

**INTERNATIONAL WORKSHOP ON  
HERBAL MEDICINAL PLANTS AND TRADITIONAL HERB REMEDIES,  
HANOI (VIETNAM), SEPTEMBER 20-21, 2007**

**PARTICIPATING COUNTRIES: 19 COUNTRIES (INCLUDING 12 MEMBER COUNTRIES AND 1 INDUSTRY NETWORK MEMBER OF THE CENTRE**

**NUMBER OF PARTICIPANTS: EXPERTS AND INDUSTRY REPRESENTATIVES FROM 19 COUNTRIES INCLUDING 34 SENIOR FOREIGN PROFESSIONALS AND SEVERAL VIETNAMESE SCIENTISTS**

In almost all the countries, herbs and traditional medicines have been extensively used since times immemorial for healthcare. Ancient religious texts are replete with references on the use of natural products with medicinal properties. Because of the local beliefs and practices and also from cost considerations herbal medicines remain a popular mode of treatment in the developing countries. In the industrialised society also, the rising cost of prescription drugs and ensuing side effects of the treatment makes it highly attractive to use the traditional medicine, particularly for minor ailments.

Modern system of medicine is based on sound experimental data, toxicity studies and human clinical studies. However, in case of herbal medicine, pharmacopoeia standards on herbal products are usually not available; standardization and quality control parameters for the raw material as well as for the finished products are virtually non-existent; current Good Manufacturing Practices (cGMP) for the herbal manufacturing industry are usually not well defined nor the barest minimum standards of medicinal plant products maintained or regulated; and the quality of finished herbal products is often not monitored hence does not comply with existing specifications. In addition, even though almost all the developing countries, specifically those sitting in the tropical belt, are a rich and abundant source of flora and phytopharmaceuticals, due to a huge public demand and also because a large number of modern drugs are extracted and developed from the plants, many medicinal plants are either getting scarce or are on the verge of extinction resulting into genetic erosion. If this trend continues, the human race will lose some of the most important sources of future drugs, which will be lost by the mankind forever.

As such, there is an urgent need for the developing countries to take a fresh look at the status of medicinal plants, take up sustainable harvesting by balancing the commercial demand with the conservation of valuable plants. They should contribute to biodiversity proliferation by initiating extensive activities for the preservation of germplasm. In addition, they should develop their own technologies for processing of the crude drugs into quality assured products and export only finished products to the developed countries. It is imperative that the standards and information required by the regulatory bodies of those countries be complied with. Also to meet the increasing demand of raw materials for herbal medicines, important medicinal plant species should be domesticated and cultivated in fields based on advanced agricultural technologies instead of collecting them from wild sources (Wildcrafting).

Developing countries should strengthen their R&D efforts especially in the area of cultivation (which include agronomical techniques), use of modern tools of genetics and plant breeding, plant biotechnology, natural product chemistry, pharmacology and chemical engineering. If properly exploited with the modern tools of science, the developing countries would increase their foreign exchange earnings considerably from export of products of medicinal plants and could also provide modern healthcare to the teeming rural population of these countries.

Finally, it is evident that if herbal medicines are to penetrate the global market, adequate quality assurance is a dire necessity through which consumers could be assured that they do not contain ingredients that may be toxic nor have adverse actions than the therapeutic claims for such drugs.

In order to address some of the pertinent issues and the latest status of development related to herbs and traditional medicines, the Centre for Science and Technology of the Non-Aligned and other Developing Countries (NAM S&T Centre) organised an international workshop on Herbal Medicinal Plants and Traditional Herb Remedies, during 20-21 September 2007 at Tay Ho Hotel in Hanoi, Vietnam jointly with the Institute of Natural Products Chemistry (INPC) of Vietnam and with the support and patronage of the Ministry of Science and Technology (MOST) and the Vietnam Academy of Science & Technology (VAST).

After the Welcome Remarks by Prof. Dr. Chau Van Minh, Vice President of VAST and Director of INPC and addresses by Prof. Arun P. Kulshreshtha, Director, NAM S&T Centre and Dr. Thai Van Tan, Deputy Director General (ICD), MOST, the workshop was inaugurated by H.E. Prof. Dang Vu Minh, President of VAST in absentia, whose inaugural remarks were read by Prof. Phan Van Quy, Vice President of VAST. Mr. Nguyen Gia Lap, Vice Director of ICD, VAST conducted the proceedings of the Inaugural Session.

