya are just a few of the well-known names for Varanasi. Currently, Kashi is referred to as Varanasi, which was derived from the names of the two holy Gange River tributaries, Varuna and Assi. In the Indian state of Uttar Pradesh, Kashi is located on the banks of the Holy Ganges. Two rivers, the Varuna and the Assi, have names that are related to the origin of the name Varanasi. It was once believed that Varanasi came from the name of the river Varuna. Varanasi has been known by various names over the years, including Avimuktaka, Mahasmasana, Surandhana, Anandakanana, Brahma Vardha, Sudarsana, Ramya, and Kasi. Varanasi was referred to as Kasi or Kashi in the Rigveda. Varanasi is renowned for being a hub of learning, literature, art, and culture. The Hindu believes that the God Shiva was the founder of this ancient city, Varanasi. It makes it one of the most important and old pilgrimage destinations in the India. It was widely believed that Varanasi stands on "The Trishool," also known as the Trident, which was Lord Shiva's weapon. The name of the city is mentioned in many Hindu scriptures such as the Rigveda, Skanda Purana, the Ramayana, and the Mahabharata. Varanasi is around 3000 years old city in the world. The city is best known for its muslin, silk textiles, fragrances, ivory carvings, and numerous sculptures. It is

also regarded as the hub of most creative and religious endeavours. The king of Poona built one of the temples dedicated to the goddess Annapurna. The people of the city started tourism in the 18th century. Varanasi is described as being older than history, tradition, and legend (by Mark Twain, a well-known indophile). Annie Besant worked in Varanasi and donated her School to make a part of the indigenous educational institute as the Central Hindu College, which was later expanded into the large university known as Banaras Hindu University in 1916, and established by Pt. Madam Mohan Malviya. This conference was organized at the campus of such a historical place, Banaras Hindu University, Varanasi.

The first day was start with the inauguration of the national Conference, which was took place in the auspicious presence of Chief Guest, **Dr. Ved Prakash Singh**, Deputy Director General, Department of Health Research, Ministry of health and Family Welfare, Govt. of India. During the Inaugural session the Patron of the event **Prof. V.K. Shukla**, Rector of Banaras Hindu University, Varanasi, the Co-Patron(s) of the event **Prof. S.K. Singh**, Director, Institute of Medical Sciences, Banaras Hindu University, Varanasi and **Prof. K.N. Dwivedi**, Dean, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, the Convener, **Prof. Anil Kumar Singh**, the Head of the Department, **Prof. B. Ram** were present along with the Organizing Secretaries, Dr. Sanjeev Kumar, Dr. Binay Sen, Prof. Ajay Gupta, Dr. Jasmeet Singh, and Co-Organizing Secretaries, Dr. Rajesh Kumar Singh, Dr. Preeti Yadav.



**Figure 1: First day, Inaugural session of the National Conference, SASE-2023.**

The conference was inaugurated by the Chief Guest, **Dr. Ved Prakash Singh**, Deputy Director General, Department of Health Research, Ministry of health and Family Welfare, Govt. of India. He presented his valuable views on environmental changes and human health and possible solution. He also informed about various schemes of Central government and possible funding strategy. Considering, the wide and varied gathering of huge number of participants and the programme of technical sessions, he

complimented the organizers for their skill and efforts. Then, the patron of the conference, **Prof. V.K. Shukla** discussed about the changes of climate on our mother EARTH planet and how the health is affected continuously since a long time. Similarly, **Prof. S.K. Singh** pointed out the role of environment on our health and accentuated on the plantation for its possible remedy. **Prof. K.N. Dwivedi** introduced the institute of medical sciences, BHU and explained the medicinal plants, its role in balancing the climate and environment for possible managing the changes in climate. He also emphasized to grow your own garden as much as possible which will help both in managing the environment as well as serve as a source of drugs for many diseases. **Prof. Ashwani Wangneo**, from the National Environmental Science Academy introduced the Academy and unfolded the theme of the national conference. He also presented his message and emphasized for a careful analysis of impact caused by environmental changes which will help to devise new strategies, techniques or genetic approaches to improve human health. **Prof. Anil Kumar Singh** discussed the theme and scope of the conference along with the details of two day's programme and welcomed all the delegates from different parts of our country. Then, a lecture was given by the Chief Guest, **Dr. Ved Prakash Singh**, Deputy Director General, Department of Health Research, Ministry of health and Family Welfare, Govt. of India on the current research on environment and health. Followed by the refreshment in the form of High Tea and snacks were served to all the participants and delegates in the New Lecture Theater ground floor dining hall, Institute of Medical Sciences, Banaras Hindu University, Varanasi. After the tea break, the deliberations started and the parallel sessions were organized separately with each scientific theme. Keynote Address, Invited Lectures and Oral presentations were also held regularly in the auditorium as per technical programme. Considering the large number of participants of various field, the technical session of the conference was divided into 3 parallel sessions for total **264 abstracts**. **There were 135 abstracts for oral presentation and 129 abstracts for poster presentation scheduled** as described below.

