



Indian Phytopath News

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From President's Desk

Agroterrorism - A Threat to Food Safety and National Biosecurity

While the atmosphere is rife with the news of possible lab leakage of SARS-Cov-2- virus in a lab in China, with many countries demanding a need for proper investigations about the origin of this lethal virus, I am wondering what the urgency was of creating such a lethal virus which could threaten mankind. By March 2021, the virus globally infected 128.9 million people causing death of 2.9 million of them. India too registered 12.2 million cases with death of 160 thousand people during the period. If the reason for creation of such virus with gain-of-function is sinister then every country is vulnerable to serious biosecurity threat. Rightly, the Dual Use Research of Concern (DURC) has always been a matter of concern for biosecurity agencies. Besides, I am also cynical that if such an act of bioterrorism can be resorted to for harming human beings knowingly, thereby destabilizing a country's population and socio-economic status, there are reasons to believe that rogue governments and extremist groups might also prefer to use agricultural pathogens, rather than targeting people with human diseases. This is because the agroterrorism technology may not require much sophistication and there is much lesser risk to the perpetrators in collecting or developing the biological agents infecting crops. In military jargon, food crops and food animals globally represent "soft/ easy targets;" they are the ones largely unprotected and vulnerable to attack. Secondly, cultures of pathogenic fungi/ bacteria/ viruses or nematodes can be transported; spread unnoticed in unsuspecting locations and crops and disseminated effectively. Vice Chief of India's Army Staff recently remarked that "future wars may gravitate towards zero cost wars, wherein a very virulent pathogen may immobilize high-



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technology arsenal". His point makes even more sense when it has been noted that agriculture in India remained largely unaffected by the pandemic. India's food grain production during 1920-21 hit an all-time high of 303 million tons and horticulture production touched 327 million tons. These kinds of numbers attract nefarious intentions by Rogue Governments or non-state Extremist groups who may as well resort to agroterrorism to fulfill their unparliamentary aims.

Agroterrorism, or the use of plant pathogens to infect a nation's cultivated crops, is an emerging topic due to its threat to global food security and economic stability. Lessons learnt from the Bengal famine in 1943 cannot be forgotten when about 4 million people in Bengal either died of starvation or migrated from the state due to crop failure of paddy blight caused by *Helminthosporium oryzae*. The alarming loss of life and economy resulted due to failure of British ruled India to manage the disease. One can very well imagine that a severe setback to Country's economy can result if a significant portion of its food crops and animals is destroyed by intentional spread of pests and diseases. The importance of protecting our food crops, food animals, and domestic food supply is paramount as agricultural production provides jobs to half, and food to 100% population. In this regard it is pertinent to

mention that the report of invasive Tropical Race 4 of Panama wilt of banana in Bihar in 2015 is enigmatic. A country which is the highest producer of banana shows little scope for possibilities of import and introduction of this invasive pathogen. Sudden appearance of invasive wheat blast like disease in West Bengal bordering Bangladesh during 2016-17 does not seem to be a normal/natural outbreak for a disease which was previously reported in Bolivia, several thousand kilometers apart, in 1985. Similarly, outbreak of fall army worm of maize in Karnataka in August 2018 may not be treated as a usual phenomenon. The pest previously devastated maize crop during 2016-18 in several countries of Africa, more than 4000 km apart. Wheat and maize crop accounts for more than 65% of food grains in the India and loss to these two major cereals is sufficient to destabilize the economy as well as food security of our country. Besides such outbreaks of invasive pests, regular interception of invasive pathogens by ICAR-NBPGR on imported seeds also constitute potential risks and threats to Indian Agriculture. DRDO-DIHAR has recorded species of fungi, bacteria, and virus on crops in the international borders that are not documented so far (personal communication). The act of intentional agroterrorism in all these cases cannot be ruled out.

Suspecting threat to biosecurity, recently the Ministry of Agriculture alerted state governments, agriculture universities, seed associations and agencies under the Indian Council of Agricultural Research (ICAR) over unsolicited/mystery seed parcels reaching the country from unknown sources. The notification issued on 6 August 2020, quoted a report by the US Department of Agriculture (USDA), which called this a “brushing scam” and “agricultural smuggling”. USDA also reports that unsolicited seed parcels may contain seeds of an alien, invasive species or is an attempt to introduce pathogens or disease that may pose a serious threat to the environment, agriculture ecosystem, and national security. Any localized strike against “soft” targets with a quarantine pathogen could not only cause regional economic collapse but also an embargo of exports, threatening our balance of payments.

