''योगः कर्मसुकौशलम्''

The success in deeds is achieved through Yog

(Geeta)

Felicitation of Eminent Scientists by World Academy of Ayurved (Ayurved Vishwa Parishad) for doing excellent research work in different fields of Science which are contributing directly or indirectly to Yoga & Ayurved, our Ancient Wisdom in Health Care, during the National Seminar on

" Importance of Yoga in the Changing Scenario"

sposored by

Central Council of Research in Yoga and Naturopathy, Depatment of Ayush, Ministry of Health and Family Welfare

on 12-13 December, 2006

at

Hindu Maha Shabha Auditorium
New Delhi-110001

Regd. office : C-121, Kirti Nagar, New Delhi-110015
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FORWARD

Yoga which is our ancient wisdom developed by Maharishi Pantanjali is a scientific technique of linking the microscopic state of life Atma/ Soul which resides in the body with Parmatma , the supreme soul. It was practiced in this part of the world for several thousands years ago and it was through various yogic techniques that Rishies and Maharishies since Vedic period had acquired enormous powers which they had used only for the welfare of humanity. Yoga is becoming very popular in the west where the life style has been more materialistic than adding some component of spiritualism to it through the efforts of a number of spiritual gurus who established their Ashrams in those countries to show them the correct path of better living with human values. The scenario is also changing very fast in our country where Yogic exercises are being adopted by masses for getting rid of the health problems.

All of us must be much more concerned about the immediate environment where we live, where we move and where we work. In the name of rapid industrialization to gain higher growth rate and prosperity, we are least concerned about the environment protection. The clean environment of your place of living, working etc is very essential to achieve the result in longer life period to do more creative things in a particular Janama. There are serious problems of environment pollution world wide and particularly in the developing countries even though concerted efforts are being undertaken by State Pollution Control Boards. Polythene burning is very popular both by the residents and Safai Karamcharies throughout the country in the name of cleaniness but they are adding

more and more dioxin and furan into the environment and increasing cancer and diabetes . Every one of us has to be vigilant regarding these evils. How Yoga will yield quick and better results under such circumstances. Parthenium hysterophorus (congress grass) is spreading its wings, covering more and more areas all over the country not sparing the Hilly Regions where the quality of the air is supposed to be much purer than the plains. The pollen of which is causing Allergies/ Asthama. Doing Prayanam in Parks hebetated by dense population of congress grass will further promote pollen allergies and Asthama.

Yoga results will be achieved more effectively if all of us are equally awakened and concerned about clean environment so that the Pran Vayu which we take during Yogic exercises is pure, free from the toxic pollutants. To enrich the Pran Vayu and make it more effective, medicinal trees like Neem, Peepal, Barghad, Pilkham, Bakain, Babool, Amaltas, Harshringar, Kadam, Tulsi etc should be planted on roadsides, public parks and centers where Yoga is performed.

Organic farming has to be promoted using Rishi Krishi techniques, Agnihotram and coupling it with the modern science achievements using the Microbial Biofertilizers so that the vegetables, grains, pulses, fruits, milk which we consume should be free from pesticides residues, toxic compounds, chemical fertilizers residues. The five essential elements i.e Panchbhootas which generate the life on the earth should remain purified only then Yoga will give sustainable positive results. The Spiritual Leaders who are making popular the Yoga in the masses are advised to spend some time on these aspects of clean environment also.

Another significant area of research and considerations and Ethical Considerations in Yoga and Traditional Indian Healing Sciences, which were practiced here several thousands years ago but we have already forgotten them. These mysteries which are hidden have to be discovered for the welfare of the poor masses who are deprived of the best medical aids which are available to the middle and upper class of the society.

It is worth mentioning here that Dr. Acharya Prabhakar Mishra, The President World Academy of Ayurved (Ayurved Vishwa Parishad) is working effectively to bring together the Yogacharyas, Scientists doing research in Yoga and Ayurveda so that the results of Yoga and Ayurved reaches the masses. Because of his vast experience and deep studies on Geeta , he has been given a special and challenging assignment by Central council of Research in Yoga and Naturopathy, Department of AYUSH, MHFW, GOI to write book on "**Yog Bhashya of Geeta**". This intellectual work work has not done in the past.

We all join to give special thanks for this honour to Acharyaji.