The first technical session started with the keynote talk of **Prof. Rana Pratap Singh**, School of Life Sciences, Jawaharlal Nehru University, New Delhi on "Chemoprevention of Cancer-Research and Relevance" and explained the different aspect of anticancer chemoprevention and their relevance. Then the invited talk was conducted as per the technical schedule, and first lecture was delivered by **Dr. Gulshan Wadhwa**, Director & Scientist-F, Department of Biotechnology, Ministry of Science and Technology, Govt. of India has discussed the different aspect of chemoprevention and chemotherapy. He emphasized to discover and develop new chemical entity to treat cancer efficiently. Followed by **Prof. Pawan Kumar Verma**, SKUAST-Jammu, Jammu and Kashmir, India has presented his lecture on "Ameliorative potential of

quercetin on plasma renal biomarkers, oxidative and histopathological changes in renal tissue induced by gentamicin in Wistar rats” and discussed the effect of quercetin on biochemical parameters. **Prof. Alluri Venkata Nagavarma**, Adikavi Nannaya University, Rajahmundry has delivered his lecture on “Current Needs of Making Changes in Transportation and Energy Policies to Mitigate the Bad and Harmful Impacts of Environmental Pollution: An Indian Perspective”, describing the different fuel and their role in environmental pollution. **Prof. K. Palanivelu** from Anna University, Chennai, delivered an interesting lecture on “Observed and future temperature of Tamil Nadu state and addressing the challenges of heat stress”. **Prof. Debidas Ghosh**, Vidyasagar University, Midnapore, presented his research on “Pre-Clinical Parallel Therapy Of Phytochemicals Mixture With Gold Standard Drug For Diabetes Management In Rat: Genomic And Proteomic Approaches”, which was very significant in the field of diabetes treatment protocol for future drug development. Then, the oral presentation was started with **Dr. Rahul Mahamuni**, S.B.E.S. College of Science, Aurangabad, presented his findings on “Restoration techniques for the conservation of Nathasagar wetland at Paithan in the Aurangabad District of Maharashtra”. **Dr. Rajkumar Maiti**, Bankura Christian College, Bankura, presented his outcomes as “Ameliorating potential of fenugreek seed extract on sodium fluoride induced spermatogenic and androgenic disorders in male albino rats”. **Dr. Yashwant Singh Tariyal**, VCSG Uttarakhand University of Horticulture and Forestry, Bharsar, presented on “Assessment of bijamrita and organic manures on seed germination growth and yield of Foxglove *Digitalis purpurea* L.”. **Dr. Adita Sharma**, Dr. Rajendra Prasad Central Agricultural University, Dholi, Samastipur, Bihar presented her findings on the “Comparative study of breeding performance of cryopreserved milt of *Cyprinus carpio* and *Cyprinus carpio haematopterus*”. The first session was chaired by Chairperson, Prof. Ajay Gupta, Maharishi Markandeshwar, Ambala, Haryana, Co-chairperson, Dr. Arun K Dwivedi, Faculty of Ayurveda, BHU, Varanasi, and Rapporteur, Dr. Vinod Tiwari, IIT-BHU, Varanasi. Then, the lunch was organized and scheduled at the New Lecture Theater ground floor dining hall, Institute of Medical Sciences, Banaras Hindu University, Varanasi which includes chapatti, rice, kachauri, gulab jamun, dal, mixed vegetable, paneer masala, etc.

After the lunch, the technical session was scheduled at two places, Prof. K.N. Udupa Auditorium, and Smart Classroom, Department of Dravyaguna, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, and coded as TS2A and TS2B respectively. The technical session TS2A was chaired by the Chairperson, Dr. Gulshan Wadhwa, Director and Scientist F, Department of Biotechnology, Ministry of Science & Technology, Government of India, Co-chairperson, Dr. Shivani Ghildiyal, Assistant Professor,

AIIA, New Delhi, and the Rapporteur, Dr. Lalit Nagar, Senior Resident, IMS, BHU, Varanasi. This session was started with the invited talk of **Prof. R. K. Upadhyay**, DDU Gorakhpur University, Gorakhpur, on “Enzymatic alterations in albino mice injected with purified *Rhipicephalus microplus* tick saliva toxins”, followed by **Dr. Sadhucharan Mallick**, Indira Gandhi National Tribal University, Amarkantak, on “Green Synthesis of Copper and Copper-based Nanoparticles for their Use in Medicine: Toxicity and Safety”, and Prof. Debidas Ghosh, Vidyasagar University, Midnapore, on “Pre-clinical parallel therapy of phytochemicals mixture with gold standard drug for diabetes management in rat: Genomic and proteomic approaches”. Then, the oral presentation of the session started by Dr. Anju Patel, CSIR-National Botanical Research Institute, Lucknow on “A sustainable way to remove Arsenic contamination using biochar”, Dr. Anchal Rana, Forest Research Institute, Dehradun, on “Conservation and sustainable use of endangered Himalayan species: A case study in *Polygonatum verticillatum* Linn.”, Dr. Tanushri Ghorai, Dr. Rajendra Prasad Central Agricultural University, Dholi, Bihar on “Dietary Nutraceuticals from Fish and Shellfish and their by-products: Way forward for Healthy Life”, Dr. Manish Kumar Vijay, ICFRE-Tropical Forest Research Institute, Jabalpur on “Efforts of Tropical Forest Research Institute, Jabalpur for the conservation of diminishing medicinal tree species of Central India”, Dr. Rashmi Gupta, Banaras Hindu University, Varanasi on “Role of Herbal Medicines & Ayurvedic Palliative Care in Cancer Management”. Same time in the session TS2B, the chairperson was Prof. R. K. Upadhyay, Department of Zoology, Gorakhpur University, Gorakhpur, the Co-chairperson was Dr. Shreyans Jain, Assistant Professor, IIT-BHU, Varanasi, and the Rapporteur was Dr. Daneshwar S. Kannasetti, Senior Resident, IMS, BHU, Varanasi. This session was started with the invited talk of Dr. Abhishek Kumar, Lucknow University, Lucknow on “Extraction, Phytochemical screening, Separation, and Characterization of Bioactive Compounds of Medicinal and Aromatic Plants (MAPs)”, followed by Dr. Shivani Ghildiyal, All India Institute of Ayurveda, New Delhi on “Standardization of *Launae nudicaulis* (L.) Hook. f. (L.N): A source of classical Ayurvedic herb *Gojihva* and its wound healing potential”, then the oral presentation was started. The first presentation was by Aabidha Anand, Banaras Hindu University, Varanasi on “Reno protective effect of sodium-copper chlorophyllin on the progression of chronic kidney disease”, then, by Aishwarya Sahu, Banaras Hindu University, Varanasi on “Role of melatonin in amelioration of BPS induced testicular damages”, Albin K Jose, National Institute of Oceanography, Regional centre Kochi on “Impact of a Massive Flood on the Hydrobiology of Kochi Coastal Waters”, Amogha G Paladhi, CHRIST (Deemed to be University), Bengaluru on “Herbs - Boon that beholds Magic”, Nidhi Ghosh, Department of Zoology, BHU, Varanasi on “Impact of Pax6 and Putative Markers of Neuroinflammation”, and by Amit kumar, LNMU, Darbhanga, Bihar on “The Impact of Quarantine on sleep