Although emergency preparedness objectives have been enacted at national, state, and even local levels,

preemptive measures can no longer remain the sole responsibility of intelligence and law enforcement agencies. Agricultural Scientists while reporting new pests and pathogens of crops, should do so carefully as well as responsibly. They should try to analyze whether there were sufficient reasons for the intercepted microbes to be there under natural circumstance? Any new outbreaks and records of agricultural pathogens and pests should be reported to MEA, through ICAR, in CBM forms, prescribed by the Biological Weapons Convention (BWC), NPPO (DPPQS, DACFW), ICAR, NARS and DRDO, should attempt to leverage their unique strength and coordinate proactively in R&D, surveillance of the international borders to improve security and pioneer new methods of disease resistance. Plant immunology is an expanding field which explores the molecular defense mechanisms innately present within the plant kingdom and provides insight concerning novel methods of boosting the immunity of susceptible crops to existing and emerging pathogenic agents. DRDO in coordination with ICAR-NIBSM and SAUs needs to establish recognized graduate student teaching programs to increase the pool of highly qualified and motivated students to work on homeland defense and other contemporary research topic having immediate applications to the agricultural biological weapons threat. There is need to constitute National Advisory Board on Biosecurity with members having specialization in Crop Protection and Synthetic Biology to look after overall conduct, exchange of organisms, progress in biosecurity and biosafety regulations and their implementation. In case of bioterrorism or for timely detection and management of alien pests, government must create a response coordination system and rapid-action forces for damage control with multi-institutional expert stakeholders.

Heightened awareness of the potential for agroterrorism is vital for implementation of prevention measures and promotion of a greater understanding of the indirect threats posed by a lesser-publicized form of bioterrorism. Such awareness can provide suggestions for preventive measures which may be taken by both the agricultural scientific communities and Govt to defend a nation's cultivated crops against the targeted use of plant pathogens. In my opinion, the Indian

Prevention of Terrorist Act (POTA) and the Indian Penal Code are inadequately equipped to deal with biowarfare and bioterrorism, particularly agricultural bioterrorism. Besides, India is member of the BWC, a multilateral disarmament treaty with 183 member countries that effectively bans biological and toxin weapons by prohibiting their development, production, acquisition, transfer, stockpiling and use. The treaty is strengthened by exchanging annual confidence-building measures (CBMs) - a politically-binding report that aims to prevent or reduce the occurrence of doubts and suspicions, and improve international cooperation on peaceful biological activities. However, a legally binding system with provisions to deter, apprehend, and punish offenders, at national and international levels, must be built within the above instruments.

P.K. Chakrabarty
President

Indian Phytopathological Society

Editorial

Molecular Approaches for Low Cost Point-of-Care Detection of Plant Pathogens

In parallel with the continuing growth of the human population, the percentage of the land covered by crops has increased constantly, with 50% of the current habitable world land dedicated to agriculture. It is estimated that approximately 540 million hectares are planted worldwide to only three major crop species: maize, rice, and wheat. Plant pathogens can cause substantial reduction of crop productivity. Considering five of the major crops (maize, rice, wheat, potatoes, and soybean), it is shown that the losses associated with pathogens and pests at a global level, range between 17 and 30% annually. Further, as a consequence of global trade and transport, introduction of invasive alien pathogen species into new areas has been increasing and causing more damage. In order to control, or wherever possible to prevent the spread of plant pathogens into new areas, it is mandatory to develop fast, efficient, and inexpensive methods for early detection of pathogens. Traditional methods for fungi