The overall technical programme of the workshop was coordinated by Dr. Le Mai Huong, Deputy Director, INPC, who was also present on the dais during the Inaugural Session and was attended by the experts and industry representatives from 19 countries including 34 senior foreign professionals and several Vietnamese scientists. The overseas participants were from Bangladesh [Prof. Choudhury Mahmood Hasan, Chairman, Bangladesh Council of Scientific and Industrial Research (BCSIR)], Bhutan [Dr. Phurpa Wangchuk, In-Charge, Pharmaceutical & Research Unit and Natural Product Chemist, Institute of Traditional Medicine Services, Ministry of Health], Brunei Darussalam [Dr. Chua Kui Hong, Senior Pharmacist, Department of Pharmaceutical Services, Ministry of Health and Dr. Nurolaini Pg Haji Muhd Kifli, Lecturer, Institute of Medicine, University Brunei Darussalam], Egypt [Dr. Mona Hafez Hetta, Lecturer, Pharmacognosy Dept., Beni-Sueif University], Germany [Prof. Dr. Martin Hofrichter, Deputy Director, International Graduate School, Zittau and Dr. Ulrich Rene, International Graduate School, Zittau], India [Dr. Palpu Pushpangadan, Director General, Amity Institute for Herbal & Biotech Products Development (AIHBPD), Thiruvananthapuram; Dr. (Mrs.) Samadun Nisa Khan, Scientist 'F', Drugs and Pharmaceuticals Research Programme (TDT Division), Department of Science and Technology (DST), Government of India; Dr. Ariyamuthu Sarswathy, In-Charge, Captain Srinivasa Murti Drug Research Institute for Ayurveda, Arignar Anna Government Hospital Campus, Arumbakkam, Chennai; Dr. Bishan Datt Gupta, Scientist 'F', Natural Product Chemistry Division, Indian Institute of Integrative Medicine (IIIM), Jammu; Dr. Chandrasekaran Rajasekaran, Senior Lecturer, School of Biotechnology, Chemical & Biomedical Engineering, Vellore Institute of Technology; Dr. Lancelot D'Cruz S.J., Vice-Principal & Lecturer, St. Xavier's College, Ahmedabad; Dr. Manoranjan Sahu, Professor and In-Charge, Shalya Tantram, Institute of Medical Sciences, Banaras Hindu University, Varanasi; Dr. Mridula Singh, Consultant, Swami Harshankaranand Hospital and Research Centre, Varanasi; Dr. Om Prakash Singh, Senior Lecturer, Department of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University; and Mr. Tariq Ahmad Butt, SSA (Bot.), RRIUM, Srinagar], Indonesia [Mrs. Adriana Marthiany Lubis, Head, Medicine and Nutrition Division of the Deputy Minister for Program Development, Ministry of Research and Technology], Italy [Dr. De Leo Marinella and Dr. Agata Maria Pawlowska of the Department of Chemical Bioorganic and Biopharmacy, University of Pisa], Republic of Korea [Prof. Young Ho Kim, College of Pharmacy, Chugnam National University, Daejeon and Prof. Won Keun Oh, College of Pharmacy, Chosun University], Lao PDR [Prof. Dr Bounhong Southavong, Director, Traditional Medicine Research Center, Ministry of Health], Mauritius [Prof. Theeshan Bahorun, Associate Professor, Department of Biosciences, University of Mauritius], Mongolia [Mr. Mendsaikhan Zeveg, President, United Association of Mongolian Private Health Providers, Mong-em Co. Ltd, Traditional Mongolian Medicines; Dr.

