

# Summary Proceedings and Recommendations

**NABS - 5<sup>th</sup> Interactive Workshop**  
on  
“Prospects of Medicinal Plants in  
Promoting Wellness”

Jointly organized  
by



National Academy of Biological Sciences  
Chennai, India  
&



World Noni Research Foundation  
Chennai, India

14 & 15 May, 2012

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# National Academy of Biological Sciences

## Summary Proceedings & Recommendations of NABS - 5<sup>th</sup> Interactive Workshop and the 6<sup>th</sup> Annual Meeting

### NABS - Interactive Workshop

NABS-Fifth Interactive Workshop on "*Prospects of Medicinal Plants in Promoting Wellness*" was organized at Chemical Sciences Auditorium, Maraimalai Campus, University of Madras, Guindy in collaboration with World Noni Research Foundation, Chennai on 14 & 15 May, 2012.

The Inaugural function commenced with Thamizhthay Vazhthu. Padma Bhushan Dr. R. S. Paroda unveiled the portrait of Founder President, Prof. S. Kannaiyan and two minutes silence was observed to pay homage to the Founder President.

Dr. T. Marimuthu, Secretary, NABS welcomed the delegates and dignitaries. The Inaugural Function was presided over by Dr. V.A. Parthasarathy, President, NABS; Dr. Kirti Singh, Chairperson, World Noni Research Foundation inaugurated the Workshop, released the Abstract of papers and NABS-News Letter (Volume-3) and conferred the first "Prof. S. Kannaiyan Memorial Award" on Padma Bhushan Dr. R. S. Paroda. Dr. R. S. Paroda delivered Prof. S. Kannaiyan Memorial Oration, '*Meeting the Current Challenges for Food, Nutrition and Environment Security*' during the occasion.

Dr. Kirti Singh conferred Honorary Fellow of NABS on Dr. S. Ayyappan, Director General, Indian Council of Agricultural Research & Secretary, Department of Agricultural Research and Education, GOI, New Delhi (*in absentia*) and Dr. H.P Singh, Deputy Director General (Horticulture), ICAR, New Delhi (*in person*).

Dr. H. P. Singh delivered a special lecture. Dr. P.I. Peter, Chairman, Noni BioTech, Chennai and Founder of World Wellness Organization delivered Keynote Address on "Wellness". Prof. P.I. Peter was also admitted as a Corporate Fellow of NABS by the President.

Dr. V. A. Parthasarathy in his presidential remarks highlighted the activities of NABS and its role in bridging the young biologists through such workshops and seminars.

Dr. D. J. Bagyaraj, Vice-President, NABS gave an overview of NABS and NABS News Letter.

Dr. T. L. Baskaran, Treasurer, NABS proposed Vote of Thanks. The inaugural function

## The 5<sup>th</sup> Interactive Workshop- At a glance



Delegates arriving to the Venue

The Scientists and PG students of University of Madras; M.S. Swaminathan Research Foundation; Pachayappa's College and Loyola College, Chennai; Tamil Nadu Agricultural University, Coimbatore; Indian Institute of Horticultural Research, Bangalore; Sun Agro Biotech Research Centre, Chennai; World Noni Research Foundation, Chennai; The Himalayan Drug company, Bangalore; Elected Fellows; Executive Council members and Best Woman Scientist Awardees participated in the Workshop and interacted.



Delegates register for the Workshop



Delegates and Participants



Dr. R. S. Paroda unveils the portrait of Prof. S. Kannaiyan, the Founder of NABS

**National Academy of Biological Sciences**  
**5th Interactive Workshop on**  
**Prospects of Medicinal Plants in Promoting Wellness**  
**14 & 15 May, 2012**

Sponsored by  
World Noni Research Foundation

Chemical Sciences Auditorium  
University of Madras, Guindy, Chennai

**Paying respects to Founder of NABS, Prof. Dr. S. Kannaiyan**

The dignitaries and delegates pay homage to Prof. S. Kannaiyan, Founder President of NABS