and bacteria identification rely on symptom observation and culture-based methods. Other widely used phyto-diagnostic methods are based on immunological techniques such as enzyme-linked immunosorbent assay (ELISA), immunofluorescent staining, immunoblot, and lateral flow immunoassays (LFIA). Since the nineties, more laboratories started to adopt DNA-based methods for pathogen detection and identification, using polymerase chain reaction (PCR) and its variants, such as quantitative PCR (qPCR), nested PCR, multiplex PCR, and digital PCR (ddPCR). These nucleic acid-based methods have proven to be a good choice for the development of detection tools in several fields, such as human/animal health, food safety, and water analysis, and their application in plant pathogen detection is becoming more and more common. Such methods are usually very specific, relatively fast, and cheap but still present some disadvantages, as in most cases, specific equipment is required and also trained personnel. Since the first few years of this century, new technologies are emerging based on isothermal amplification of DNA, such as the loop-mediated isothermal amplification (LAMP), recombinase polymerase amplification (RPA), helicase-dependent amplification (HDA) etc, capable of overcoming some of the drawbacks of PCR-based methods. All these approaches, even if based on different principles, share the main characteristic of amplifying target DNA at constant temperature, therefore eliminate the need of a thermal cycler. Now more recently nucleic acid-based protocols for point-of-care (POC) plant pathogen detection and identification are being developed and analyzed. These methods have a high potential for early detection of destructive diseases in agriculture and forestry, which should help make molecular detection for plant pathogens accessible to anyone, anywhere, and at any time. These methods are fast, specific, sensitive, and cost-effective that can be successfully used in plant pathology directly in the field by less-specialized personnel using minimal equipment. POC analysis can provide a useful, fast, and efficient preliminary on-site screening that is crucial in the struggle against plant pathogens.

Rashmi Aggarwal
Chief Editor, IPS Newsletter

Invasive/Emerging Pests/New Reports

First report of “*Candidatus Phytoplasma oryzae*” associated with Lemongrass in India

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Cymbopogon citratus (DC. ex Nees) Stapf commonly called lemongrass is a species of Poaceae family. It is cultivated as culinary and medicinal herbs because of its lemon like scent and antiseptic chemical constituents. During survey of botanical garden at DDU Gorakhpur University Campus, Gorakhpur, Uttar Pradesh, India in August 2017, the *C. citratus* plants showed little leaves and chlorosis symptoms with an incidence of 40%. The amplified fragments (~1.2kb) of phytoplasmal rRNA gene obtained from the five *C. citratus* little leaf (CII) phytoplasmas Gorakhpur (GKP) isolates directly sequenced. They shared 100% sequence identity among them and two of them were submitted to the GenBank (Accession no. MT127617, MT127618). Pairwise sequence analysis of the 16S rRNA gene sequence of the CII 1 and 2 phytoplasma isolates revealed 100% sequence identity with '*Candidatus Phytoplasma oryzae*' Sugarcane grassy shoot phytoplasma strain (MN719898). Phylogenetic analysis also confirmed that the 16S rRNA gene sequence of CII isolates clustered together with phytoplasma strains belonging to 16SrXI group ('*Ca. P. oryzae*'). Further virtual RFLP analysis of 16SrRNA gene sequence with online *iPhyClassifier* tool were performed using seventeen restriction endonucleases, which allowed affiliation of the CII isolate with 16SrXI-B subgroup phytoplasma strain with similarity coefficient of 1.0. '*Ca. P. oryzae*' (16SrXI-B subgroup) is one of the important phytoplasma group that infects rice, sugarcane, arecanut, vegetables and ornamentals in India. *Until now*, 16SrII phytoplasma group has been reported on lemongrass from Haryana, India. Hence, this is the first report of the association of '*Ca. P. oryzae*'. (<https://doi.org/10.1007/s42161-020-00645-9>)

Symposia/Workshop/Training: Organized

Prof. C. Manoharachary, Honorary NASI Senior Scientist, Department of Botany, Osmania University Hyderabad served as Course Director of a refresher course entitled “Advances in Web of Life”, organised under auspices of NASI, INSA, and Bangalore academy at Telangana University from 15-28th March 2021. In all 26 eminent scientists have delivered lectures and nearly 50 participants attended the course.

IPS Zonal Symposia 2020-21 (Virtual mode)

IPS Central Zone Symposium

Indian Phytopathological Society (Central Zone) in association with Plant Protection Advisory cell of Dr. Y.S.R. Horticultural University, Andhra Pradesh jointly organized two days symposium on “Advances in Phytopathology” January 6-7, 2021. More than 125 delegates participated in the events.

IPS Eastern Zone Symposium

A symposium on “Robust plant protection strategies for sustainable agriculture” was jointly organized by ICAR-National Rice Research Institute, Cuttack, Odisha and the Indian Phytopathological Society (Eastern Zone) on January 19-20, 2021. The meeting was attended by 90 delegates.

IPS Mid-Eastern Zone Symposium

A conference on “Biocontrol of Plant Diseases under Current Scenario of Restricted Pesticide Use” was jointly organized by the Department of Plant Protection, Faculty of Agricultural Sciences, Aligarh Muslim University, Aligarh, Uttar Pradesh and the Indian Phytopathological Society (Mid-Eastern Zone) on January 27-28, 2021 a virtual platform. A book entitled “Diseases of Nationally Important Field Crops” edited by Prof. M.R. Khan, Z. Haque and F. Ahmad was released by the dignitaries. The meeting was attended by more than 200 delegates.