Chimedragchaa Chimedtseren, Director, Traditional Medical Science and Technology and Production Corporation of Mongolia (TMSTPCM); and Dr. (Mrs.) Altangerel Altantsetseg, Head, International Relation Department, TMSTPCM], Myanmar [Dr. Soe Soe Win, Lecturer, Department of Engineering Chemistry, Mandalay Technology University], Nepal [Dr. Chirinjivi Regmi, Chief, Faculty of Science, Nepal Academy of Science and Technology], Nigeria [Mr. Emmanuel Adikwu Orgah, Chief Research Officer, Nigeria Natural Medicine Development Agency, Federal Ministry of Science and Technology], Sri Lanka [Prof. Tuley De Silva, President, Pharmaceutical Society of Sri Lanka and Dr. Madampe Hettiarachchige Anurakumara Tissera, Associate Professor, Gampaha Wicramarachchi Ayurveda Institute, University of Kelaniya], Tanzania [Dr. Ester Innocent, Assistant Research Fellow, Muhimbili University College of Health Sciences] and Turkey [Prof. K. Husnu Can Baser, Head, Pharmacognosy Department, Faculty of Pharmacy, Anadolu University], most of who made their presentation during the event. 100 Vietnamese scientists from the host country included the Heads and senior experts from the Institute of Natural Products Chemistry, Institute of Chemistry, Institute of Ecology & Biological Resources and Institute of Biotechnology, Department of Planning and Finance of VAST, Military Academy of Medicine, National College of Pharmacy, National Institute of Malariology, Parasitology & Entomology, Institute of Materia Medica, National University of Hanoi, Hanoi University of Technology and Universities of Vinh and Tay Bac, and Animal Biotechnology Company.

The workshop was conducted in seven technical sessions with co-chairpersons of the respective sessions being Prof. Choudhury M. Hasan (Bangladesh) and Prof. Dr. Pham Quoc Long (Vietnam); Prof. Bounhong Southavong (Lao PDR) and Prof. Dr. Tran Van Sung (Vietnam); Prof. P. Pushpangadan (India) and Prof. Dr. Le Khanh Thuan (Vietnam); Dr. Mandsiakhan Zeveg (Mongolia) and Prof. Young Ho Kim (Republic of Korea); Prof. Dr. K. Husnu Can Baser (Turkey) and Dr. Le Mai Huong (Vietnam); Prof. Tuley De Silva (Sri Lanka) and Prof. Dr. Martin Hofrichter (Germany); and Prof. Manoranjan Sahu (India) and Prof. Dr. Nguyen Van Hung (Vietnam).

Plenary lectures in the workshop were delivered by Dr. Le Mai Huong (on 'Recent Work at INPC on the Search for Bioactive Components from Natural Sources'), Prof. Tuley De Silva (on 'Traditional Medicine in the Developing and Developed Countries and Expected Trends in Future' and 'Regulation of Herbal Healthcare Products'), Dr. P. Pushpangadan (on 'Medicinal Plants / Traditional Medicine and IPR Protection' and 'Quality Control and Standardisation of Medicinal Plants and Herbal Drugs'), Prof. Choudhury M. Hasan (on 'New and Interesting Compounds from Bangladeshi Medicinal Plants'), Dr. K. Husnu Can Baser (on 'Most Widely Traded Plant Drugs of Turkey'), Prof. Dr. Martin Hofrichter (on 'Peroxygenases: New Extracellular Mushroom Enzymes which oxygenate Aromatic Compounds'), Dr. (Mrs.) S. N. Khan (on 'India - Reaping the Riches from Medicinal Plants for Development of Globally Acceptable Traditional Herb Remedies'), and Dr. Emmanuel Orgah (on 'Herbal Medicines: from Research to the Production Line').

The participants from Vietnam, who made scientific presentation during the workshop, were Prof. Dr. Phan Tong Son (on 'Biologically Active Ent-kaurane Diterpenoids from *Croton Tonkinensis* (Euphorbiaceae)'), Prof. Dr. Nguyen Van Hung (on 'Chemopreventive Activity of Chemical Constituents for Vietnamese Medicinal Plant *Ban Chi Lien* (*Scutellaria barbata* D. Don)'), and Dr. Le Viet Dung (on 'In Vitro Investigation of Wound Healing Properties of *Alocasia Odora* (Roxb.) Koch').

Among the overseas speakers Dr. P. Wangchuk made a presentation on 'the Herbal remedies and utilization of medicinal resources in Bhutan'; Dr. C. Regami on 'Status of Medicinal Plants and Prospects of Their Cultivation in Dang'; Dr. Mona H. Hetta on 'Effect of *Hyphaene Thebaica* (Doum) Fruits on Spermatogenesis'; Dr. O.P. Singh on 'Hepato-Protective Action of Triphala on Hepatitis-B: An Experimental and Clinical Study'; Prof. T. Bahorun on 'Mauritian Endemic Medicinal Plants: Screening and Molecular Prophylactic Actions'; Dr. Soe Soe Win on 'Research on Some Indigenous Medicinal Plants of Myanmar'; Prof. M. H. A. Tissera on 'Effect of the Combination of Black Seed and Garlic on