quality and Psychological Distress during the COVID-19 Pandemic in Bihar”. Simultaneously, the poster session-1 (PS-1) was conducted in the gallery of the hall, and total 40 participants were scheduled for their presentation. After the completion of TS2A and TS2B, there was a tea break of 15 min. in which the participants and resource persons were interacted with each other and discussed for probable collaboration for their research.

The technical session TS3A, TS3B, and PS-1 were conducted in the respective places. The TS3A was started in the chairpersonship of Prof. J.S. Tripathi, Institute of Medical Sciences, BHU, Varanasi, Co-chairpersonship of Dr. Abhishek Kumar, LU, Lucknow, and the Rapporteur was Dr. Yashoda Rawat, Institute of Medical Sciences, BHU, Varanasi. The invited lecture was delivered by Dr. Vijay K. Mishra, Rajiv Gandhi University of Knowledge Technologies, Nuzvid on “Development of in vitro androgenic haploid and determination of bioactive secondary metabolites in Cambod tea (*Camellia assamica* ssp. *lasiocalyx*)”, followed by oral presentation of Dr. Amit Kumar, University of Allahabad, Prayagraj on “New insights in Climate change mitigating technologies by mean of SCCS: a reliable alternative for sustainable environment”, Dr. Sulochana Sharma, SBRM Govt. PG College, Nagaur on “Comparative Study of Physico-Chemical Parameters of Groundwater of Nagaur District, Rajasthan, India”, Dr. BhashaShanmugam, Sri Venkateswara University, Tirupati on “Combinatorial Effect of (-)-Epicatechin and Resveratrol on Antioxidant and Pro-Inflammatory Markers in D-Galactosamine Induced Hepatitis Rats”, Dr. Rakesh Verma, Banaras Hindu University, Varanasi on “Effect of Endotoxin on Female Reproductive Health: Protection by Melatonin”, Dr. Sucharita Pal, University of Hyderabad, Hyderabad on “Environmental effects of Deccan volcanism on biotic changes and K/PgB mass extinction in the Indian sub-continent: organo-molecular evidences”, Dr. Vadiraj K T, JSS Academy of Higher Education and Research, Mysuru on “Production of Biodiesel from a Potential Biofuel Crop *Manihotesculenta* (Cassava) a Non Edible Oil Seed and its Characterization Methods”, Dr. Kuladip Jana, Bose Institute, Kolkata on “Elucidating the Cellular and Molecular Mechanism of Natural Product Derived Small Molecules as Anti-cancer and Anti-filarial agents”, and Dr. PrithvirajKarak, Bankura Christian College, Bankura on “Arsenic contamination ground water and its impact on human health”. Simultaneously, the technical session TS3B was conducted in the smart classroom of the department, where Prof. C.S. Pandey, Institute of Medical Sciences, BHU, Varanasi was chairperson of the session, the co-chairperson was Dr. DNS Gautam, Institute of Medical Sciences, BHU, Varanasi and the Rapporteur was Dr. Meghna, Institute of Medical Sciences, BHU, Varanasi. The technical session was started with the invited talk of Dr. Somenath Das, The University of Burdwan, Bardhaman on “Essential oils as next generation chemicals for postharvest protection of food commodities”, followed by

Dr. Neha Singh, Banka BioLoo Limited, Hyderabad, Telangana, India on “Faecal Sludge Treatment and Concomitant Resource Recovery. Then, the oral presentation was conducted and started with the presentation of Anjali Yadav, RGSC, Banaras Hindu University, on “Anidra - A Comparative Study between Ayurveda and Nutraceutical”, Anupama from CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow, Uttar Pradesh presented on “Retention of Allelopathic Properties of Extract and Essential Oil of *Ocimum* Formulated with Biochar for Weedicidal Properties”, Anuradha Upadhyaya, KIIT Deemed to be University, Bhubaneswar, Odisha, on “Technological advancement for preparing nano-cellulose: a short review”, Anurag Panda, KIIT Deemed to be University, Bhubaneswar, Odisha on “A review on the multi-directional resource utilization path of Phosphogypsum: An industrial waste”, Anusha V Udupa, University Jnana Bharathi, Bengaluru on “Role of classical training in modifying age-dependent stress –an online survey based analysis”, Arunima.P.S, Banaras Hindu University Varanasi on “Role of vyadhikshamatva in the prevalence & management of rajayakshma (pulmonary tuberculosis)”, and Surabhi Rai, Lalit Hari State Post Graduate Ayurvedic College, Pilibhit on “Supply Chain Challenges in Pharma Industry”. After finishing the session, TS3A, TS3B, and PS-1, there was a delicious dinner. The delegates were enjoyed the dinner and again interacted and discussed their problems and future projects.