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योग तथा आयुर्वेद

योग तथा आयुर्वेद दोनों का प्रथम उद्देश्य है कि स्वस्थ को स्वस्थ बनाए रखना। योग के षट्कर्म तथा आयुर्वेद के पंचकर्म एक दूसरे के पूरक है। आयुर्वेद का आहार विहार तथा जड़ी बूटी विज्ञान प्राकृतिक चिकित्सा के भी मौलिक सिद्धान्त हैं। इन विधाओं से ही नीरोग विश्व की संरचना सम्भव है। आयुर्वेद विश्वपरिषद् इसी लक्ष्य की पूर्ति के लिए अग्रसर है। इसलिए अब योग तथा आयुर्वेद को जनता के मध्य ले जाना परमावश्यक है। आयुर्वेद में वर्णित जनपदध्वंस मानसिक तनाव तथा मानसिक प्रदूषण के ही दुष्परिणाम की ओर संकेत करता है। आज नए नए रोगों की उत्पत्ति पर्यावरण प्रदूषण से भी हो रही है। विकृत रासायनिक खादों से उत्पन्न, अन्न, शाक मानव मन को अशान्त तथा तामस एवं राजस बना देता है। भारत में यह उक्ति प्रसिद्ध है कि जैसा खाए अन्न वैसा होवे मन। आयुर्वेद विश्वपरिषद् उन तमाम वैज्ञानिकों को जोड़ना चाहता है तथा सम्मानित करना चाहता है जो इस क्षेत्र में कार्य कर रहें है। ताकि योग तथा आयुर्वेद के सिद्धांतो की पूरी तरह विज्ञान की कसौटी पर भी प्रमाणित किया जा सके।

अतः हम सभी पर्यावरणविदों, जड़ीबूटी विशेषज्ञों से जैविक खाद, रासायन शास्त्री, जीवविज्ञानियों से सहायता प्रदान का अनुरोध करते है, कि वह आयुर्वेद विश्वपरिषद् के इस जनस्वास्थ्य अभियान में योगदान करें!

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डा० आचार्य प्रभाकर मिश्र
(अध्यक्ष)

आयुर्वेद विश्वपरिषद् के कुछ उद्देश्य

1– आयुर्वेद के साथ उसके अभिन्न अंग योग तथा प्राकृतिक चिकित्सा द्वारा जनस्वास्थ्य को सशक्त बनाना।

2– खाली भूमि पर जड़ीबूटी (वनौषधि) का आरोपण करना तथा धन्वन्तरिवाटिका तथा वनौषधि उद्यानों का प्रोत्साहन ।

3– मठ मंदिर आश्रम आदि देवस्थानों तथा धर्मस्थानों एवं धर्माचार्यों के माध्यम से योग तथा आयुर्वेद का प्रचार।

4– आयुर्वेद पर समागत विश्वस्तरीय संकटों का निवारण तथा परम्परागत वैद्यों का संरक्षण।

5– प्रत्येक जनपद में जन प्रशिक्षण के लिए योग तथा आयुर्वेद के अध्यक्षों का मनोनयन तथा योग आयुर्वेद चिकित्सा शिविरों का आयोजन।

6– आयुर्वेद तथा योग के सरल परीक्षा पाठ्यक्रमों द्वारा शिक्षा संस्थानों में छात्रों को स्वास्थ्य की जानकारी देना।

7– योग, प्राकृतिक चिकित्सा आयुर्वेद के क्षेत्र में अनुसन्धान का सम्वर्धन तथा उल्लेखनीय सेवाओं के लिए विशेषज्ञों को सम्मानित करना।

8– रोगमुक्ति के लिए योग विद्या जागृति अभियान का सहयोग करना। धर्म का प्रमुख उद्देश्य स्वास्थ्य है यह भावना जागृत करना। योग द्वारा अपराध नियंत्रण का वातावरण तथा सद्भावना का विस्तार करना।

9– योग द्वारा शिक्षकों, खिलाड़ियों, छात्रों में कार्यकुशलता तथा स्फूर्ति, ऊर्जा, सुन्दर स्वास्थ्य, मानसिक प्रसन्न्ता का संचार उत्पन्न करना।

Dr. (MS) BINEETA SEN



Born on 7th January, 1940, did her B.Sc. (Hons.) Botany from Delhi University and M.Sc and Ph.D (Plant Pathology) from Indian Agricultural Research Institute, New Delhi. Retired from IARI, New Delhi as Head of Division of Plant Pathology. Served as Principal Research Scientist and Professor of Plant Pathology. Guided 14 Ph.D Students who are holding reputed positions in the country and abroad. She was the Member Academic Council, Board of Studies, IARI and life member Indian Phytopathological Society, Indian Society of Vegetable Science and Indian Society of Seed Science. Also Advisor to National Seed Corporation (NSC), National Horticultural Research and Development Foundation (NHRDF/NAFED), National Dairy Development Board (Fruit and Vegetable Project - NDDB) and The Energy and Resources Institute, New Delhi.