Dr. Kirti Singh and dignitaries light the Kuthuvilakku



Prof. T. Marimuthu, Secretary NABS delivered Welcome Address



Dr. Kirti Singh, released the 'Abstract' of the Workshop-  
*"Prospects of Medicinal Plants in Promoting Wellness"*  
 and the third volume of NABS News Letter (January, 2012)

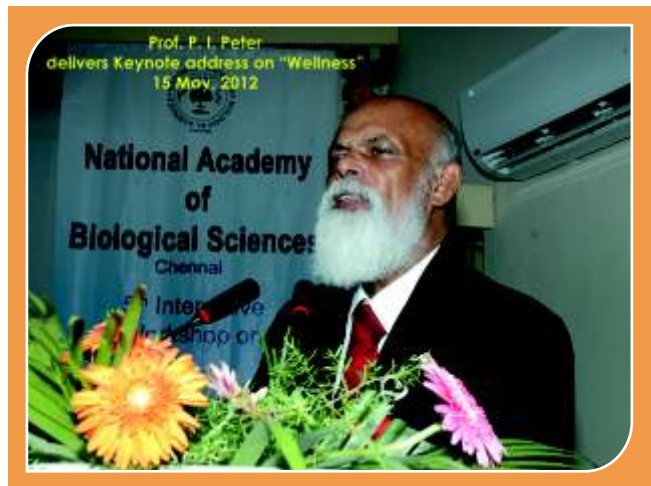


Dr. Kirti Singh delivered inaugural address

Dr. Kirti Singh in his inaugural address highlighted the significance, appropriateness and timeliness of the Workshop. He also appreciated the foresightedness of Founder President in conceding the idea of organizing the Interactive Workshop, the present one being 5<sup>th</sup> in its series, along with the Annual Meeting of NABS which has been taken well among the young biologists and students.

He recalled that during 2005 in the same Hall, the Fellowship ceremony was organized under the chairmanship of Late Prof. Kannaiyan, the Founder of NABS and Chairman, National Biodiversity Authority, Government of India. The first Fellowship of NABS was conferred on Prof. M. S. Swaminathan. He further pointed out that this campus is the seat of origin of NABS where the idea of NABS was mooted by Prof. S. Kannaiyan with the help of eminent scientists like Dr. Gnanamanickam, as Secretary and Dr. N. Anand, the then Director, CAS in Botany as the Vice-President, Dr. T. L. Baskaran as Treasurer and Prof. T. Subramoniam, Dr. K. Balaraman and a few others as members of Executive Council of NABS. Due to the foresightedness and dynamism of Prof. Kannaiyan, the NABS family today has grown from strength to strength and has members from all over the country numbering around 500. The academy has conferred Fellowship to 76 members, Corporate membership to five corporate companies and one Corporate Fellowship to Prof. P. I. Peter, Chairman, Noni BioTech, Chennai. NABS also recognized woman members by conferring “NABS-Best Woman Scientist” award to four of its distinguished members. The dream of Prof. S. Kannaiyan is being fulfilled by the hard work of the members of EC. He proudly pointed out that he is also a Fellow of NABS along with other distinguished scientists like Dr. R. S. Paroda, Dr. S. Ayyappan, Dr. P.L. Gautam, Dr. H.P Singh and many others.

Prof. P. I. Peter, Chairman, Noni BioTech and Founder of World Wellness Organization, Chennai had delivered an excellent Key note address on the subject which many of us might not have heard earlier.



Dr. H. P. Singh, Deputy Director General (Horticulture), Indian Council of Agricultural Research, New Delhi as Guest of Honor delivered a Special lecture on the importance of Horticulture in achieving food security and the medicinal plants in providing health security to millions of people of the country.



Dr. V. A. Parthasarathy, President of NABS delivered Presidential remarks- highlighted the activities and achievements of NABS; expressed his gratitude and thanks to all the delegates and dignitaries who participated and graced the occasion.



## Prof. S. Kannaiyan Memorial Award-2012



Dr. Kirti Singh conferred “Prof. S. Kannaiyan Memorial Award” on Padma Bhushan Dr. R. S. Paroda



Padma Bhushan Dr. R. S. Paroda delivered ‘Prof. S. Kannaiyan Memorial Oration’ – *“Meeting the Current Challenges for Food, Nutrition and Environment Security”* after being conferred with the First ‘Prof. S. Kannaiyan Memorial Award’ for the year 2012.