The second day was start with a very delicious BANARASI STYLE breakfast at 08:00 AM and the sessions were started from 09:00 AM sharply. The Sessions were parallel in both places as the first day. The technical session TS4A and TS4B were simultaneously conducted, the chairperson of TS4A was Prof. P.K. Goswami, Institute of Medical Sciences, BHU, Varanasi, the Co-chairperson was Dr. Sadhucharan Mallick, IGNTU, Amarkantak and the Rapporteur was Dr. Subhashini, MMV, BHU, Varanasi. The session started with a eye-opening keynote lecture of Dr. Arun Chandan on “Global Issues of Medicinal plant biodiversity”, followed by invited talk of Dr. Atun Roy Choudhury, Asst. General Manager- Technical, Cube bio Energy Private Limited, 501, KK Plaza, 100 Feet, Road, Ayyappa Society, Madhapur, Hyderabad, Telangana 500081 on “A Comprehensive Technological Analysis of Biomedical Samples: COVID Waste-related Handling and Management Situation in India”, the oral presentation started Dr. Shanmugam Bhasha, Sri Venkateswara University, Tirupati on “Combinatorial effect of (-)-epicatechin and resveratrolon antioxidant and pro-inflammatory markers in d-galactosamine induced hepatitis rats”, Dr. Prithviraj Karak, Bankura Christian College, Bankura, West Bengal on “Arsenic contaminated ground water and its impact on human health”, Dr. Praveen Joshi, Govt. M. B. P.G. College, Haldwani, Uttarakhand, India on “Assessing anthropogenic pressure and threats on *Paeoniaemodi* Wall. Ex Royle habitats in Garhwal

Himalaya, India”, Prof. Nitu Shree, P.G. Ayurvedic Medical College and Hospital, Fatehgarh, Farrukhabad on “Ethnobotanical studies on some medicinal plants of Sonbhadra district of Uttar Pradesh, India. s.r. to Anasarca”, Prof. M. Suresh Gandhi, University of Madras, Guindy Campus, Chennai on “Benthic Foraminifera as a tool for ecology, environment and pollution monitoring studies in east coast of India, Bay of Bengal”, Dr. L.R. Shanmugam, Government Degree College, Vidavalur, SPSR Nellore District on “Trigonelline a Bioactive compound of *Trigonella foenum-graecum* protect Heart tissue for alcohol intoxication: A clinical study with reference to antioxidant enzymes and oxidative stress markers”, and Dr. Kumari Sunita, Gorakhpur University Gorakhpur on “Ethnobotanical study of traditional medicinal plants in combating infectious diseases around Devi Patan, Tulsipur district of Uttar Pradesh region”. Simultaneously, the Technical Session TS4B was chaired by Prof. P.K. Goswami, IMS, Varanasi, Co-chaired by Prof. Lakshman Singh, IMS, BHU, Varanasi, and the Rapporteur was Dr. Ayush Kumar Garg, IMS, BHU, Varanasi. The session was started with the invited lecture of Dr. Mridul Ranjan, Institute of Medical Sciences, BHU, Varanasi on “Ayurvediya Panchkarma- An Answer to Ambient Pollution Hazards”, Dr. Sudama Singh Yadav, Institute of Medical Sciences, BHU, Varanasi on “Importance of the Principle Oriented Approach of Ayurvedic Samhitas in Research”, then the oral presentation begun and Dr. Ekta Manhas, Mahayogi Gorakshnath University, Gorakhpur presented on “Promotion of herbal medicine and problems that needs to be addressed”, Bhavna Singh, SOITS, IGNOU, Delhi on “Monitoring of land use land cover dynamics for sustainable planning: A study of Gautam Buddha Nagar district, India”, Ekta Sharma, Deemed to be University, Mullana-Ambala, Haryana presented on “The antioxidant content of Devil’s horsewhip (*Achyranthes aspera*) in different ethanolic solvents”, Kirti Singh, Dayalbagh Educational Institute, Agra on “Morphological characteristics of indoor PM 2.5 during Cooking and Non-Cooking Hours”, Krishnendu Adhikary, Centurion University of Technology & Management, Odisha on “Identification and targeting Orphan G-Protein Coupled Receptor (GPCR) in mosquito for application of herbal repellent”, Dr. Lalit Nagar, Institute of Medical Sciences, Banaras Hindu University, Varanasi on “Expedient Ayurvedic Management of Mukhapaka- A Case Study”, and M. P. Somashekarappa, GFG College, Kadur, Chikkamagaluru, Karnataka on “Characterization and bactericidal efficacies of silver nanoparticles synthesized from leaf extract of medicinal plants, *Ocimum basilicum* and *Persea americana*”. There was a tea break on completion of the technical session TS4A, and TS4B.

There were two parallel sessions conducted before lunch as TS5A and TS5B, and one poster session (PS-2) in the gallery for remaining poster presenters. The TS5A was chaired by Prof. Rajnikant Mishra, Department of Zoology, BHU, Varanasi, the Co-chairperson was Dr. Vijay Mishra, RGUKT, Nuzvid, and the rapporteur was Dr. Rajesh Kumar