She was rated "Excellent Teacher" by the Post Graduate School, IARI in 1955, received Pesticide India Award in 1966, National Award for the Best Woman Agricultural Scientist (Panjab Rao Deshmukh Award) in 1999, Jeera Sannidhi Award of Indian Phytopathological Society for "Exceptionally Commendable Achievement" in Plant Pathology awarded in 2000. Y.L. Nene outstanding Plant Pathology Teacher Award in 2006. (Indian Society of Mycology and Plant Pathology). She developed Technology of two Bio-formulations patented and

commercialized to industry (Cadila Pharmaceuticals Ltd., Ahmedabad) under the name Kali Sena SD and Kali Sena KL which is Aspergillus niger (AN-27). These have enhanced crop production (Wheat, Rice, Maize, Furits, Vegetables, Pulses, Oilseeds, Forestry, avenue trees) and are being adopted as significant organic inputs for promoting the organic farming in the country. This bio-formulation produces antifungal antibiotic which kills the pathogens at a distance. This biological control agent (BCA) generates two organo acids - citric and oxalic acid and due to lower pH, it stops the growth of pathogens. The bound/combined phosphate is also dissolved and made available to the plant. The use of the Kali Sena in the cultivation of medicinal plants to give quality medicinal plants to the Ayurvedic Pharmaceutical Industry is expected in near future.

PROFESSOR R.K. PATHAK

Dr. Ram Kripal Pathak currently is the Chief Consultant, National Horticulture Mission, GOI. Born on 3rd August, 1943 in Village Rajapur, Distt. Jaunpur (U.P.), did his M.Sc (Agricultural), Ph.D from Agra University. He was First Class First in M.Sc (Horticulture) and secured highest OGPA in Horticulture during 1970 at IARI and was awarded Gold Medal. Prof. Pathak has to his credit 35 years of Research, Extension Teaching and 28 years of Scientific Administration. He has published 125 research papers popular articles, two original and three contributory books, 8 bulletins and large number of leaflets in Horticulture.

Because of his excellent contributions in Horticultural Science, Prof. Pathak has been given a number of awards. Dr. Rajinder Prasad Puruskar for the year 1991-93 for writing book in Hindi" Phal Vriksh Pravarthan", ICAR, New Delhi.

- Shri Girdhari Lal Chadha Memorial award for the year 1997 for significant contribution on wasteland utilization through Aonla based cropping.

- Dhatri Shri Award 2003 by All India Aonla Grower's Association of India for meritorious contribution to Aonla production.

- Rafi Ahmed Kidwai Award for Biemium 2002-2003 from ICAR in the discipline of Horticulture, highest award in the discipline of agriculture from Indian Council of Agriculture Research.

The International Society of Horticulture Science

awarded ISHS Medal in recognition of the meritorious Services to the Society as Convener of the 1st International Guava Symposium organized at CISH, Lucknow in 2005. His major contribution in Ayurved is on resolving constraints in Aonla, The Amrit Phal and Bael-Shiv Phala.

During the last 25 years of his distinguished career as Plant Breeder, he has identified 4 promising varities of Aonla (NA-4, 5, 6, 7) and 4 bael (NB-5, NB-9, CISH-Bl and CISH-B2). He organized 35 trainings on various aspects of furit activation including, organic farming at CISH, Lucknow Guided 15 M.Sc (Agri) and 9 Ph.D Students. As professor and Head Horticulture at N.D. University of Agriculture and Technology, Faizabad, he was involved in the appointment Agricultural Scientist in ASRB and State Agricultural Universities.

As Director, Central Institute of sub-tropical Horticulture, Lucknow, he created the best infrastructure facilities to achieve the mandate of the Institute. Two mango varities - Ambica and Arunima, five guave (Lalit, CISH, Gl, G5, G-31) and two bael (CISH B-1 and Cish B-2) were identified for large scale multiplication and plantation.

He is the only scientist in ICAR system who has scientifically validated and promoted organic production techniques consisting of biodynamic practices coupled with Panchgavga/Rishi Krishi and Agnihotra and developed Jaivik Package for production of horticultural crops. He also developed the technology for rejunevation of mango, guava and aonla trees and these are being adopted by farmers.

He also coordinated World Bank aided project - DASP which was declared to be one of the best project in the country.

Because of his dedicated research work as Associate Professor and then as Professor of Horticulture at Acharya Narender Dev University of Agriculture and Technology, Faizabad, Aonla cultivation has now spread over 60,000 ha area with annual production of 2.25 lactones. Partap Garh District, poor farmers have become every rich due to Aonla cultivation and a lot of processing units have been established which are making a variety of Aonla products. Under Deen Dayal Rozgar Srizan Yojana, massive plantation of citrus in Jhansi, Lalitpur, Aonla in Partap Garh and Fatehpur, Harichal, Banana in Bahrach, Gorakhpur, Maharaj Ganj, Hybrid tomato and pointed gourd in Ballga Ghazipur and Bahraich, establishment of Horticultural Cooperative Marketing Federation (HCMF) for effective achievements were undertaken.

Cultivation of strawbery under coaches (poly tunnel) was standarised for the first time in the country which he did as Ph.D student at IARI and now being practiced in the country.

PROFESSOR SUBHASH C JAIN



Professor Subhash C Jain (born on October 26, 1948) had his formal education from the University of Delhi and joined the Department of Chemistry in 1987 after spending several years at Cornell University (USA) as a National Post Doctoral fellow of The Government of India. He worked at the Baker Laboratory with Professor Jerrold Meinwald (Goldwin Smith Professor of Chemistry) in the field of Chemical Ecology and carried out Stereospecific Synthesis of various naturally occurring bioactive molecules. He has been a Visiting Scientist at various Institutions/Universities such as Brookhaven National Laboratory (New York), University of Durham (Great Britain), University of Warwick (UK) and Universities of Odense and Copenhagen (Denmark).

