



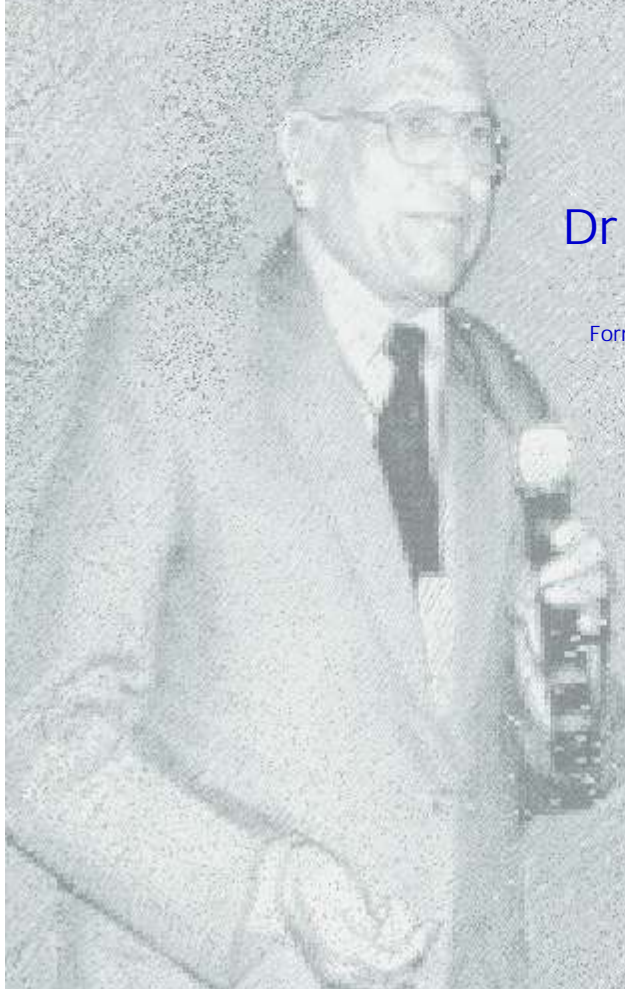
CSIR - INDIAN INSTITUTE
OF TOXICOLOGY RESEARCH



COUNCIL OF SCIENTIFIC
& INDUSTRIAL RESEARCH

Golden Jubilee Lecture

September 04, 2015



Dr Narender K. Jain

Executive Vice President,
International Society of Tea Science

Former Director, Tocklai Experimental Station
Former Director, CSIR IHBT, Palampur



50 Years of Service to the Nation



Dr Narender Kumar Jain

Narender Kumar Jain earned his Master's in 1956 from Banaras Hindu University and Ph.D. in Crop Production from University of Illinois in 1961, *summa cum laude*. He headed Agronomy department at Jute Agricultural Research institute for 2 years, before joining Government Agriculture College, Kanpur as Professor of Agronomy in 1964. Dr Jain was advisor to Royal Afghan Government for a year and in 1972 joined as Director of the oldest Tea Research Institute, Tocklai at Jorhat, Assam. The tea industry relevant R&D for 12 years under his stewardship, brought research-cost-benefit ratio for Tocklai's work to 1:200. In 1984 he founded the present-day CSIR Institute of Himalayan Bioresource Technology at Palampur, H.P,

helping manifold increase in tea productivity and price, apart from taking up development work on local resources of mushrooms, aromatics and floriculture, with innovative biotechnology. He was consultant to Department of Biotechnology, GOI for 3 years, coordinating biotechnology research funding in fruits, flowers, plantation and spice crops. He has 35 research publications, editing of 3 books including a compendium and 2 monographs, 15 Ph.D. students and 3 international conferences to his credit. An institute builder, Dr. Jain's main strength lies in organizing applied and fundamental crop production research for the benefit of the crop producers.

Dr. Jain was invited as a consultant to Goodricke Group of Tea Estates in organizing their research. Incidentally, the instant tea factory of the Goodricke group manufactures Instant tea which started using the patent developed by the group directed by Dr. Jain of a Tea Board Project in 1983. He was also invited to be the Advisory Director of Research by the Assam Tea Company which is the oldest Tea Company in India, being founded in 1936 and owns and operates a number of Quality tea estates in Upper Assam India.

