



SOCIETY FOR ETHNOPHARMACOLOGY, INDIA **(SFE - INDIA)** **NEWS LETTER**

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Editorial

The World Health Organization (WHO) defines traditional medicine as "the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness". About 80 percent population in Asian and African countries depends on Traditional medicines especially in rural areas. The role of traditional healers cannot be ignored in the healthcare of the under developed and developing nations. An attempt has been made by the Society for Ethnopharmacology, India since last few years to focus the traditional healers as health providers and efforts have been made to inculcate scientific rationale in the existing traditional practice to make it more acceptable to the people. Hope this endeavour will help in developing overall healthcare system of the under developed and developing nations.

Dr. Subhash C. Mandal, Editor.

Secretary's Desk

Dear Friends,

Welcome you all to the 4th Convention of Society for Ethnopharmacology-India, National Symposium on "Ashwagandha" and EP Conclave on "Uses of Medicinal plants by Traditional Healers – Local Health Tradition" being organized by the School of Natural product Studies, Jadavpur University, Kolkata during September 09-10, 2017. This year the theme of the convention is on Ashwagandha, which is an important medicinal plant used in Ayurveda. Experts will discuss on this plant specially on drug development in every way.

To recognize the Local Health Tradition SFE has taken the initiative to organize special program with the traditional healers from different parts of India and bring them to the lime light of scientific field for utilization of their expertise for the betterment of natural product research towards drug discovery and development.

I would like to request all of you to contribute for different activities of the society and explore the opportunities.

Prof. Pulok K Mukherjee, Secretary.

Report on National Conference

“Traditional Community Health Practitioners for Conservation of Lokswasthya parampara”

Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, recently organized a “National Conference of Traditional Community Health Practitioners for Conservation of Lokswasthya parampara” on 22nd July 2017 in association with Maharashtra State Biodiversity Board, Forest Development Corporation of Maharashtra, at Mission India Campus, Khadgaon, Nagpur. This program of National significance was being patron by Society for Ethnopharmacology (SFE India) Nagpur Chapter, FRLHT Bangalore, Quality Council of India, World Ayurveda Foundation, Nutrition Society of India and many Healer Associations across India and was attended by about 800 delegates comprising healers, physicians of various systems of healthcare, scientists, researchers from various institutes and students.

Dr. Mrs. Jasmine Gev Avari, Head, Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur gave brief introduction of the conference and welcomed all the dignitaries and delegates of the conference. The Chief guest of the conference Dr. Ved Prakash Mishra, Chancellor, Krisha Institute of Medical Sciences, Karad explained how health care is being given through the traditional healers to the rural India. He emphasized on importance of protection, conservation, affiliation and certification to the traditional healing practitioners and their practices. Documentation of the traditional knowledge followed by research in the laboratories and relevant clinical trials will help to establish this system in future, he said. Guest of Honor, Shri Jaykumarji, National Secretary General, Vijnana Bharati gave suggestions that the traditional healing must be provided by traditional Universities through short term courses in few identified colleges. He said only by this way the ancient health science can be passed on to next generation.



To achieve it, Government can identify few good traditional healers from different parts of India and appoint them as consultants or teachers in public Universities. Prof. Hariramurthy, Advisor Transdisciplinary University, FRLHT, Bangalore highlighted the importance of Lokswasthya Parampara Abhiyaan in light of dwindling numbers of traditional healers across India due to apathy from the Government and Community both. Under the umbrella organization like FRLHT, he wishes to bring all those traditional health practitioners to the main stream of Healthcare in association with many likeminded organizations. Key note speaker, Prof. Pulok K. Mukherjee, Director School of Natural Product Studies identified the shortcomings in the existing system of scientific research that led to failure in substantiating the traditional system of medicine. In his address he gave a comprehensive solution to tackle this problem wherein, he highlighted the importance of holding straight dialogues with the traditional health care practitioners. He insisted that the research in this field is possible only when the practitioner opens up and share the practical knowledge of medicines they uses. He advocated good confidence building measures, documentation of traditional knowledge, proper scientific studies, clinical evidences and intellectual property protection involving the traditional healer need to be practiced. Dr. B. Sesikaran, President, Nutrition Society of India in his address highlighted the failure of traditional community health practices in semi-urban or urban areas as they cannot tell scientifically how and why their formulations heals. He emphasized upon forging an alliance of scientists from various streams to generate scientific data which will help validate the claims made by TCHPs. He suggested that the Government must start clinical trials of traditional medicine in an equally distributed population.