Professor Jain is a fellow/member of several professional societies and has published over hundred research papers and a review article in the field of natural products, synthetic and bio-organic chemistry, in various international journals of repute. Some of his research work has also been highlighted in a leading National daily. Beside this, he has presented eighty research papers in various National and International symposia and has also been invited to deliver Seminars/lectures in about thirty five different Universities/Institutions in UK, USA, Italy, Denmark, Germany Netherland, Switzerland and Russia. Prof. Jain's research efforts have got support from vari-

ous National and International agencies such as UGC, DST, DAE (India) and DANIDA (Denmark).

Prof. Jain has been a recipient of meritorious National Scholarship (Govt. of India) for post graduate studies (1968-70); National Scholarship (Govt of India) for studies abroad (1979-82); NIH and Schering-Plough Corp. Fellowship (1979); Senior Science Exhibition Prize (1970, University of Delhi) and many other academic prizes and awards during his graduate studies. He has teaching experience of thirty six years and has authored six books. He has also been invited several times by All India Radio to popularise Science among its listeners. As one of the organizer he has also conducted three IUPAC sponsored International Symposia held at Delhi in 1992, 1994 and 2004 in the field of bio-organic chemistry. He is on the Editorial Board of the Indian Journal of Heterocyclic Chemistry and Heterocyclic Communication.

Presently he has been doing research with a team of ten research students at PhD/MPhil level along with two DST sponsored Scientists in the following three areas of organic chemistry : (a) Synthesis and structural studies of biologically active natural products, (b) Biological control of pest, study of antifeedants, oviposition deterrents and plant produced repellants, and (c) Development of newer strategies for the synthesis of some fluoro spiro and bisphenolic compounds of medicinal, agricultural and industrial importance. He is also collaborating actively in above areas with various groups Nationally and Internationally and some of the compounds of his research group are presently under laboratory/field trials.

Selected Publications:

1. Ravi K Upadhyay, Leena Rohatgi, Mukesh K Chaubey and Subhash C Jain. Ovipositional responses of the pulse beetle, Bruchus chinensis (Coleoptera: Bruchidae) to extracts and compounds of Capparis decidua. J. Agric. Food Chem., 2007, 55(2).
2. Subhash C Jain, Mukesh K Pandey, Ravi K Upadhyay, Rohtash Kumar, Geeta Hundal and Maninder S Hundal. Alkaloids from Toddalia. Phytochemistry., 2006, 67, 1005-1010.
3. Manish Jain, Pankaj Khanna, Anjali Saxena, Sunita Bhagat, Carl E Olsen and Subhash C Jain. Synthesis of some novel bis-spiro[indole-pyrazolinyl thiazolidine]-2,4¢-diones. Synthetic Comm. 2006, 36(B), 1863-1872.
4. Sunita Bhagat, Manish Jain, Mukesh K Pandey, Pragati, Anjali Saxena and Subhash C Jain. Synthesis of new bridgehead heterocycles: Pyrimido[3¢2¢:3,4]-1,2,4-triazino[5,6-b]indoles. Heteroatom Chemistry. 2006, 17(4), 272-276.
5. Anjali Saxena, Pankaj Khanna, Sunita Bhagat, Archana Gupta and Subhash C Jain. One pot synthesis of 5-alkyl-1,2-dihydro-spiro[4H-3,1-benzoxazine-2,3¢(3H)indol]-4-2¢-diones under microwave irradiation. Indian J. Chem. 2006, 45B, 1504-1510.
6. B Ravindra Babu, Shilpika Bali, Rajeev Sakhuja and Subhash C Jain. Lewis acid promoted synthesis of 2(3H)-benzofuranone. Indian J. Chem. 2006, 45B, 2546-2548.

Subhash C Jain, Rohtash Kumar, Rajiv Goswami, Mukesh K Pandey, Shilpi Khurana, Leena Rohatgi and Kapil Gyanda. Synthesis of novel non-isoprenoid phenolic acids and 3-alkylpyridines. Pure and Applied Chem. 2005, 77(1), 185-193.

SHRI A.K. SRIVASTAVA

Mr. A.K. Srivastava, the President of NPB Natural, a non-governmental research, consulting and educational organisation, which is in the mission to contribute to ecological health and social and economic development through the promotion of educational methods in agricultural, forestry, aromatic & medicinal plants cultivation throughout India.



Mr. A.K. Srivastava is a member of India's National level collaborating Mixed Microbial Research System of Delhi University South Campus, besides this he has travelled throughout India by cycle for two years in order to study various aspects of organic farming & Various traditional techniques adopted by the farmers at diffrerent local levels in different small villages of India alongwith prevailing modern agricultural techniques at urban levels also. He conducts research and delivers lectures at National and International level on Mixed Microbial Techniques & its role in Indian agricultural and enviroment, agroecology, global environmental change and related themes.