Dr. R.S. Paroda highlighted the unique achievements of ‘Green Revolution’ which witnessed unprecedented progress in the past 60 years- fivefold increase in agricultural production, 40% reduction in poverty and doubling of life expectancy. He expressed his concern about the growing population and dwindling natural resources, faster decline in factor productivity, soil health and water table and increased incidence of pests and diseases and environmental pollution which pose greater challenges. The population is increasing by 15 million every year and by 2020, we require 285 million tones of food production.



Dr. Paroda was very optimistic and suggested several ways like germplasm improvement and biotechnology, integrated natural resource management, improving the livelihood of smallholder farmers, demand driven agricultural diversification, scaling-up of innovations, capability in innovation, translational research, conservation agriculture, sustainable farming systems approach, on-farm water use efficiency, methods to mitigate the effects of climate change on productivity, optimistic solutions to reduce emissions and policy reorientations to meet the challenges successfully.

In conclusion, he reinstated that agriculture could liberate the nation from hunger, malnutrition and poverty and bridge the widening income divide between farmers and non-farmers; given the declining land, water and agro-biodiversity resources and the intensifying environmental foot print, the task ahead is rather difficult, but not insurmountable if we all move forward with new commitments and out scale innovation for greater impact and we must leave behind a better environment for future generations.



Dr. T. L. Baskaran, Treasurer, NABS proposed Vote of Thanks

## Technical Session-I 14 May, 2012 Prospects of Medicinal Plants in Promoting Wellness

In all 20 papers were received for the Workshop; three under Bioprospecting, ten under Integrated Health Management and seven under Crop Production and Management. Sixteen papers were presented under different subgroups. They are listed below.

### Technical Session- I : Bioprospecting and Integrated Health Management

Dr. Kirti Singh, Chairman, World Noni Research Foundation chaired, Dr. Niranjali Devaraj, Professor & Head, Department of Biochemistry, University of Madras, Co-chaired. Dr. D. Sudarsanam, Professor, Loyola College, Chennai and Dr. N. Mathivanan, Assistant Professor, University of Madras were the conveners.



Chairman, Co-chairman and Conveners are in Session-I

The delegates who presented the papers were honoured by presenting a memento. Details of presentation are listed below.

## Bioprospecting



Noni (*Morinda citrifolia* L.) : Bioprospecting for Wellness-  
*K. V. Peter and S. Malarvannan*



Medicinal plant cell culture for pharma industry-  
*J. Subramani and P. I. Peter*



Role of *in vitro* cell culture technology in herbal drug discovery-  
*R. Sandeep Varma, S. Vidyashankar, K. S. Nandakumar and P. S. Patki*

## Integrated Health Management

*Morinda citrifolia* : Impending phytocomponents for impeding barriers of brain tumor?-

*A. J. Vanisree*



*Desmodium gangiticum* (DG) root aqueous extract attenuates isoproterenol-induced cardiac hypertrophic and fibrosis in experimental rats-

*H. Divya and V. Elangovan*

Curing 'Asthma' with medicinal plants-

*P. Selvaraj*



Bioactive molecules from some medicinal plants with nutraceutical potentials - *N. Raaman*

Integration herbal medicines in primary health care-

*T.Vasantha Kumar and K.Hima Bindu*



Antiproliferative activity of scopoletin isolated from *Morinda citrifolia* L. on human RB Y79 cell line and its biosynthesis in different fruit stages - *N. Mathivanan, G. Surendiran, S. Aroumougame and V. Roopa*



Ethnomedicinal plants used in the treatment of domestic animals in Eastern Ghats of Tamil Nadu- *T. Sekar*

Antioxidant and anticancer activity of *Diospyros melanoxylon* Roxb.- *V. Priyadarshini, S. Aroumougame, V. Roopa and N. Mathivanan*



Phytochemicals against neurodegeneration, a multifactorial disease: A review on their efficacy reported in the past two decades- *Venkateswarlu Raavi and A. J. Vanisree*



Delegates and participants listening to the speakers

## Technical Session-II (15 May, 2012)

### The Technical Session- II: Crop Production and Management

The session was conducted on 15 May, 2012 which was chaired by Dr. K.V. Peter, Director, World Noni Research Foundation and Dr. D.J. Bagyaraj, Vice-President, NABS. Dr. N. Raaman, Professor, University of Madras, Co-chaired. Dr. K. Samiayyan, Professor of Entomology, Tamil Nadu Agricultural University and Dr. B. Meena, Assistant Professor, Tamil Nadu Agricultural University were the conveners.



