

Regd. No. JB 14052-26

ISSN 0970-4078  
ONLINE ISSN 2229-4473

## Society for Plant Research

Executive Body (2014-2017)

CHIEF PATRON

Prof. Trilochan Mahapatra, DG, ICAR and SECRETARY, DARE

PATRONS

Prof MP Yadav, Ex-Vice Chancellor

SVP University of Agriculture and Technology, Meerut- 250 110, INDIA

President

Prof RK Gupta, Jammu

Founder Secretary General

Prof SK Bhatnagar, Meerut

Joint Secretary

Prof V P Singh, Delhi

Vice President

Prof A S Athowalia, Chandigarh

Treasurer

Dr Deepika Abrol, Jodhpur

Zonal Secretary (West)

Prof. Vinay Sharma, Bikaner

Zonal Secretary (North)

Dr Basu Pratap Sinha, Patna

Executive Members

Dr Suresh Pabbi, New Delhi; Prof SDS Murthy, Tirupati; Dr Bandana Bose; Dr JN Srivastava, Agri; Prof Rama Pratap Singh, Lucknow; Dr Ashish Bhatnagar, Ajmer; Dr Rakesh Singh, New Delhi

Editor in Chief

### Vegetos: An International Journal of Plant Research

Official website: [www.vegetosindia.org](http://www.vegetosindia.org)

[Thomson Reuter IF: 0.042 (2013-14); NAAS IF: 6.00 (2015-16)]

(Journal is being indexed and abstracted in Thomson Reuter's Science Citation Expanded (SciSearch®), Journal Citation Reports/Science Edition, BIOSIS, Elsevier (SCOPUS), CAB Abstracts, MAAPA Indian Science Abstracts and NAAS)

For online access and submission, log on to: [www.vegetosindia.org](http://www.vegetosindia.org) or [www.indianjournals.com](http://www.indianjournals.com)

Editor in Chief

Prof SK Bhatnagar, Meerut

Email: [drskb2000@yahoo.com](mailto:drskb2000@yahoo.com)

Executive Editor

Prof Dolly Wanti Dhar, New Delhi

Associate Editor

Dr Sargita Bansal, Ludhiana

Business Manager

Dr Deepika Abrol, Jodhpur

Email: [dabrol2000@yahoo.com](mailto:dabrol2000@yahoo.com)

Editorial Board

Dr C Katsaros, Athens, Greece; Dr Stefan Kuan, Ireland; Prof P W Barzoke, Aligarh; Prof Y Vinnia, Meerut; Prof Poonam P. Jaiswal, USA; Dr SK Prabhuj, Gurgaon; Prof MK Dhar, Jammu; Prof Arvind Kumar, Jaipur; Prof R C Sobti, Lucknow; Prof T S Kallion, California; Prof K S Rao, Delhi; H B Singh, Varanasi; Dr S C Chan, South Korea

Councillors

Dr Alok Khare, Bareilly; Dr Anika Mehta, Ranchi; Prof Neelam Pant, Alwar; Dr R S Sengar, Meerut; Dr Sushma Dasgupta, Ranchi; Prof I B Prasher, Chandigarh; Dr Veda Krishna, New Delhi; Bhakti Rana, Meerut; Dr S H Wani, Manipal; Dr Shalini Mehta, Ranchi; Dr Mukta Gargwal, Bareilly; Dr Lakshman Prasad, New Delhi; Dr M C Sidhu, Chandigarh; Dr Manendra Grewar, New Delhi; Dr Anubhuti Sharma, Alwar

Founder Office

Department of Botany, Bareilly College, Bareilly - 243 001 India

Administrative & Corporate Office

D-204 Green Estate, Opposite Agriculture University, Meerut - 250 110, India

Editorial Office

College of Biotechnology, SVP University of Agriculture & Technology,

Meerut 250 110 India

Note: Editorial Board of VEGETOS is not responsible for the truthfulness of scientific contents presented by the authors.

Printed by Shri Gyansagar Publications, Meerut - 7351738061

Organizer



Co-organizer



# National Seminar on Microbes and Human Welfare (23-25 September, 2017)

Chief Patron: Hon'ble The Chancellor, Dr. Sandeep Bakshi  
Patron: Hon'ble The Vice-Chancellor, Prof. H. N. Verma

## SOUVENIR & ABSTRACT BOOK



### Organizing Committee

Chairman  
Prof. Anupam Varma  
(ARI, New Delhi)

Vice-Chairman  
Prof. S.K. Bhatnagar  
Modipuram, Meerut

Secretaries  
Prof. Amar P. Garg Prof. Divya Shrivastav  
Pro.Vice Chancellor, JNU Director, Life Sciences



# National Seminar on Microbes & Human Welfare

23-25 September, 2017



Dedicated to

Prof. H. N. Verma

On his Platinum Jubilee, 75<sup>th</sup> Birth Anniversary

( 14<sup>th</sup> September, 1942)



## JAIPUR NATIONAL UNIVERSITY

UGC Approved



Ranked Amongst **TOP 30**  
Best Universities in the Country (India Today-2017)

**1<sup>st</sup> NAAC**  
Accredited Private University in Rajasthan  
Offering Quality Academic Programmes



### COURSES OFFERED

#### ENGINEERING & TECHNOLOGY

**B.Tech. (AICTE Approved)**

Biotechnology | Computer Sc | E & C | Electrical  
Food Tech | Chemical | Mechanical | Civil  
Electronics & Computer Engineering | B.Tech.+MBA

**M.Tech.:** Computer Science & Engg. | Electrical,  
Electronics & Communication | Civil Engineering

BBA | B.Com | MBA | MBA in Hospital &  
Healthcare Management | Hotel Management

HMCT+MBA | BCA | B.Sc. (Hons.) (Biotech)  
Microbiol. | Bioinfo. | Biochem | Agriculture  
M.Sc. (Biotech. | Microbiol. | Botany | Bioinfo.  
Physics | Chemistry | Maths. ) | Physiotherapy

BJMC | M/JMC | B.A. (Hons.) | M.A.-English  
M.A.-Social Work | Fashion Design

B.Pharm/M.Pharm (AICTE & PCI Approved) | MCA (AICTE Approved) | 3 year LLB  
5 year B.A./BBA-LLB (BCI Approved) | LLM | Nursing (INC Approved) |  
B.Sc.-B.Ed | B.A.-B.Ed. | B.Ed. /M.Ed (NCTE Approved) | B.A.

Diploma Programmes : Engineering | Medical Lab Technician | Videography  
Fashion | Yoga | Agri. Business Mgmt.

Ph.D IN VARIOUS PROGRAMMES

**INSTITUTE FOR MEDICAL SCIENCES  
AND RESEARCH CENTRE OFFERING**

**MBBS**

150 Seats Approved by MCI

Jaipur-Agra By-Pass, Near New RTO Office Jagatpura, Jaipur - 302017  
Mob.: 9314288082, 9314088092, 9309088082 Ph.: 0141-3324050 |  
Email: info@jnujaipur.ac.in, seedlingacademy@hotmail.com Website: www.jnujaipur.ac.in