He has developed NPB system that includes the use of Nature Power Balanced Solution (NPB Solution), a useful combination of coexisting beneficial dominated microbes such as **bacteria, actinomycetes & fungus** cultutred in a liquid medium developed in India from natural environment of India with technical assistance from scientists from India & abroad. This is the only **system without chemical fertilizers & pesticides** but also utilising the positive micro-organisms to increase the soil quality & soil health.

IN AGRICULTURE

1) This NPB technique reduces the use of chemical fertilizer, insecticide & pesticide to the minimum, helping the farmer to produce healthy & quality disease free nutritious crop.

2) This technique can rejuvinate the fertlity of any barren /

saline land at comparatively lesser time & at a lower cost of the farmer. 3) This technique also promotes early germination & reduces the crop time naturally.

4) This technique improves the physical , chemical & biological health of soil, making the soil more alive & enhancing the water holding capacity of soil, reducing the number of irrigations required in turn automatically reducing the cost of irrigation of farmer.

5) This technique is equally useful in providing balanced food to all type of crops, orchard, cereals, vegetables specially to aromatic & medicinal plants naturally & instanatly.

6) With the help of this technique we can convert the insoluble & undercomposed waste matter into useful nutrients in the form of good compost for plants by fermenting them. (10 kg. of NPB Manure & 1 litre NPB BIO-Liquid required for conversion of 10-15 qtls. of wasre organic bio-mass into good compost in just 15-20 days.)

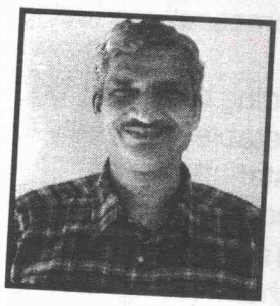
7) This technique helps farmers in getting the better quality & quantity both in very first crop.

NPB Natural have been carrying out number of training programmes for agronomists in the different states of India for the state governments programmes of organic gardens for women. The project resulted in training of more than 20,000 rural women & men learning the technique of making instant organic compost that too within a period of two to three weeks with the help of indigenously developed mixed microbial NPB (Nature Power Balanced) technology.

This technique is being initiated successfully in different States like U.P., Bihar, Gujarat, Punjab, Haryana, Rajasthan, West Bengal, M.P. & Uttranchal on various crops more emphatically. This technique is more beneficial in aromatic & medicinal plants cultivation since our medicines could be more effective & powerful if it comes from the plants which are truly grown organically for the better global health.

ER. GOPAL SANE

Er. Gopal Sane is Engineer by qualification Born on 6th July, 1948. He did his B.E. (Mech.), M.E. (Prod. Engg.) from Bombay, University and Diploma in Business Management also from Bombay University and served in R&D Departments of Mahindra and Mahindra Ltd. Machinery manufacturers Cooperations, Mysore and Eicher Good Earth Ltd. for 18 years. He diverted his interest towards Environment Management as this is the need of the hour for better health of humans. He met the renowned scientist Dr. Bhawalkar of BERP, Pune who gave to the world ecotechnology of Bio sanitizer which are concentrated bio-enzymes. The Bio-Sanitzer Technology has been tested for 2 years in Delhi and attempts are being undertaken by his organisation- Samruddhi) to take the technology for clean environment to masses.



In association with PCRA, the technology of Bio-waste management is being used in different part of the country.

Hyderabad Division of Railways, Army Establishments at various locations in the country, RWA's in Delhi and prestigious Schools in Delhi, Gurgaon area are using the technology for biowaste management.

The Bio-Sanitizer Technology is also used for recycling the waste water. There is no sludge and global warming gases released during the process and the treated water can be used in horticulture and gardening.

While Biosanitizer technology is useful in environment management, still it is of potential use in the cultivation of the various medicinal plants organically and has to be popularised amongst the farmers particularly when there is a huge demand of cultivated medicinal plant.

Presently he is engaged in research projects for industrial effluent treatment with this technology. This would also help for effective control of pollution leading to the spoiling of our sacred rivers like Ganga and Yamuna.

PROFESSOR K.K. BHUTANI

Professor K.K. Bhutani is the Head of the Department of Natural Products and Dean, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, Punjab and NIPER is Research Institute of International reputation in Pharmaceutical Sciences. After his Post graduation from Punjab University, Chandigarh, he joined the most prestigious research Institute of CSIR family, Regional Research Laboratory, Jammu and did excellent work as Phyto Chemist and was a reputed Natural Product Chemist and Screened a number of the medicinal plants for their active ingredients.



On September, 1, 1994, The Department of Natural Products came into existence as one of the six basic department opened at the time of inception of NIPER and Professor K.K. Bhutani was requested to start this department at NIPER and was called from RRL, Jammu. His research work relates on standarisation and quality control of Herbal/Traditional Medicinal products, discovery of new bioactive molecules for various therapeutic areas, design and synthesis of natural products and their analogs.