Dr. Satish Gogulwar, Project Director, NGO 'Amhi Amchya Arogyasathi' Kurkheda Dist. Gadchiroli shared his experience while working with these traditional healers in the remote Gadchiroli region that we must understand them, have compassion and respect for them and we must keep doing things like- organizing them, connecting them to scientific world and empowering them in the world of health care.

The presentation of Dr. Debjani Roy and Ms. Sona Sharma, Senior Advisors, Quality Council of India created awareness about Voluntary Certification Scheme for the TCHPs. The Scheme will assist the TCHPs living in rural communities including the far flung and difficult terrains; to get them assessed against a Minimum Competency Standard framework which has the flexibility to accommodate diversity of knowledge and skills of the TCHPs across the country in various streams of traditional healthcare practices. The healers representative Shri. Nirmal Kumar Awasthi, Secretary Chattisgarh Healers Association said it is essential to spread awareness about the value of heritage of Lokswasthya paramparas amongst rural and urban citizens in the country. He insisted upon identifying and creating national, regional and state level nodal centres and enable them to conduct research, training and capacity development of healers in different regions and states of the country so as to make use of their treasure of knowledge.

In a panel discussion of TCHP led by Shri Sukhlalji from Dhanbad, Jharkhand, they shared their experiences and expectations. They highlighted the need for conservation of forest through Government initiatives and community participation. They also expressed their willingness to share their knowledge in this field. Some of them informed the delegates about their clinical successes in the management of diseases like- diabetes, tumors, bone setting, jaundice, acidity etc. All of them were thankful to the initiative made by Department of Pharmaceutical Sciences along with Society for Ethnopharmacology India (Nagpur), FRLHT, QCI, Nutrition Society of India (Nagpur) and efforts made therein to integrate various stakeholders. In the valedictory program Dr. Prakash Itankar proposed vote of thanks and acknowledged the Co-organizers, associates, healers, scientists, students, researchers and the Press for giving wide publicity. The programme was nicely organized under able leadership of Convener of the Conference Dr. Prakash Itankar, Coordinator (SFE India) Nagpur Chapter, Organising Secretary Dr. Nishikant Raut and Dr. Dadasaheb Kokare. Overall it was a successful programme and received overwhelming response from the delegates and healers from the different states.

A Novel Anthelmintic from Medicinal Plants: Cysteine Protease

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Intestinal helminth infections of livestock and humans are predominantly controlled by treatment with three classes of synthetic drugs, but some livestock nematodes have now developed resistance to all three classes and there are signs that human hookworms are becoming less responsive to the two classes (Benzimidazoles and the Nicotinic acetylcholine agonists) that are licensed for treatment of humans.

Development of new synthetic drugs is ongoing, it is slow and there are no signs yet that novel compounds operating through different modes of action, will be available on the market in the current decade. The development of naturally-occurring compounds as medicines for human use and for treatment of animals is fraught with problems. Cysteine proteinases from fruits and protective plant latices can be developed as novel anthelmintic, even though some of the problems inherent in taking laboratory findings and those derived from folk-medicine to the market and that there is a wealth of new compounds still to be discovered that could be harvested to benefit humans and livestock.

Intestinal nematodes are also important pathogens of humans mainly four species dominate: *Ascaris lumbricoides*, *Trichuris trichiura* and the two hookworms *Ancylostoma duodenale* and *Necator americanus*. Global estimates of disability adjusted life years lost to infection are almost 5 million with some 3 billion people around the world believed to carry some of the species involved.