Chairmen, Co-chairman and Conveners are in Session-II

The following papers were presented and discussed. The delegates who presented the papers were honoured.

## Crop Production and Management

Microbial inoculants for the sustainable cultivation of medicinal plants-  
*D.J. Bagyaraj*



Trends in research on pest management in cultivated medicinal plants, with special reference to Noni (*Morinda citrifolia* L.)-  
*S. Sithanantham and S. Malarvannan*

Pest and disease management in medicinal crops : An overview-  
*B. Meena and T. Marimuthu*



Study on diversity, distribution and documentation of antiophidic plants used by the tribal and traditional healers in South India-  
*S. Aroumougame and N. Mathivanan*

## The 6<sup>th</sup> Annual Meeting and Award Ceremony

The award ceremony was organized on 15<sup>th</sup> May, 2012 by 12.00 noon at Chemical Sciences Auditorium, Maraimalai Campus, University of Madras, Chennai. The function was chaired by Dr. V. A. Parthasarathy, President, NABS. Dr. D.J. Bagyaraj, Vice-President, Prof. T. Marimuthu, Secretary and Dr. T. L. Baskaran, Treasurer were present.

Prof. Dr. T. Marimuthu welcomed the delegates, Fellows, NABS-Best Woman Scientist awardees and other members of NABS, faculties and students of University of Madras and other research and educational institutions. Prof. Dr. T. Marimuthu read out the citations and Dr. V. A. Parthasarathy conferred the Fellowship and 'NABS-Best Woman Scientist' Award for 2011.



Sixth Annual Meeting-  
Fellowship Award Ceremony



## Fellowship Conferred- *in person*

### **Dr. K. Nirmal Babu**

Indian Institute of Spices Research,  
Calicut, Kerala



### **Dr. Prakash Babu**

University of Hyderabad,  
Hyderabad, Andhra Pradesh



### **Dr. K. Sahayaraj**

St. Xavier's College, Palayamkottai,  
Tamil Nadu



### **Dr. K. Samiayyan**

Tamil Nadu Agricultural University,  
Coimbatore, Tamil Nadu

### **Dr. J. Venkateswara Rao**

Indian Institute of Chemical Technology,  
Hyderabad, Andhra Pradesh



The following two members of NABS were conferred fellowship *in absentia*.

## Fellowship Conferred - *in absentia*

**Dr. Sanjay Arora**

Central Soil Salinity Research Institute,  
Gujarat

**Dr. Utpala Parthasarathy**

Indian Institute of Spices Research,  
Calicut, Kerala

## Honorary Fellows- 2011

Honorary Fellowship was conferred on Dr. S. Ayyappan, DG, ICAR & Secretary, DARE, GOI, New Delhi (*in absentia*) on 14 May, 2012 by Dr. Kirti Singh during the inaugural function in the presence of President, NABS and other dignitaries.

Dr. H. P. Singh, DDG (Horticulture), ICAR, New Delhi (*in person*) was conferred Honorary Fellowship on 14 May, 2012 by Dr. Kirti Singh during the inaugural function.



## NABS-Best Woman Scientist Award -2011

**Dr. Latha Rangan**

Indian Institute of Technology  
Guwahati, Assam



**Dr. B. Meena**

Tamil Nadu Agricultural University  
Coimbatore, Tamil Nadu



## Admission of Corporate Fellow for 2012



Prof. P.I. Peter, Chairman,  
Noni BioTech Pvt. Ltd., Chennai

### Recommendations

The following recommendations emanated from the deliberations of the Workshop.