The Natural Product Department has attracted funding by receiving research grants from various government, non-government and international agencies such as Department of Ayush, MHFW, GOI, CCRAS, ICMR, DST, CSIR, International Foundation for Science (IFS), The faculty has also undertaken a number of industry sponsored research projects and consultancy assignments. He is actively involved in the development of program on Traditional Medicines with the

objective of standarisation and quality control of herbal drugs and products so that Ayurved is globally adopted. The overall objective and aim of this traditional medicine programme are to meet the demand of cost effective medications and biological agents from sustainable plant resources with the following steps.

- To lay down standards and effective quality controls on the Herbal Medicinal Products.
- To create data bases for identification and authentication of material with well defined botanical and physio-chemical characteristics.
- To create libraries of markers/characterising constituants for positive chemical identification of material through chemoprofiling.
- To create quantitative standards for extracts and their formulations through chemo and bio profillings.
- To create standard protocols for establishing purity of material, identification of adulterants, substitutes, pathogenic bacteria, fungi, heavy metals and pesticide residues.
- To develop dosages forms of the herbal products and their stability studies with the help of biomarkers.
- To conduct clinical trials of the scientifically developed formulations and validate the traditional claims.
- Agrotechniques for the development of commercially important medicinal plants with high active component.
- Development of tissue/cell suspension cultures for production of secondary metabolities.
- Development of analogical methods for phyto-chemicals.

He is also actively involved with a team of dedicated young scientists on development of standard operating procedures (SOPS) for classical Ayurvedic preparations being sold in the market as OTC products. Many monographs on the standarisatics of single herbal drugs, polyherbal formulations

have been published in Ayurvedic Pharmacopoeia and ICMR monograph series.

He is also involved in the germplasm bases of more than 100 medicinal plants which have been collect from their wild natural habitats and also cultivated components.

The agro practices for the perennial crops of Asparagus racemosus, Asparagus adscendens, Bacopa monnieri and Tylophora Indica and a tree species Premna mucronata have been standarised and being adopted by National Medicinal Plants Board, GOI for Scientific Cultivation a book "Agro Techniques and Cultivation Practices of some important Medicinal Plant" based on experience gained from scientific experiments was published both in English and Hindi - Punjabi for the benefit of the progressive farmers. Saplings of around two dozen medicinal plants with high content of marker constituents are also distributed.

He is also responsible for generating in house database for around 100 herbal raw material from 250 frequently used species of medicinal plants in traditional medicines for the identification and authentication of plant material with well defined characterstics. The libraries of more than 500 markers / characterizing constituent for chemical identification of plant material through chemo-profiling has been created. The data base contains information on 250 medicinal plants frequently used in Ahyurved. Another 250 species are targeted to be included during the next three years.

Professor Bhutani has completed 20 Research Project funded by various GOI agencies. He has to his credit 6 patents, published 30 research papers in International journals, 15 review articles and book chapters, 3 books and 3 monographs on medicinal plants. He guided 6 Ph. D students, 22 MS students in Natural Products.

Dr. Alok Adholaya

Born on 30th August, 1962., did his B.Sc., MS and Ph.D from Jiwaji University, Gwalior. He joined the Tata Energy Research Institute now named as the Energy and Resources Institute (TERI) in 1986, was the Head, Bio-Resources and Bio-Technology Division and currently is the Director, Bio-Technology and Management of Bio-Resources Division, TERI and Dean Faculty of Applied Science, TERI University. His Research interests are in Bio Energy, Environmental Issues and Technology Developement in Bio-Technology, Soil fertlity, Soil and plant microbiology, nutrient cycling, bioremediation using microbes and plants, mass production of mycorrhizae bio fertilizer using transformed root organ cultures, molecular characterization. Bio diesel production and management. Was honoured with " Paryavaran Sanrakashan Samman" in 1999 by then Hon. Chief Minister of M.P. Shri Ajit Jogi. Member 'Monitoring cum Evaluation Committee for monitiring the field trials of Transgenic crops in the jurisdiction of SAU, DBT, New Delhi. He is a member on the Editorial Board of a number of Scientific Journals. He is also the member of a number of expert Group and Societies. He has published 46 research papers in International Journals and 16 National Journals.