Hypercholesterolemia'; Dr. E. Innocent on 'Identification of Interaction of Mosquito Larvicidal Compounds from *Lantana Viburoides* ssp. *Viburoides* var. *Kisi* by Using Substraction Bioassay'; Dr. Lancelot D'Cruz SJ on 'Socioeconomic Development and Traditional Medicinal Knowledge Protection in Relwa, Dediapada and Nani Singloti Villages'; Prof. B. Southavong on 'Introduction of the Studies of Medicinal Plants and Traditional Medicine Remedies in the Lao People's Democratic Republic'; Dr. C. Rajasekaran on 'Traditional and Modern Applications of *Azadirachta Indica* & *Aegle Marmelos* – Vital Trees of South India'; Dr. Mridula Singh on 'Studies on Breast Cancer in Relation to Human Constitution (Prakriti)'; Prof. Won Keun Oh on 'Protein Tyrosyne Phospatase I-b Inhibitory Constituents from *Erythrina* spp'; Dr. N. Pg Haji M. Kifli on 'Perceptions, Attitudes and Practice on Traditional Medicines among Bruneians – A Pilot Study'; Dr. B. D. Gupta on 'Chemoprofiling and Bioefficacy Evaluation of Herbal Drugs and Formulations Pre-treated by Gamma Radiation for Microbial Decontamination'; Dr. M. Sahu on 'Management of Recurrent and Difficult Fistula in Ano by Khshara Sutra (Chemical Seton)'; Prof. Dr. M. Hofrichter on 'Peroxygenases: New Extracellular Mushroom Enzymes which oxygenate Aromatic Compounds'; Dr. K. H. C. Baser on 'Most Widely Traded Plant Drugs of Turkey'; Mr. Tariq Ahmad Butt on 'Present Status and Role and Future Prospects of Some Frontline Medicinal Plants in the Folk Medicine of Kashmir Himalaya'; and Dr. Ariyamuthu Sarswathy on 'Status of AYUSH and Standardization of Herbal Drugs'. Dr. Chua Kui Hong, Mrs. Adriana M. Lubis, Mr. Mandsiakhan Zeveg and Dr. Emmanuel Orgah presented the respective country reports on Herbs and Herbal Medicine in Brunei Darussalam, Indonesia, Mongolia and Nigeria.

An Interactive Session was held before the conclusion of the workshop with Dr. Le Mai Huong, Prof. Choudhury M. Hasan, Dr. P. Pushpangadan, Prof. Tuley De Silva, Dr. K. Husnu Can Baser and Dr. Mandsiakhan Zeveg as the Panellists. In this session Prof. Arun P. Kulshreshtha briefly spoke on the NAM S&T Centre and its facilitating mechanisms to promote South-South cooperation in science and technology. There was a brief brainstorming on the need for IPR protection, mapping of flora, digital data base of flora, gene and germplasm banks, bioprospecting, maintaining inventory, training by using UNIDO grants and other topics. The need to work together to avoid duplication and learn from other's experiences was also stressed. Exchange of scientific personnel and offering of facilities in the participants' countries for mutual benefit should also be encouraged. The necessity for researchers to work together with industrial partners was proposed as a means of transfer of research results to commercial production.

An official dinner was hosted by Prof. Dang Vu Minh, Resident of VAST at a get together of all the participants on a boat trip on Lake Tay Ho. A brief excursion was organised for the foreign participants to the Vietnam Museum of Ethnology to acquaint them with the diverse ethnic groups and living traditions of Vietnam.

The Concluding Session was held at the premises of the Institute of Natural Products Chemistry (INPC) in the Vietnamese Academy of Sciences and was chaired by Prof. Dr. Chau Van Minh, Vice President of VAST and Director of INPC and ended with the distribution of participation certificates to the participants.

The participants thanked Dr. Le Mai Huong, her colleagues Prof. Nguyen Huu Khoi, Dr. Phan Van Kiem, Dr. Le Phuong Quynh, M.Sc. Do Huu Nghi, M.Sc. Nguyen Hai Dang and other members of the organising committee for making excellent arrangements and for their generous hospitality. They unanimously hoped that more similar events will be held in future with a focus on South-South cooperation. The organizing committee of the host country and the participants expressed their grateful thanks to Prof. Arun Kushreshtha for for organising such a successful event, patient support and thoughtful care to all participants.