Singh, Institute of Medical Sciences, BHU, Varanasi. The session started with the invited talk of Prof. Kavita Shah, Banaras Hindu University, Varanasi on “Restoration of Land through multi-benefits Energy crops: Lessons from across the globe”, and oral presentation was presented by Dr. Kandeepan Gurunathan, ICAR-National Meat Research Institute, Hyderabad on “Development of nanocomposite eco-friendly packaging pouches for chicken meat”, followed by Prof. B. E. Shambulingappa, Veterinary college Shimoga-577204 (KVAFSU, Bidar), Karnataka on “Molecular and biochemical characterization of *Staphylococcus pseudintermedius* from canine pyoderma in Shivamogga region of Karnataka”, Dr. B. B. Basak, ICAR-Directorate of Medicinal and Aromatic Plants Research, Anand on “Organic amendments with biodynamic preparation found effective in improving soil phosphorus dynamics and P uptake in medicinal crops”, Minakshi, Banaras Hindu University, Varanasi on “Isolation, Morphological, Pathogenicity test, and Molecular characterization of *Rhizoctonia* spp. Causing Sheath blight of paddy”, Neelam Baghel, Dayalbagh Educational Institute, Dayalbagh, Agra on “Personal exposure of VOCs and women health risk assessment in rural kitchen: Their role in the formation Tropospheric Ozone”, Niranjana Kumar, S, Bangalore University, Bangalore on “Ambient Air Quality Assessment in Major Traffic Junctions of Bangalore City, Karnataka”, Prabal Ghosh, Vidyasagar University, Midnapore, West Bengal on “Curative role of human chorionic gonadotropin, vitamin E and vitamin C on ethyl acetate fraction of *Terminalia chebula* mediated hypo testicular activities in Wistar rat: Genomic and flow-cytometric approaches”, Pragya Shukla, Division CSIR-National Botanical Research Institute, Lucknow on “Insight on glandular trichomes of *Solanum viarum* Dunal in accumulation and extrusion of hazardous heavy metals”, and Soni Kumari, Biochemistry and Molecular Biology laboratory, Department of Zoology, Institute of Science, Banaras Hindu University, Varanasi on “Pax6 and putative markers of Parkinson’s Disease”. Simultaneously, in the technical session TS5B, the Chairperson was Prof. K.H.H.V.S.S. Narasimha Murthy (Varanasi), Co-chairperson was Dr. Harsh Paney, (KCP, Mirzapur) and the Rapporteur was Dr. Lalit Nagar (IMS, BHU, Varanasi). The session was started with the invited talk of Dr. Shreyans Jain, (Indian Institute of Technology (BHU) Varanasi) on “2,3-dehydrosilychristin from *Vitex negundo* Linn.: An alternative source of silymarin-derived flavonolignan”, Dr. Preeti Chouhan, (Banaras Hindu University, Varanasi) on “Effect of Palashadi Yoga Basti on Ovulation in PCOS infertile Patient”, Dr. Ram Dayal, (RBU, Mohali-Chandigarh) on “Associations of sperm DNA fragmentation and post-thaw survival of spermatozoa with primary and secondary male infertility in India”, and Priyanka Rathore, (Poornima University, Jaipur, Rajasthan, India.) on “Power quality enhancement through mitigation techniques in grid-connected solar PV System”. Then, the lunch was organized and scheduled at the New Lecture Theater ground floor dining hall, Institute of Medical

Sciences, Banaras Hindu University, Varanasi, and the results of poster presentation were analyzed for ranking and awarding the best one. After the lunch both session was combined and conducted in the auditorium, which was chaired by the Chairperson, Prof. J. S. Tripathi, (Varanasi), Co-chairperson, Prof. P.S. Byadgi (Varanasi), and Rapporteur, Dr. Uma Singh Sachan (IMS, BHU) and the results of both day were concluded and analyzed. **A total 90 oral presentations were accomplished out of 135, and 78 posters were displayed out of 129. 168 papers were presented in this conference by participants.**

The valedictory session was held after a tea break in the Prof. K.N. Udupa Auditorium, Institute of Medical Sciences, BHU, Varanasi at 4:30 pm on 23<sup>rd</sup> April, 2023. Following persons were at the stage, the Guest of Honour of the occasion were **Prof. Rabinarayan Acharya**, Hon' able Director General, Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of AYUSH, Govt. of India, the patron, **Prof. V.K. Shukla**, Rector, Banaras Hindu University, Varanasi, The Co-Patron, Prof. S.K. Singh and Prof. K.N. Dwivedi, the Convener, Prof. Anil Kumar Singh, Head of the Department, Prof. B. Ram, the Organizing Secretaries, Dr. Sanjeev Kumar and Dr. Jasmeet Singh.

**Prof. Anil Kumar Singh**, Convener, SASE-2023 welcomed the delegates and compiled the report of three days scientific event. Two days scientific event included six themes and 11 sub-themes designed very meticulously and invited speakers, poster and oral presentations were organized theme-wise. All the possible outcomes of the lectures/talks and their panel discussions were shared with the delegates. Total numbers of oral and poster presentations with research papers in each session were briefed. The Best poster and Oral Presentation awards in each theme were also presented to the winner delegates who participated in various sessions during the national conference. Appreciation certificates and awards were presented to voluntary members who helped in conducting this event.

**Prof. Rabinarayan Acharya**, Hon' able Director General, Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of AYUSH, Govt. of India in his speech congratulated all the organizers, delegates, speakers and committee members for conducting and participating in the mega event. He discussed about the event from the very first meeting till the end of the event. He emphasized that amid of high temperature and unfavorable weather conditions such a great gathering took place. Thanked all the speakers for very thought provoking lectures and inspiring series of events which took place in three days event. He thanked all the partners and funding agencies for providing such a good platform to the students and delegates.



**Figure 2: First day, Inaugural session of the National Conference, SASE-2023.**

**Dr. Binay Sen**, Organizing Secretary, SASE-2023 apprised about the academic activities of two days. He informed the house and dignitaries that about 96 papers were presented in the conference in various forms. Total 78 posters were displayed on both the days during conference at the venue. Around 250 participants from fourteen different states of the country participated in the two days national conference. 70 Oral presentations were presented. Based on different sub themes eleven Technical sessions were concluded along with Plenary Lecture, Keynote lecture and Oral Presentations. Poster presentation by the delegates were also arranged in each session and evaluated by the committee.