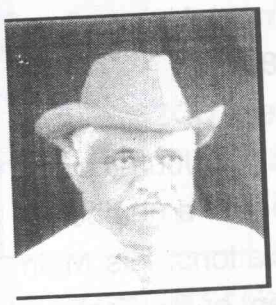


Prof. Ramesh C Kuhad

Born on 7th August, 1955, completed his M.Sc., M.Phil and Ph.D in Microbiology from Bhopal University. Did his Post doctoral work in various universities in USA, South Africa, UK and Italy. Has 22 years of teaching and 26 years Research experience. Joined Microbiology Department, University of Delhi South Campus as Lecturer in 1988 and now he is Professor and Head Microbiology Department, UDSC. He has published 75 reasearch papers in International Journals and guided 9 Ph.D students. He is the member of a number of Professional Societies / Bodies / Associations. His Main areas of research interst are - Development of Bio-Technological Processes in animal feed, Pulp and Paper industry and agriculture, Molecular Biology of Lignin degradation, production of thermostable and alkalastable. Cellulose free xylanase to use them as substitute of chlorine for pulp bleaching to avoid high degree of pollution of our rivers. Bio remediation of soils contaminated with oily sludge. He is the National Research Co-ordinator for a DBT funded project "Bio Conversion of Lignocellulose feed stock into ethanol as Biofuel" He is also working on an enzyme which if mixed with the animal feed will result in lignin degradation and the animals particularly cows will yield more milk and quality milk.

Shri Narayan Das Prajapati

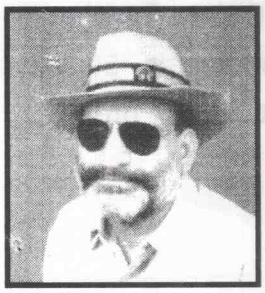
Born on 14th October, 1950 in Jodhpur. He is basically a Medicinal Plant Cultivator from Jodhpur, who has became a living example for the farmers of India that how by proper planning, one can capture the world market of cultivated mdicinal plants even in the adverse conditions like Jodhpur in the Indian deserts. He has 20 years experience of cultivating organically more than 20 medicinal plants. He was appointed as Founder Farmer Member in National Medicinal Plants Board, Deptt. of Ayush, MHFW, Government of India and a member of Medicinal and Aromatic Plants, NABARD, Jatropha and Bio Fuel, Research Advisory Group, AERI, Jodhpur. Founder Trustee of Asian Medicinal Plants and Health Care Trust, Jodhpur and Director, Rajasthan Agro Forestry Corporation, Jodhpur and Institute of Herbal Heritage, Advisor to Amalatas, a monthly magazine on med-plants cultivation, marketing and utilization, Himachal Herbal Organic Growers Association, Aromatic Plants Growers Association of India and Charitable Herbal Hospital, Jodhpur. He is also the Rsource person and training Faculty for a number of Research Institutes and Agricultural Universities Developed the agro techniques for 120 medicinal plants. Producing the quality seeds and planting material of medicinal plants for farmers. Has published a number of books on medicinal plants. Given a number of radio and television talks on medicinal plants cultivation and has pro-



duced three films on Sonamukhi (Cassia angustifolia) 20,000 farmers have been trained for cultivation of medicinal plants. He has also developed Multi Tier Agricultural System for sustainable farming of medicinal plants cultivation for more profits. Also working on the domestication of medicinal plants of Indian Thar Desert. He has a library of 50,000 various important and rare books, more than 100 periodicals, 50 VCD related to medicinal plants Ayurveda, Horticulture, Forestry.

SHRI R. S. GULERIA

Er. Raghubir S Guleria is an Electrical Engineer, who earlier invented the Shock-Proof Mat at the age of 30 which prevents the electrocution of humans as well as animals at places of electrical installations. His invention has been approved by the British Safety Council, the National Safety Council and the Bureau of Indian Standards and led to the adoption of a new technology & revision of old standards.



Er. Guleria then turned his attention to his home state, Himachal Pradesh. He was saddened by the plight of Himachali youth who were forced to lose contact with their roots and their family and seek employment outside Himachal Pradesh due to the lack of job opportunities in their home state. He also witnessed cruel destruction of Himachal Pradesh's vast natural plant & land resources and its conversion to barren-land. Himachal Pradesh has the richest treasury of herbs and medicinal plants in the world and yet this treasure instead of heaping benefits to the state, nation and society, was surely & silently being destroyed. Er. Guleria saw a single solution to all these problems and committed himself to the cause.

Er. Guleria then laid the foundation of HARB (Herbsand Antique Research Botanical) Society, an NGO at Himachal Pradesh. The astounding achievements of HARB Society are largely due to his untiring efforts for three years.

It is worth to note, too, that only 10.5% of Himachal Pradesh

land is under cultivation. The rest is either barren land, waste land or forest-land. Most farmers dependent upon traditional agriculture find it hard to make ends meet and while others are close to starvation. Farmer Suicides are all too frequent.

After careful analysis of the situation Sh Guleria deduced that the utilization of barren-land and forest-land of Himachal Pradesh for Organic Farming of Herbs & Medicinal Plants will lead to the solution of multiple problems.

- This will lead to a true Revival of Ayurved as many companies today are selling products labeled as Ayurvedic, thus discrediting the field.
- Availability of cheap, highly effective and side-effect free Ayurvedic Medicines to common man
- This will increase land under cultivation, stop barrenisation of Himachal Pradesh land, increase our green belts nationally and internationally and help us fight global warming.
- Youths of Himachal Pradesh, both highly educated and lower strata, will find new suitable job opportunities in their home state.
- Utilisation and development of local infrastructure
- Trend towards Organic Farming and reduction in the use of harmful chemicals and pesticides.
- Foreign Currency due to Export
- Protection of Environment
- Lead to Commercial Development of Himachal Pradesh

But this is all easier said than done. Resource crunched locals, who had lost the knowledge of medicinal value of Herbs & Ayurvedic Plants, used them as fodder for animals and fuel.