IPS Western Zone Symposium

National Symposium on “Probing beneficial microorganism for next green revolution” was held from February 25-26, 2021 in virtual mode organized by

Association of Plant Pathologist, Dr. PDKV, Akola, Maharashtra and the Indian Phytopathological Society (West Zone). More than 150 delegates participated in the event across the zone.

IPS Bionivid Webinar

A webinar on “Next Generation Sequencing for Deciphering Host-Pathogen Interactions” was organized by the Indian Phytopathological Society in collaboration with Bionivid Technology, Bangalore, India during 4-5 February, 2021. A total of 528 delegates comprising scientists, professors, research scholars and students registered for the webinar. It was also live streamed on YouTube and Facebook.

IPS National e-Conference on “Plant Health and Food Security: Challenges and Opportunities”

The Indian Phytopathological Society (IPS), New Delhi organized three days virtual National e-Conference on “Plant Health and Food Security: Challenges and Opportunities” in the Division of Plant Pathology, ICAR-IARI, New Delhi during March 25-27, 2021. The National Symposium and Annual Meeting marked the 74 years of service of IPS for the cause of plant pathology at national and international level under the Leadership of Dr. P.K. Chakrabarty, President, IPS & Member, ASRB, New Delhi. The theme of the conference was also aimed to commemorate the International Year of Plant Health 2020-21.

A Souvenir-cum-Abstract of the research papers presented in the conference was released in the inaugural function by the Chief Guest Dr. T. Mohapatra, Secretary (DARE) & Director General (ICAR) and Guest of Honours Dr. T.R. Sharma, DDG (Crop Science) and Dr. A.K. Singh, Director, ICAR-IARI, New Delhi. A technical bulletin on “Stewardship for Safe Use and Handling of Pesticides” was also released on the occasion at the august hands of the chief guest.

The Society also conferred awards to the eminent past and present researchers in the field of plant pathology in different categories during inaugural session of the conference. More than 450 delegates from 13 countries participated in this mega-event. During the 3 days conference, 10 technical sessions on different themes on frontier areas of plant pathology and plant health management were conducted. Over all 2 plenary lectures, 43 keynote/lead lectures, 53 oral



presentations and 180 posters were presented in the conference.

The following decisions were taken and approved by the General Body:

1. *Proposal for institution of new award - proposed by Prof. B.L. Jalali, former President, IPS*
- GB deliberated and agreed on the proposal. Prof. Jalali will be informed formally and detailed guidelines will be developed by the Society in consultation with Prof. Jalali.
2. *Proposal of institution of “Pravasi Fellow” – proposed by Dr. C.D. Mayee, former President, IPS for honoring foreign based Indian plant pathologists.*
- GB deliberated and agreed on the proposal. The detailed guidelines will be developed by a committee for this award.
3. *Platinum Jubilee Celebration of IPS - 2022 (Hybrid mode)*
- GB deliberated and agreed to commemorate completion of 75 years of IPS by organizing Platinum Jubilee Celebration on 28th February 2022. The topic and venue will be decided in the next EC meeting.
4. *New Journal:* A proposal for initiation of new journal by the Society was discussed in the GB. After discussion GB suggested that proposal may be deferred till the impact factor of the journal *Indian Phytopathology* is issued and NAAS rating is increased above 6.0.

Panel Discussion on “Stakeholders meet on Plant Protection Issue” on March 26, 2021

Stakeholders meet on plant protection issues and panel discussion on issues and concerns regarding

use and registration of agro-chemicals and biopesticides in India was held on 26.03.2021 from 2.30-5.45 pm.

The virtual panel discussion session was held under the chairmanship of Dr. S.K. Malhotra, Agricultural Commissioner, Govt. of India and Dr. M.K. Naik, Vice Chancellor, UAHS, Shivamogga, Karnataka. Dr. Srinivasa N, Scientist (Scientist Sr. Scale), Division of Plant Pathology, ICAR-IARI, New Delhi was the rapporteur. The session event was coordinated and moderated by Dr. P.K. Chakrabarty, Member ASRB, Govt. of India; former ADG (Plant Protection) ICAR and President of Indian Phytopathological Society and one of the representatives of the industry, requested instantly.