In the last, **Dr. Sen**, Organizing Secretary, SASE-2023, gave formal vote of thanks. In his speech, he thanked Chief Guest of two days national conference **Dr. Ved Prakash Singh**, Deputy Director General, Department of Health Research, Ministry of health and Family Welfare, Govt. of India. He also thanked Guests of Honour **Prof. Rabinarayan Acharya**, Hon' able Director General, Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of AYUSH, Govt. of India. The conference ended on high note. Services rendered by the BHU, staff and students of all the partner organizers were commendable.

The conference was declared closed with the permission of Patron after receiving the feed-back from the delegates and National anthem at 6:30 pm on 23.04.2023.

List of issues and action points come up from the National Conference, SASE-2023, BHU, Varanasi

#### **Suggestions and Recommendations:**

1. Youth should come forward to make action plan to save our mother planet.
2. Research on nutrient and water use efficiency need to strengthen especially in rainfed areas owing to

- changing climatic scenario and Location specific technologies may be developed and popularised among farming community.
3. Some policy interventions on fragmented land holdings should come from Govt side to check the ceaseless fragmentation of land holdings in future.
  4. Intervention needed on data base of seed system regarding production, distribution and replacement of quality seed.
  5. Linking of variety development with seed production system needs to be strengthened.
  6. FPOs and seed societies linking with farmers with large membership may be formed and best performing societies may be encouraged by rewarding.
  7. There is need to develop the mechanism to check on unhealthy (especially on quality) trade competition in seed system.
  8. Govt intervention needed on planning, design and management of urban forestry with at least 15% area must be dedicated to create greenery in urban and peri urban areas for environmental security and mitigating the climatic changes.
  9. Environment-friendly, climate smart agriculture like agroforestry for battle against air pollution should be promoted.
  10. More research on drought and water logging tolerance is required.
  11. Policy intervention is needed to promote organic agriculture and natural farming and with commercialization of bio fertilizers and bio pesticides
  12. Nutrient dense crop like *Manilla tamarind*, fodder trees like *Morus alba* and agroforestry for improved soil properties should be promoted.

## Glimpses of SASE-2023











**Report of  
National Awareness Workshop on  
“Mission Life” Celebration of  
WORLD ENVIRONMENT DAY  
5th June, 2023**

**Organised by  
Department of Environmental Studies,  
University of Delhi  
In Collaboration with  
Department of Science and Technology  
Govt. of India  
&  
National Environmental Science Academy,  
New Delhi**

On June 5th, 2023, World Environment Day was enthusiastically observed by our Department of Environmental Studies. The primary goal of the event was

to raise awareness of the need for and methods for environmental protection. This year's World Environment Day has the theme "#beatplasticpollution" as its subject.

At 10:30 am, the National Environmental Science Academy's Director, Dr. Javed Sir, along with Professor Chirashree Ghosh Ma'm, Dr. Shailendra Kumar, Dr. Gyan Prakash, and Dr. Alok Kumar, lit the lamp to start the day in the Auditorium of Department of Environmental Studies. Disposable caps bearing the logos of the Government of India, the University of Delhi, and the Meri LiFE programme, sponsored by Professor Chirashree Ghosh Ma'm, were then distributed. Following that, Mr. Gaurav Barhodiya took over as event host.

Kulgeet from Delhi University was played before Dr. Gyan Prakash sir continued with his speech on mission life and the pledge-taking ceremony was then conducted under his direction. Dr. Javed then gave a persuasive lecture to the group. A discussion on plastic waste management with the title "Beat Plastic Pollution" was given by Mr. Sumant, the

Glimpses of Activities held on Environment Day



founder of the non-profit organisation Lakshay, came next. Students' activities followed this discussion. It began with a lovely poetry by Kamaljeet Kaur and continued with a charming poem by Aradhana Yadav. After then, Kabeer Ali captivated the audience with a heartfelt song (Michael Jackson's "Earth Song").

Then Neha Verma delivered a powerful speech in its place. Following a wonderful Rap by Omeo Biswas, who completely captivated the audience, Aradhana Yadav's Interactive Quiz Session wrapped off the students' activities. A vote of thanks was then given by Dr.

Shailendra Kumar sir. Ribbon cutting for the installation of the plastic bank that Lakshay NGO donated comes next.

Then, Jyoti Prakash, Sumit, Vikas, Preeti, Amal, Adil, and Abhay presented Prof. Chirashree Ghosh Ma'm with 2 environmental models. One was created from plastic rubbish that was gathered from surrounding departments' trash cans and blended to represent the significance of plastic waste entering water bodies.

The second model illustrates just how much plastic is used to cover our blue globe. Tree planting followed, which was

Glimpses of Activities held on Environment Day



New Delhi,DL,India  
University Road, University Area North Campus,



New Delhi,DL,India  
University Road, University Area North Campus,  
New Delhi, 110007, DL, India  
Lat 28.688314, Long 77.211967  
06/05/2023 11:19 AM GMT+05:30  
Note : Captured by GPS Map Camera



New Delhi,DL,India  
University Road, University Area North Campus,  
New Delhi, 110007, DL, India  
Lat 28.688312, Long 77.211883



## Glimpses of Activities held on Environment Day



## Glimpses of Activities held on Environment Day



directed by our beloved HoD Professor Urfi sir, along with Dr. Javed sir and Professor Chirashree Ghosh Ma'm, to start environmental practises in line with Mission LiFE. Two trees, the Pilkhan Tree (*Ficus virens*) and the Ashoka Tree (*Saraca asoca*) were planted. Three groups of students were then formed, each directed by a PhD scholar, and cleaning was done around the department

Professor Chirashree Ghosh Ma'm provided refreshments after we collected all rubbish in a poly bag. 1:30 pm marked the end of the programme.