Medicinal plants and the problems of developing their active principles as novel medicines: An alternative is to exploit naturally-occurring compounds that exist in plants and trees and in their seeds and fruits. Medicinal plants and fruits have been used by indigenous people for centuries as sources of extracts used in the treatment of a variety of problems, including infectious diseases and those caused by parasites, in livestock and humans. These are often referred to as ethno-veterinary or ethno-medical remedies, and, in general, they are shunned by traditional, conventional western medicine.

There have been considerable efforts to identify the active ingredients and indeed some are well known, but, to a large extent, few have lived up to their expectations when tested rigorously, and even fewer have been found to have curative properties that can compete effectively with synthetic drugs.

Some exceptional natural products have become widely accepted. Quinine for the treatment of malaria is an obvious example, as is artemisinin or quinghaosu from *Artemisia annula*. Penicillin is a fungal product and indeed ivermectin itself is a bacterial product, being derived from the soil bacterium *Streptomyces avermitilis*. Among plant derived molecules that have anti-parasitic activity and have been used as veterinary parasiticides at times there are nicotine, pyrethrum and rotenone. The former two provided templates for the development of synthetic mimics which include the pyrantel group for nematodes and synthetic insecticides, respectively.

However, there are no naturally-derived plant products sold commercially in the markets of the developed nations of the world for the treatment of worm infections. If natural plant products are to be exploited in the future as medicines for human use or for the treatment of livestock, then isolation and characterization of their active principles becomes an essential prerequisite to further progress. Problems which follow include development of methods for their stabilisation, preservation, formulation, delivery etc., and all this requires enormous development costs and many years of patient work. Furthermore, the necessary clinical trials of efficacy (randomised, double-blind, placebo-controlled) and essential safety trials add to the delay before drugs become available for treatment, and enormously to the costs sustained by developers.

Although contemporary laboratory techniques may help to identify the active compounds and solve some of the initial problems referred to above, the ultimate developmental costs are dependent on investment by industry. For many medicinal plants, there is already too much published information in the public domain to enable compounds to be patented securely, although if structure has not been disclosed, patenting is possible. Moreover, it is very clear to us that there is a conflict between disclosure as part of academic research (publish or die!) and secrecy to ensure patentability in the longer term. These are real obstacles to investment by industry, and an anomaly of the system that is hindering progress in a world where novel drugs are urgently required. There are of course other problems that deter pharmaceutical companies from exploiting plant derived medicines. These include variability in the concentration of active principles in relation to how the plants were grown, climate, soil quality, site, and season of the year. Additionally, governments may charge fees to access sources of relevant plants, and royalties for their exploitation and these charges may eat into profits, discouraging investment and development. An alternative avenue might be to develop natural products as food additives. Whole plants, leaves, stems, fruits and seeds containing activity against worms could be incorporated into feed without loss of organic status. This would be more acceptable where the whole plant is itself a suitable food for the target animals, as in the case of fruits, but perhaps less so where the only benefit of eating would be from the medicinal principles, since plants, like all biological material, are extremely complex and may contain thousands of molecules, only some of which would bring benefits while others may be toxic.

Medicinal fruits containing cysteine proteinases Some of the earliest known medicinal anthelmintic plants include papaya (*Carica papaya*), figs (*Ficus* spp.) and pineapple (*Ananas comosus*). Anecdotal reports of their usage for the treatment of worm infections by the native inhabitants of Panama and South America stretch back to over a century ago. Their extracts were shown to be highly effective in clearing the most obstinate of human intestinal worms, *Trichuris trichiura*, in the 1920s and more effectively than any of the current synthetic drugs. Indeed, European doctors used papain and papaya latex for the treatment of worms in the 19th century. It was not until the 1930s that they were shown to be actually capable of digesting nematodes and their enzymic basis was discovered. The active principles are now known to be cysteine proteinases (CP) that occur naturally in various parts of the plant, and in plants. For example, in pineapples, different combinations of enzymes occur in the stem, and in the fruit. The latex of both papaya and figs contains CPs. These plant-derived CPs probably evolved primarily to defend plants against insect pests but possibly also against plant parasitic nematodes, against which they are likewise highly effective. Among the other important roles of CPs are facilitating the coagulation of latex during the sealing of wounds on plants, leaf senescence and possibly also in the ripening process. They are also known as thiol proteases are enzymes that degrade polypeptides. These proteases share a common catalytic mechanism that involves a nucleophilic cysteine thiol in a catalytic dyad. Cysteine proteases are commonly encountered in fruits including papaya, pineapple, fig and kiwifruit. The proportion of protease tends to be higher when the fruit is unripe. In fact, dozens of latices of different plant families are known to contain cysteine proteases. Cysteine proteases are used as ingredients in meat tenderisers.