Chairman, Dr. S.K. Malhotra, who is also the Chairman of the Registration Committee of CIB, DPPQS, GOI, responded to the points raised during the session. He apprised the participants about various policies of Govt. of India on the subject of the session. He also agreed to look into the rational and relevant issues raised by the stakeholders. Recommendations drawn out from the panel discussion are available in the proceedings of the National e-Conference 2021, that is uploaded on the website of the Society.

Advanced National Training Programme (ANTP 2021)

A 21 days training course Advanced National Training Programme (ANTP 2021) on “Mushroom Production and Processing Technology” was jointly organised by Indira Gandhi Krishi Vishwavidyalaya, Raipur and National Agriculture Development Cooperative Ltd., Baramulla (J&K) from 2-22nd March, 2021. The Course Director of the National Training Programme was Dr. M.P. Thakur, Director instructions and Controller of Examination IGKV, Raipur.

Awards/Honours/Promotions

This year the following award lectures were delivered in the national e-conference:

- **Presidential Lecture: Dr. P.K. Chakrabarty**, Member ASRB and President, Indian Phytopathological Society, IARI, New Delhi (Title: Plant Health Management for Food Security needs Advanced Research and Enabling Policies)

- **Mundkur Memorial Award Lecture: Dr. C. Chattopadhyay**, Principal Scientist & Joint Director Academic, ICAR-Indian Institute of Agricultural Biotechnology, Garhkhatanga, Ranchi, Jharkhand, India (Title: Plant Pathology in the Era of New Education Policy: challenges and opportunities)
- **M.S. Pavgi Memorial Award Lecture: Dr. R. Viswanathan**, Principal Scientist & Head, ICAR-Sugarcane Breeding Institute, Coimbatore, Tamil Nadu, India (Title: Impact of yellow leaf disease in sugarcane and successful disease management to sustain crop production)
- **J.F. Dastur Memorial Award Lecture: Dr. Kajal Kumar Biswas**, Principal Scientist, Plant Virology Unit, Division of Plant Pathology, ICAR-Indian Agricultural Research Institute, New Delhi, India (Title: Understanding of sleeping giant-virus in citrus and cotton: perspective to economic losses in India and a challenge to battle)
- **Sharda Lele Memorial Award Lecture: Prof. V. Devappa**, Professor & Head, Department of Plant Pathology, College of Horticulture, UHS Campus, GKVK, Bengaluru, Karnataka, India (Title: Status of pomegranate wilt (*Ceratocystis fimbriata*) in Karnataka and it's management strategies)
- **J.P. Verma Memorial Award Lecture: Dr. Dhruva Kumar Jha**, Professor, Microbial Ecology Laboratory, Department of Botany, Gauhati University, Guwahati, Assam, India (Title: Problems and prospects of utilization of bacterial endophytes for the management of plant diseases)
- **S. Sinha Memorial Award Lecture: Dr. Pramod Gupta**, Scientist (Plant Pathology), Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, Madhya Pradesh, India (Title: Current status of Cercosporoid fungi in India, effective management strategies and future directions)

During the inauguration session, the renowned plant pathologists were conferred with the following awards:

- **A.P. Misra Lifetime Achievement Award: Prof. B.L. Jalali**, Ex-Director of Research, HAU, Hisar, Haryana
- **IPS Recognition Award**
Dr. Basant Ram, Former Vice Chancellor, NDU&T, Faizabad, Uttar Pradesh
Dr. H. Shekar Shetty, Lifetime Distinguished Professor, University of Mysore, Mysore, Karnataka

Dr. R.P. Thakur, Former Principal Plant Pathologist & Head PQL, ICRISAT, Patancheru, Hyderabad, Telangana

Dr. Srikant Kulkarni, Former Professor & University Head, Department of Plant Pathology, UAS, Dharwad, Karnataka

- **B.N. Chakraborty and Usha Chakraborty IPS Best Teacher Award: Dr. Robin Gogoi**, Principal Scientist, Division of Plant Pathology, ICAR-IARI, New Delhi
- **M.K. Patel Memorial Young Scientist Award: Dr. G. Prakash**, Scientist, Division of Plant Pathology, ICAR-IARI, New Delhi (Title: Understanding Pathotypic diversity and Genomics of *Magnaporthe* for management of blast disease)

Prof. M.J. Narasimhan Academic Merit Award 2019-20

It is to inform the house that total 16 candidates from 8 zones have participated in the Prof. M.J. Narasimhan Academic Merit Award 2020-21. The judging committee recommended following two the names as winner for this award as both of them have secured equal marks. Rest all 14 candidates will be awarded with commendation award.