## Glimpses of Activities held on Environment Day



## AN INTEGRATED SCIENCE AND ARTS WORKSHOP FOR KOLKATA SCHOOL KIDS TO EXPLORE THE JOYS OF SCIENCE

**Saikat Kumar Basu**

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Sri Aurobindo had opined in his 'A system of national education' - "...chemistry may be started by interesting observation and experiments without any formal teaching or heaping on the mind of formulas and book knowledge". At Mirraloke, a learning community (an autonomous unit of Sri Aurobindo Sikshadhara Trust) experimenting with the idea of free progress education, chemistry is introduced along similar lines. On 19th June (2023), conducted by Dr. Saikat Kumar Basu, eminent environmentalist and agriculture scientist, Executive Research Director, PFS, Alberta, Canada, such a session was held with experiments showing reaction of chemical reagents on the daily food we eat like different fruits, vegetables and eggs resulting in



change of colours owing to the degrees of sugars proteins starch and alkaline elements present in the items. This session on chemistry in everyday life was attended with apt attention by the children as well as team of guides at Mirraloke. A model curriculum of introduction to chemistry in everyday life is been drawn up to be implemented henceforth to arouse interest of the children in the subject in future.

This specially designed workshop for the kids to introduce them first time to the joys of exploring science included:



1. Basics of food and nutrition: carbohydrate, protein and fat
2. Dry and wet live chemical analysis of egg white(for protein), fruits and vegetables (proteins and carbohydrates) and fry nuts (fats) such as Milton's test, Barfoed test, Biuret text, Xanthoproteic test, Fehling's test etc.
3. To have basic understanding of elementary pH scale via colour change demonstrations on plant saps and juices

4. Understanding and exploring simple natural fossil preparation in plants and animals;
5. Lastly, understanding simple aspects of plant and animal cell and photosynthesis in plants
6. BioArt- by making creative products out of leaves found in the school garden and campus

This integrated workshop of introduction to science to kids with joys of artwork and storytelling was attended by over 30 plus students, teachers, attendants and the school administration members. The workshop rolled around among shouts of cheers and joys of the kids excited exploring thrills of science with great enthusiasm.

*Photo credit: Partha Sarathi Bose*

## ENROLL YOURSELF TO NESA NEWSLETTER EDITORIAL BOARD MEMBER

Editorial board members of NESA newsletter will be revised for the year 2023. All the interested applicants may send their curriculum vitae to **Editor in Chief** by **15<sup>th</sup> August, 2023**.

**MEMBERS ARE REQUESTED TO PLEASE  
PLANT ONE TREE IN YOUR NEIGHBOURHOOD AND  
SEND US A SMALL BRIEF WITH PHOTOGRAPH OF THE TREE /  
PLANT SO WE CAN PUBLISH IN THE NESA E-NEWSLETTER**



## CAUSES AND CONSEQUENCES OF PLASTIC POLLUTION

Garima Gupta, Ayushi Dwivedi, Shalu Singh, Shristi Keshri, Pradosh Kumar Bhuyan, Rakesh Negi, Pankaj Lavania, Anil Kumar, Manmohan Dobriyal and Pavan Kumar

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Plastic pollution has become one of the most pressing environmental challenges of our time. It poses a grave threat to our ecosystems, marine life, and human health. To address this crisis, concerted efforts are required at all levels, from individual actions to global initiatives. In this article, we will explore the detrimental effects of plastic pollution and highlight some of the key strategies to beat plastic pollution and create a sustainable future.

### The Problem of Plastic Pollution

Plastic, due to its durability and low cost has become an integral part of our daily lives. However, its overconsumption and improper disposal have led to catastrophic consequences. Every year, millions of tons of plastic waste enter our oceans, harming marine life and



The group members raised awareness about the sources, causes, and negative impacts of plastic pollution on the environment. Along with this, the preventative steps to control the plastic pollution include using plastic as little as possible for example, replacing plastic with other organic materials and discarding it in trash cans. It was done by using catchphrases like "Plastic ko hataenge, Dharti ko bachayenge" and "Paryavaran ke liye plastic hai khatarnak, fir bhi nahi karte hum iska vinaash" to encourage people to reduce or stop using plastics and to inform them of the dangers of plastics.

ecosystems. Plastic debris breaks down into microplastics, which are ingested by marine organisms, causing severe health problems and disrupting the food chain. Additionally, plastic waste in landfills and incineration plants contribute to air and soil pollution, further exacerbating the issue.

### Campaign against plastic pollution

On the occasion of the 50th anniversary of World Environment Day, an awareness campaign was organized on June 4th in the campus of Rani Lakshmi Bai Central Agricultural University, Jhansi. At 10:30 in the morning, members of My Social Responsibility (MSR) were gathered in front of Manu Hostel, RLBCAU, Jhansi. Garima Gupta, who serves as our MSR coordinator, was involved in getting the program off the ground. The purpose of putting on this programme was to raise people's awareness about the importance of preserving a clean and pollution-free environment for future generations. A gathering for raising awareness was held in the grounds of Staffs Quarters and got underway at 10:40 in the morning. During this event, members of MSR and coordinators raised awareness of the problem of plastic pollution by displaying a variety of posters and slogans on the subject. The campaign "Beat Plastic Pollution." was the theme for the World Environment Day in 2023.



### Causes and Consequences

The root causes of plastic pollution lie in our society's overreliance on single-use plastics, inadequate waste management infrastructure, and a culture of disposability. Plastic bags, straws, bottles, and packaging are used for minutes but persist in the environment for centuries. The consequences of this unsustainable consumption pattern are dire, affecting human health, biodiversity, and the overall well-being of our planet.