Globalization of Local Health Tradition – An initiative of SFE-India

Traditional Medicine includes the longstanding remedies passed on and practiced by the traditional health practitioners (THP) for prevention and treatment of diseases and is composed of several systems of medicine from different parts of the world. It has been estimated that two-thirds of the world's population seek healthcare from sources other than conventional biomedicine, while many of these individuals undoubtedly seek their remedies from nature. The traditional medicinal products scientific documented evidence of safety and efficacy is inadequate whereas these products have been used for centuries. Scientific validation and documentation is the major need to demonstrate safe, effective and consistent use of traditional medicines.

In different parts of India, primary healthcare of the rural population, have been traditionally managed with herbal remedies, at home and are being taken care of by the village based, Traditional Community Health Practitioners (TCHPs). Local Health Tradition of primary health practices, transmitted through an incredibly effective system of oral transmission inherited through family lineage. The TCHPs are the repository of diverse, region, ecosystem and ethnic community specific, knowledge, skill and experience. Traditional health practitioners are conserved due to their communication problem to main stream of the society and they are also not recognized by the common people due to lack of scientific evidence of their traditional practices. SFE has taken the initiative to recognize them and bring them to the lime light of scientific field to enrich the healthcare of the society. SFE used to organize workshops in different parts of India, where several scientists, technologists, doctors, government officials from different parts of the world shared their experiences with the THPs based on their different traditional healthcare practices with varied culture and biodiversity for the betterment of the healthcare system. To recognize the traditional practices, SFE has proposed a global platform to explore and disseminate the ethnopharmacological knowledge in the development of ethnic health care practices. SFE has already identified some traditional healers and taken several steps to promote their expertise, so that their expertise could be utilize by the people in large extent. On the other hand those healers could earn more to be self-reliant. SFE have already identified tribal healers from different parts of India and expanding our activities some more tribal areas in future. Society of Ethnopharmacology (SFE) is dedicated for the dissemination of knowledge and information through different educational programmes throughout India and also to serve as a bridge between industry and academia for development of products, process for value addition and promotion of medicinal plants as well as herbal medicines used in ancient systems of medicine and folklore and sharing of experience on the scientific evaluation of Ethnopharmacology for betterment of healthcare of the society. To promote the Local Health Tradition and explore the knowledge of Traditional Community Health Practitioners through interaction with the scientists, doctors, medicinal plant cultivators, regulatory personals for the drug development from natural resources of India. SFE has undertaken several conferences, meeting, Seminar to recognize the Local heath Tradition worldwide.



**5th International Congress of SFE-India &
18th International Congress of ISE on
“Ethnopharmacology and Drug Development:
Innovation meets Tradition”**

Join the Congress & Explore the opportunities

Dear friends

It is our great pleasure to inform you that the 18th International Congress of International Society for Ethnopharmacology (ISE) & the 5th International Congress of the Society for Ethnopharmacology (SFE), India (ISE-SFEC 2018) is being organized by the Faculty of Pharmacy, University of Dhaka in association with Society for Ethnopharmacology, India during January 13-15, 2018 at Dhaka, Bangladesh. Main theme of the congress is on Ethnopharmacology & Drug Development: Innovation meets Tradition”. We would like request you to join this international congress being organized for the first time between ISE and SFE at Dhaka, Bangladesh.