1. **Dr. Scindiya Mohandoss**, ICAR-Sugarcane Breeding Institute, Coimbatore, Tamil Nadu, India (Title: Molecular characterization and functional analysis of pathogenicity related genes in *Colletotrichum falcatum* causing red rot in sugarcane).
2. **Ms. Mehulee Sarkar**, Advanced Centre for Plant Virology, Division of Plant Pathology, ICAR-Indian Agricultural Research Institute, New Delhi (Title: Suppressor activity analysis of Tomato leaf curl New Delhi virus gene(s) and development of RNAi construct to evaluate their efficacy in inhibiting the virus).

APS-IPS Travel Sponsorship 2020-21

This year total 5 students received nominating from zonal chapters, of which, 4 candidates participated for APS-IPS Travel Sponsorship in the National e-Conference and all the names are recommended for APS Travel Sponsorship and the name of final winner will be selected by American Phytopathological Society, USA.

1. **Mr. Jagmohan Singh**, ICAR-Indian Agricultural Research Institute, New Delhi, India (Title: Deciphering the *Chaetomium globosum* induced signaling network in tomato against early blight).
 2. **Mr. Gowtham Kumar Routhu**, Assam Agricultural University, Jorhat, Assam, India (Title: Post transcriptional gene silencing using Coat protein gene specific dsRNA molecules against cognate Cucumber mosaic virus (CMV) infecting Bhut jolokia crop of Assam).
 3. **Ms. Sumaih Wani**, Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir, Srinagar J&K (Title: Status and molecular characterization of potato virus Y strains in Kashmir valley)
 4. **Ms. Sabiha Sayeed**, Aligarh Muslim University, Aligarh, Uttar Pradesh (Title: Efficacy of plant extracts against *Mungbean Yellow Mosaic India Virus* (MYMIV) in urd bean (*Vigna mungo* L.)
- **Dr. H.B. Singh** was conferred upon the Fellowship of International Society for Noni Science, Chennai, India for the year 2020 and Sir Syed Ahmed Khan Memorial Award during IPS-AMU Virtual Conference on 27.01.2021. Dr. Singh is also appointed as Chairman, Project Advisory Committee for Agriculture & Allied Sector by Council of Science & Technology, Govt. of Uttar Pradesh for a period of 3 years (2020-2023).
 - **Dr. Naresh K. Mehta**, Former Assoc Dean, Professor Plant Pathology and Consultant Faculty, CCS Haryana Agricultural University, Hisar, Haryana was conferred upon with prestigious Dr. Y.L. Nene Outstanding Plant Pathology Teacher Award for the year 2020 by Indian Society of Mycology and Plant Pathology, Udaipur, Rajasthan in recognition of his valuable contribution in the field of Plant Pathology.
 - **Prof. C. Manoharachary**, Honorary NASI Senior Scientist, was honoured with Dr. A.P.J. Abdul Kalam award for Lifetime contribution in Teaching, by Marina Labs, Chennai (Research and Development) on 7th March 2021.
 - **Dr. Amar Bahadur**, Assistant Professor, Department of Plant Pathology, College of Agriculture, Tripura, Lembucherra, Agartala, has been awarded "Outstanding Scientist Award" in the International Scientist Awards on Engineering, Science and

Medicine organized by VDGGOOD Professional Association of India on March 6-7, 2021 at Goa, India.