### Towards a Sustainable Future

Beating plastic pollution requires a paradigm shift in our approach to consumption and waste management. It



necessitates a transition to a circular economy where plastics are reused, recycled, or replaced with sustainable alternatives. Embracing sustainable lifestyles, advocating for change, and holding corporations accountable are crucial steps towards achieving a plastic-free future.

#### Conclusion

Beating plastic pollution is an urgent and collective responsibility. By adopting sustainable practices, reducing

single-use plastics, improving waste management systems, promoting innovation, and raising awareness, we can mitigate the impact of plastic pollution on our planet. It requires a joint effort from individuals, communities, industries, and governments to create a future free from the shackles of plastic pollution. Together, we can ensure a healthier and more sustainable planet for generations to come. Let us act now to beat plastic pollution and preserve the beauty and vitality of our ecosystems.

## PLANTING OF SPINE LESS CACTUS (*OPUNTIAFICUS-INDICA*) IN FORESTRY EXPERIMENTAL FARM AREA

**Amey Kale, Manmohan Dobriyal, Pankaj Lavanya and Pavan Kumar**  
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Cactus belongs to the family Cactaceae assimilating about 130 genera. Fast growing and xerophytic Spine less cactus (*Opuntiaficus-indica*) is one of them. As we all know that all cactus are well adapted to arid and semi-arid conditions. It remains evergreen in scorching summer season and capable of surviving in the areas where other plants generally fails. Highly resilient cactus have high water use efficiency. These plant can be used for restoration and reclamation of highly degraded lands, owing to its important attributes such as ability to persist succulent nature during drought like conditions and produce foliage, fruit and capacity to produce other useful products. It has the ability to prevent long term.

In Jhansi district of Uttar Pradesh Livestock are the important source of income generation, especially in rural

areas. Traditionally as forage crops berseem, Sorghum, wheat, Jowar, Bajra, makka are grown in the region and fed to livestock. Jhansi, which comes in Bundelkhand region of Uttar Pradesh faces longer dry seasons, shortage of animal feed, low nutritive value of feed; are some of the problems of the local community. Livestock production, mostly dominated by small ruminants (sheep and goats), is based on a management system where animals are left to roam grazing in open areas. ICAR- Indian Grassland and Fodder Research Institute (IGFRI), Jhansi has estimated that there is deficit of 11.24%, 23.4 % and 28.9% in green fodder, dry fodder and concentrates respectively, in the country.

Hence, unconventional sources of forage have to be explored to feed the livestock. Multi-purpose plants such as spine less cactus (*Opuntiaficus-indica*), adaptable to the local conditions has the immense potential to be utilized as a fodder. At Rani Lakshmi Bai Central Agriculture University, Jhansi, under the Guidance of Honorable Vice Chancellor, Prof A K Singh and Dean, College of Horticulture and Forestry, Dr. M J Dobriyal, plantation of Fodder cactus for demonstration purpose was taken up in University Experimental Farm Area, on the last day of Week-long **Van Mahotsav 2023**. Fodder cactus was planted on degraded lands under the supervision of Dr. Amey Kale. Dean College of Fisheries, Dr. Behra, Dr. Ramprakash Yadav, Dr. Pankaj Lavania, Dr. Pavan Kumar, Dr. Vijilakshmi,

Dr. Garima, Dr. Alka was present for the plantation program.



*Opuntia ficus-indica* is popular due to their unique and attractive appearance, as well as their ability to thrive in arid or semi-arid environments. Here are some steps to guide in planting *Opuntia ficus-indica*:

1. **Select the right variety:** There are several species and varieties of spineless cacti available, so choose one that is suitable for your climate and the available space. Some popular spineless cactus varieties include *Opuntia ficus-indica* and *Opuntia engelmannii*.
2. **Choose a suitable planting location:** Spineless cacti require full sunlight for optimal growth, so select a location in your garden or landscape that receives at

least six hours of direct sunlight each day. Ensure the soil is well-draining to prevent waterlogging, as cacti are susceptible to root rot in overly wet conditions.

3. **Prepare the soil:** Before planting, prepare the soil by loosening it with a garden fork or tiller. Remove any weeds or rocks and incorporate organic matter, such as compost, to improve soil fertility and drainage. Spineless cacti can tolerate a wide range of soil types but prefer well-draining sandy or loamy soils.
4. **Dig the planting hole:** Dig a planting hole that is slightly larger than the size of the cactus container or root ball. The depth should be such that the cactus will be



planted at the same level it was in the container. If planting multiple cacti, space them at least two to three feet apart to allow for their mature growth.

5. **Plant the cactus:** Carefully remove the spineless cactus from its container, taking care not to damage the roots. Place the cactus in the planting hole and backfill with the prepared soil, gently firming it around the base of the plant. Ensure that the cactus is planted upright and stable.
6. **Watering and establishment:** After planting, water the cactus thoroughly to settle the soil and help the plant establish its roots. However, avoid overwatering, as cacti are adapted to dry conditions and can be susceptible to rot if kept consistently wet. Water the cactus sparingly, allowing the soil to dry out between waterings.

7. **Maintenance:** Spineless cacti are relatively low-maintenance plants. Once established, they require minimal watering, especially in periods of rainfall. Apply a layer of mulch around the base of the cactus to help retain moisture, suppress weeds, and regulate soil temperature. Pruning is generally not necessary for spineless cacti unless there are damaged or diseased parts.
8. **Protection and care:** While spineless cacti are devoid of spines, they may still have tiny glochids (hair-like structures) that can irritate the skin. Use thick gloves or tongs when handling cacti to avoid contact with glochids. Protect the cactus from extreme cold or frost by covering it or moving it indoors if necessary.

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