We expect a huge numbers of delegations to join the congress at Dhaka. We would request you to kindly encourage your colleagues and students to join this congress and submit abstract for scientific oral and poster presentations. This is an event to highlight their work to the international fraternity which will be represented by over 30 countries.

We are sure your esteemed participation in this event will enrich the congress through the knowledge dissemination on education and research for promotion and development of Ethnopharmacology and Medicinal plant research in a positive way.



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Registration of Indian Delegates for ISE SFE 2018:

Local organizing Committee of the congress in consultation with SFE India has agreed for a special offer for registration for Indian delegates only, to join the congress at Dhaka, Bangladesh.

To avail this special offer for Indian delegates to join the ISE-SFEC-2018 Congress; please contact SFE-India, Kolkata

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UPCOMING EVENTS OF SFE- INDIA

ISE-SFEC 2018



18th International Congress of International Society for Ethnopharmacology
www.ethnopharmacology.org

5th & International Congress of Society for Ethnopharmacology, India
www.ethnopharmacology.in

Dhaka, Bangladesh; January 13-15, 2018

"Ethnopharmacology & Drug Development: Innovation meets Tradition"

Organized by

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Report on SFE-India meet for “Promotion of Ethnomedicine”

Society for Ethnopharmacology (SFE) meet for promotion of Ethnomedicine was organized on 5th August 2017 at Poona College of Pharmacy, Bharati Vidyapeeth University, Pune. The meet was organized with an objective to discuss various issues related to promotion of ethnomedicines. Dr. P.K Mukherjee, Secretary SFE India participated as the chief guest of the event. Dr. K. R. Mahadik, Principal of Poona College of Pharmacy presided over the event in the august presence of Dr. M. D. Burande, President, Indian Pharmaceutical Congress, Dr. P. D. Chaudari, President of Association of Pharmacy Teachers of India (APTI), Dr. D Chattopadhyay, Director, ICMR-National Institute of Traditional Medicine, and Dr. D Chakraborty, former Vice President, Pharmacy Council of India (PCI). Dr. L. Sathiyarayanan, Co-ordinator of SFE Pune chapter delivered welcome address and briefed about the SFE Pune chapter activities. All the dignitaries had addressed and emphasized the importance of promotion of ethnomedicine. Around 24 Pharmacy colleges in and around Pune have participated in the event.



Various decisions including dissemination of knowledge through workshops, seminars and conference; survey of ethno use of medicinal plants has been made during the event. At the end, Dr. Arulmozhi, Poona College of Pharmacy delivered vote of thanks. The event was organized by Dr. L. Sathiyarayanan, co-ordinator of SFE India Pune Chapter.

Dr. Nishikant A. Raut, Faculty, RTM Nagpur University completed prestigious UGC-Raman Fellowship for Post-Doctoral Research in USA



Dr. Nishikant A. Raut, Assistant Professor (Sr. Gr.) from Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University conferred with prestigious Raman Post-Doctoral Fellowship for the year 2015-16 in USA by UGC, Govt. of India for the period of 9 months. He completed his Post-Doctoral research at Department of Pharmacy Practice, College of Pharmacy, University of Illinois at Chicago under Dr. Gail Mahady, Director, Clinical Pharmacognosy Division. His post-doctoral research was on establishing mechanism of dietary anthocynins in the treatment of osteoporosis using transgenic medaka fish model.

He has handled 2 research projects till date having 16 international and 2 national publications in peer reviewed journals of repute including 2 book chapters to his credit. Dr. Raut is Jt. Coordinator for SFE (India), Nagpur Chapter. He conveyed his gratitude to the SFE, especially to Dr. Pulok K. Mukherjee in getting Dr. Mahady as mentor for his post-doctoral research.



SOCIETY FOR ETHNOPHARMACOLOGY (SFE-INDIA)

“Globalizing local knowledge and localizing global technologies”

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