After retirement in December 1993, Dr. Jain has focused on information sharing for the tea industry and tea scientists. Dr. Jain is the Founder Secretary of the International Society of Tea Science (ISTS), registered in the year 2000 A.D. The Society has published 14 issues in 6 volumes of the International Journal of Tea Science that includes 6 special numbers. Dr. Jain has organised 3 international conferences at Beijing, New Delhi and Kolkata after his retirement. He has been an international adviser to the OCHA 2004 and 2007, International Tea Conferences in Japan. In December 2006, Dr. Jain was invited to Masan College South Korea for the launch of International Society of Beverages and judge for the championship for master tea taster for black tea and green tea.

With his initiative, The International Society of Tea Science has undertaken to publish a book series "Global Advances in Tea Science". The 1st publication in 1999 by Aravalli Books International New Delhi was a 1000-page compendium; book 2 of the series is a monograph "Protective Effects of Tea on Human Health", published in 2006 by CABI, London; The current book Economic Crisis in Tea Industry, has been in the making for 5 years and is being published by the Studium Press L.L.C. , Houston Texas, USA.



“Current Status and Future Development of Global Tea”

Dr N.K. Jain,

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Tea is grown in almost fifty countries, on an area of over 4 million hectares producing almost half a million kilogram of black, green and may other variants of tea for consumption. However, tea production exceeds 5 million kilos per year in only a handful of tea growing countries. China and India are the largest producer and consumer countries, contributing almost 2/3rd of the total production but consume over 80% of their own production. They export less than a 5th their total crop. The leading exporters are Kenya and Sri Lanka, which contribute only 16% to the world crop but their exports account for 45% of the world trade because they hardly consumed any tea internally. In recent years, Kenya has been exporting more tea than its annual production, presumably importing cheap tea to meet the short fall.

Global Tea Research Tea Institutes focus on agro technology to increase crop productivity. Phyto-sanitary measures to reduce crop losses by weeds, pests and diseases are highly developed feature of tea production. Tea crop is perhaps the leading consumer of chemical pesticides, leading to pesticides residues. A comparative study of the impact of research over a century in two climatically similar tea growing regions in North India, of which one region has been supported by R&D and the other denied this benefit, forcefully brings home the long term advantage of investing in R&D.

The balance between supply and demand has an impact on tea prices. A 3% excess supply over demand depresses global tea prices by 25%. If the tea growing has to stay profitable, researchers must find the ways and means of mopping up excess supply through extraction of bio-chemicals which can be utilized for pharmaceuticals and industrial products. China is reportedly earning more from tea chemicals than by selling tea as a beverage. Short term trends projected over 15 years indicate that the supplies will continue to be larger than tea consumption, thus keeping the global tea prices low.

Tea industry employs >12,00,000 workers, 51% of whom are women. The productivity of fast tea pluckers can be very high. The energy consumption in this effort was studied in an ergonomic study, the results of which are presented in three slides, as a food for thought.





CSIR-INDIAN INSTITUTE OF TOXICOLOGY RESEARCH (COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH)



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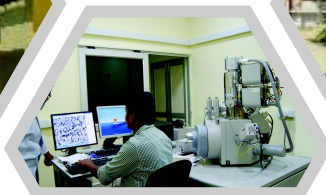
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- NABL accredited
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- Analytical services
- Environmental monitoring and impact assessment
- Epidemiological studies
- Information on chemicals / products

Recognitions

- Scientific & Industrial Research Organizations (SIROs)
- UP Pollution Control Board (Water & Air)
- Indian Factories Act (Drinking Water)
- Bureau of Indian Standards (Synthetic Detergents)
- Food Safety & Standards Authority of India (FSSAI)

Technologies Developed / Available

- Water Analysis Kit
- Mobile Laboratory Van for on spot water quality analysis
- Argemone Detection Kit for rapid screening of Argemone in mustard oil
- CD-Strip for detection of butter yellow, an adulterant in edible oils
- Arsenic Detection Kit



Director
CSIR-Indian Institute of Toxicology Research
MAHATMA GANDHI MARG, POST BOX NO 80,
LUCKNOW-226001 (INDIA)

+91 522-2621857, 2613357
director@iitr.res.in

Fax: +91 522-2628227
www.iitrindia.org



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