- **Dr. Gururaj Sunkad** promoted as Associate Director of Research, University of Agricultural Sciences, Raichur, Karnataka.
- **Dr. Phatik Tamuli**, Associate Professor & Head, Department of Botany, Darrang College, Tezpur, Assam has been awarded Fellowship of the Linnean Society of London (UK).
- **Dr. Pranab Dutta** is nominated as a Fellow of Society of Biocontrol Advancement (SBA), Bengaluru. He also received Second Best Oral Presentation award during National Conference on “Priorities in Crop Protection for Sustainable Agriculture” at College of Agriculture, CAU, Imphal in collaboration with ICAR-National Bureau of Agricultural Insect Resources, Bengaluru during March 16 to 18, 2021.
- **Dr. R. Viswanathan** received Sir Syed Ahmed Khan memorial award from Aligarh Muslim University, Aligarh on 27.01.2021 for the best research work in Plant Pathology in the country as part of centenary celebrations of AMU, Aligarh. He was also awarded Outstanding Agriculture Scientist Award - 2020 for the commendable contribution to Plant Pathology and Higher Education by Dr. B. Vasantharaj David Foundation, Chennai. Besides, he is conferred with Fellow of Society for Sugarcane Research and Development (2020), Coimbatore on 06.11.2020 at ICAR-SBI, Coimbatore.
- **Mr. Amit Kumar Kesharwani**, SRF, Division of Plant Pathology, ICAR-IARI, New Delhi was honoured with “Young Scientist Award” for excellence in research, during 2nd International Conference on “Environmental, Agricultural, Chemical and Biological Sciences”, organized by Voice of Indian Concern for the Environment (VOICE) during January 24-26, 2021.

IPS Election Result 2021

The Society has developed OTP based online election voting system for preliminary nomination and final voting to the official executive positions of IPS from 2020 onward. For the last time, the offline voting system was also adopted partially for the members whose email IDs and mobile numbers are not available in IPS members' database. The Society compliments all the members for making online voting a grand success. The IPS Election, results are as follows:



Dr. Rakesh Pandey
President-elect



Dr. T.K. Bag
Zonal President (DZ)



Dr. Amrita Das
Zonal Councillor (DZ)



Dr. Jayanta Tarafdar
Zonal President (EZ)



Dr. Goutam Mondal
Zonal Councillor (EZ)



Dr. K.K. Mishra
Zonal President (MEZ)



Dr. H. Rajashekara
Zonal Councillor (MEZ)



Dr. Kushal Raj
Zonal President (NZ)



Dr. R.K. Chugh
Zonal Councillor (NZ)



Dr. R.K. Tombisana Devi
Zonal President (NEZ)



Dr. Pranab Dutta
Zonal Councillor (NEZ)



Dr. Vinayaka Hegde
Zonal President (SZ)



Dr. Daliyamol
Zonal Councillor (DZ)



Dr. A.P. Suryawanshi
Zonal President (WZ)



Dr. C.V. Ambadkar
Zonal Councillor (WZ)

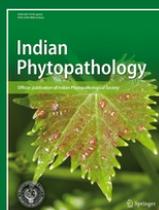


Dr. Ritu Mawar
Zonal President (CZ)



Dr. Dama Ram
Zonal Councillor (CZ)

(CZ: Central Zone; DZ: Delhi Zone; EZ: Eastern Zone; MEZ: Mid Eastern Zone; NZ: Northern Zone; NEZ: North Eastern Zone; SZ: Southern Zone; WZ: Western Zone)



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Plant Protection Medley

Policy issues, major decision, new product registration

Label Expansion Endorsement of Pesticides made during the period: 01.01.2021 to 31.03.2021

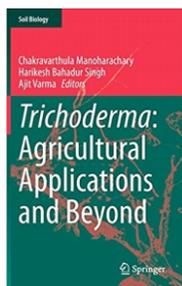
Industries	Products	Crops	Diseases	MRL status (mg/kg or ppm)
M/s Leeds Life Sciences Private Limited	Carbendazim 12% + Mancozeb 63% WP	Potato	Early blight, Late blight & Black scurf	Carbendazim – 0.01 Mancozeb – 0.01
		Tea	Blister Blight, Grey blight, Red rust, Die back, Black rot	Carbendazim – 0.5
		Grape	Powdery Mildew, Downy mildew & anthracnose	Carbendazim – 0.1 Mancozeb – 0.01
		Mango	Powdery Mildew, & anthracnose	Carbendazim – 2.0 Mancozeb – 0.5
		Chilli	Leaf spot, Fruit rot & Powdery Mildew	Carbendazim – 0.5 Mancozeb – 1.0
M/s Indofil Industries Limited	Thifluzamide 24 % SC	Tomato	Early blight	0.05
		Potato	Black scurf	Seed Dresser
M/s Leeds Life Sciences Private Limited	Sulphur 80% WDG	Wheat	Powdery Mildew	MRL exempted being a naturally occurring product
M/s Crop Life Science LTD.	Kasugamycin 5% + Copper Oxychloride 45% WP	Pomegranate	Bacterial blight, leaf spot, fruit rot and anthracnose	Default MRL-0.01
M/s Parijat Industries (India) Pvt. Ltd.	Carbendazim 25 % + Mancozeb 50% WS	Maize	Seed rot & Seedling blight	Seed Dresser
		Black gram	Root rot & Collar rot	
		Bengal gram	Dry root rot and Collar rot	
		Soybean	Root rot & Collar rot	
		Onion crop	Damping off	
M/s Ichiban Crop Science Limited	Tebuconazole 25% WG	Cumin	Alternaria Blight and Powdery Mildew	0.05
		Onion	Purple Blotch	0.01
M/s Ichiban Crop Science Limited	Difenoconazole 25 % EC	Cumin	Blight & Powdery Mildew	0.01
		Onion	Purple blotch	0.05