- ✿ There were many presentations on various aspects of Medicinal Plants. It is time, a monograph on 'Medicinal Plants' can be brought out with all the knowledge gained so far.
- ✿ Many ITKs are available with tribal from whom obtaining the information is difficult. A good beginning has been made in University of Madras which must be a model for others to document these ITKs.
- ✿ ITKs from tribal have indicated the availability of safer anti-venom plants. This knowledge must be validated.
- ✿ Medicinal plants are used for their secondary metabolites. *In vitro* techniques may be refined and commercialized for production of secondary metabolites.
- ✿ It is difficult to propagate the medicinal plants in view of high phenol / tannin contents. The micropropagation protocols must be perfected for many of these plants.
- ✿ *In vitro* techniques for evaluating the antioxidant and other medicinal properties must be carried out for those crops for which such studies have not been carried out.
- ✿ Some of the well validated medicinal plants may be carried forward for clinical trials.
- ✿ Sustainable eco-friendly and non chemical methods of management of insect and non-insect pests, diseases and nematodes affecting medicinal plants need to be developed and made available to cultivators.



President, Vice-president, Secretary and Treasurer with elected Fellows of NABS and NABS- Best Woman Scientist awardees



NABS office bearers with Local Organizing Committee Chairmen & Members

## About the organizers

### I. National Academy of Biological Sciences

NABS was founded on 31 December, 2004 by Prof. Dr. S. Kannaiyan, the then Chairman, National Biodiversity Authority, Ministry of Environment and Forests, Government of India., Chennai, Tamil Nadu, with EC members and Headquarter at Chennai. The Executive Council constitutes the President, Vice President), Secretary-Dr. S. S. Gnanamanickam and Treasurer-Dr. T. L. Baskaran. The Academy was registered as "**National Academy of Biological Sciences**" under the TN Societies registration Act 1975 (TN Act 27 of 1975) on 10<sup>th</sup> March, 2005 at Chennai South, Saidapet, Chennai- 600 015 with Certificate of Registration No. 110/2005.

#### **Vision**

To provide a common platform for the biologists to interact with each other for mutual benefit and to further the knowledge on areas of biological sciences.

#### **Mission**

- i. To foster and promote the new scientific knowledge that has emerged from recent advances in both basic and applied biological sciences in Agriculture, Animal sciences, Forestry and all other disciplines of Biological Sciences.
- ii. To enable interaction between biologists for mutual benefits in Academic and /or Research, Educational or Transfer of technology.
- iii. To encourage and facilitate activities that are geared to improve society at large and in particular the under privileged sections of the society.
- iv. To focus on problems of malnutrition in women and children through scientific approach.
- v. To address the important issues of conservation of soil and water.
- vi. To address the important issues of climate change and global warming.
- vii. To focus more on the emerging issues on Biotechnology.
- viii. To create awareness on environmental issues.
- ix. To facilitate technology transfer issues to farmers and other clients.

To further such objectives and goals as the General Body may decide from time to time.

## **II. World Noni Research Foundation**

### **Background**

The Indian Noni Research Foundation, established in 2001, was renamed as World Noni Research Foundation (WNRF) in early 2006 with wider scope to intensify research and scientific study on Noni (*Morinda citrifolia* L.) in various countries and India in particular. WNRF is a non-profit, self-sustaining and independent registered Trust, promoting scientific knowledge on all aspects of this plant like crop improvement, crop production, nutritional benefits, clinical and phytochemical studies, pharmacological research, product development, trade and marketing and verification of folk knowledge on wellness uses. WNRF is also engaged in promotion of Noni cultivation in collaboration with Government and Non-Government agencies.

### **Vision**

- ❖ To engage in frontline and pioneering research of the Noni plant and to have science based experimental data which prove the benefits of Noni and to use the data for enhancing human health and wellness.

### **Mission**

- ❖ To popularize Noni cultivation with optimum organic input and maximum output to uplift the livelihood of farming community.
- ❖ To validate and establish therapeutic actions of Noni against various diseases including new life style diseases and
- ❖ To create awareness about the food supplemental values of Noni in management of diseases and health as well.