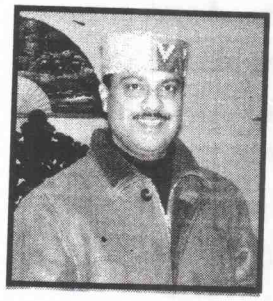
Few others, who had retained the knowledge, would cut and sell the Herbs before ripening due to greed and the poor man's need of instant money. This virtually nullified the medical value of Herbs & Ayurvedic Plants which are best utilized after ripening. Also because of lack of proper identification of some Herbs & Medicinal Plants and confusion between local names and scientific names of many Herbs & Medicinal Plants as described in the Ayurveda led to some companies selling useless products in the name of some herb. Thus the challenge for Sh Guleria, who was aware of the prevailing situation, was to bring together to a single platform, the locals who had traditional knowledge of Herbs & Medicinal Plants, experts & scientists who are working on Ayurvedic Solutions, turn Organic Farming to a revolution, bring and attach local farmers to the revolution, ensuring that the Herbs & Ayurvedic Plants are fully ripened before harvesting, organizing crop cycles for short and long duration herbs and ensuring that the farmers reap benefits even early in the project.

Er. Guleria also started the long and tough campaign of bringing awareness of the project to environmentalists, Ayurveda experts & scientists, farmers, Himachali youth, State Panchayats, State Governement, Government of India, various government and non-government organizations. Thanks to his efforts today there are over 1500 farmers & cultivators are now part of the HARB Society, Ayurveda experts & scientists from University system and Research Institutes are associated with the project along with many government and non-government organizations. It is a testimony to his leadership skills that such

a vast number of people, orgnaisations and resources have come under the project and this has triggered a new era of research and development for the field of Ayurveda.

ER. JITENDER SODHI

Born and brought up and high schooling from Himachal Pradesh, after completing my engineering in 1981, I started my career as service engineer in India and served up till 1989 on different positions and migrated to USA in 1986 to obtain green card and served with the company. Then moved to USA with family, took over Ayush Herbs Inc. as Marketing Director (family own business) after three years successful business of Ayurvedic supplements in USA and to several European countries, moved back to India to finish the discrimination on Indian suppliers. During my stay in USA, I did my business associates in USA.



A one family owned Business which was started only with 10,000 US$ financed by the family created awareness on Ayurveda and on Ayurvedic products. During my tenure as Marketing director company became million US$ company within a span of three years. As Marketing director I was able to establish business contacts for own products throughout America as well as another thirty countries. We brought extensive awareness about AYURVED AND ITS INDIAN HERITAGE by conducting countless seminars, trade shows internationally. Company faced major problems from Indian supplierâ€™s qualities wise as well as timely shipments. Then we decided to have our own manufacturing units in India and chosen Himachal to promote HIMALAYAN RANGE PRODUCTS.

After handing over the charge to the next family member (Dr. Shailinder Sodhi Vice president of Ayush Herbs Inc. USA) took over the charge of production after establishing extraction unit with own efforts and wisdom in India totally self financed unit.

Ayush Herbs Pvt. Ltd. is a family owned international business, owned and operated by four Sodhi Brothers (3 of them are Doctors & one engineer) who are born and educated in H.P. Their parents Sh. D.P.S. Sodhi and Mrs. Veena Sodhi while serving in H.P. Govt. had dream to bring back educational expertise and business to H.P. Sodhi brothers migrated to USA in 1986 & established Ayush Herbs Inc. USA in 1988, to bring aware ness of Ayurved in the western world to meet the growing demand of Ayurvedic and Herbal products. Due to lack of quality control to meet the international standards by Indian suppliers Ayush India came to existence in 1993. Since inception Ayush Herbs Pvt. Ltd. has strived not only to meet but also exceed international standards in USA and Europe, New Zealand and Australia continent. Started with one unit but now have four manufacturing units in Himachal.

Ayush team is backed by strong technical background and modern research. Under guidance of Mr. Jitender Sodhi, Ayush has launched many new products of the highest quality while constantly employing local more than 60 directly and 150 indirectly. Ayush group is equipped with latest art of technology with highly qualified Scientist in production, quality control, Research and development and analytical .Also had involved several farmers in cultivation and franchise cultivation. Ayush Herbs won several national awards as follows.

1. Rashtriya Gaurav Award.
2. 21st Century Excellence Award
3. Best Industry Award
4. Udyog Patra Award for 2000 this Awards is given to self dependent successful Industrialist/ entrepreneurs of India. It was awarded to 30most successful people all over India.