(Source: <http://ppqs.gov.in/divisions/cib-rc/news-update>)

Books Published

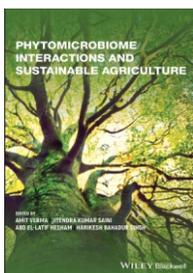
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Editors: C. Manoharachary, H.B. Singh and Ajit Varma
Published by: Springer Nature, Switzerland
Published: 2020; Page Count: 367
eBook ISBN: 978-3-030-54758-5



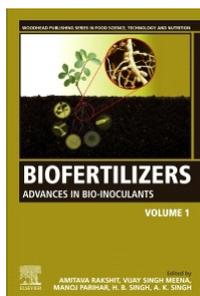
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Editors: Amit Varma, J.K. Saini, Abd El-Latif Hesham and H.B. Singh
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Paperback ISBN: 978-1-119-64462-0
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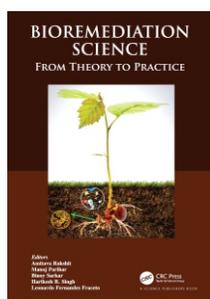
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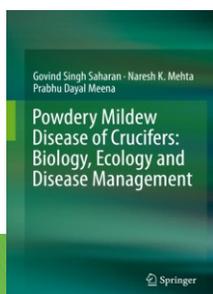
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Published by: CRC Press
Published: 2021; Page Count: 360
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5. Powdery mildew of crucifers: Biology, ecology and disease management

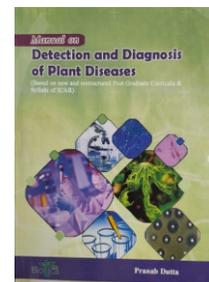
Authors: G.S. Saharan, Naresh K. Mehta and P.D. Meena



Published by: Springer's Nature, The Netherlands
Published: 2019; Page Count: 362
ISBN: 978-981-13-9852-0

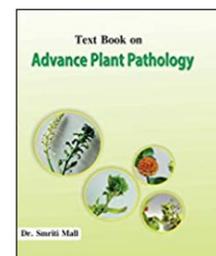
6. Manual on diagnosis and detection of plant diseases

Editor: Dutta, P.
Published by: Biotica Publishers, Tripura
Published: 2020
ISBN: 978-81-947739-6-2



7. Advance Plant Pathology

Author: Smriti Mall
Published by: Swaramjali Publication Pvt Ltd., Ghaziabad
Published: 2020
ISBN: 978-93-90110-37-7



IPS Archives

The Hindustan

FROM THE ARCHIVES

FIFTY YEARS AGO JANUARY 28, 1971

Problem of pests

World agricultural scientists were to-day [January 27] called upon to unleash a "chemical and biological warfare" to control the onslaught of pests and plant diseases that has come in the wake of the high-yielding varieties. The Union Food and Agriculture Minister, Mr. Fakhruddin Ali Ahmed, who gave this call at the inauguration of the second international symposium on plant pathology here [New Delhi], said pathogens from the time of planting seed through harvest to the consumption stage took away between 10 to 20 per cent of the produce and had created a "dent" in the world's granaries. He asked plant pathologists to reorient their research programmes and eliminate the ravages of diseases that affected plants. Mr. Ahmed said last years' devastating epidemic of leaf blight in the United States highlighted the importance of co-operative endeavour of plant pathologists and plant breeders in crop improvement. The eight-day symposium, organised to celebrate the silver jubilee of the Indian Phytopathological Society, is being attended by 500 Indian scientists and more than 60 top agricultural scientists from 19 countries. Mr. A. H. Boerma, Director-General of the Food and Agriculture Organisation, said the tremendous promise of the high-yielding varieties carried with it a host of problems, creating greater hazards to plants, particularly in India.



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