



National webinar

on

Young Entomologist Award Lectures

Entomological Society of India (ESI), New Delhi-110012

Date: 09 January 2021

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Young Entomologist Awardees 2020



BABASAHEB B. FAND
ICAR-CICR, Nagpur



D. M. FIRAKE
ICAR-DFR, Pune



JAIPAL S. CHOUDHARY
ICAR-RCER, Ranchi



JOHNSON STANLEY
ICAR- IIMR, Hyderabad



NARESH M. MESHAM
ICAR-IARI, New Delhi

Free registration:

<https://docs.google.com/forms/d/e/1FAIpQLSdJM7BI66aXjB3Ym1hY1DNSFPayH0nW2s55V6MSQL6sKE4llg/viewform?vc=0&c=0&w=1&flr=0&qxids=7628>

The webinar will be on Zoom and registered candidates will receive zoom link and password before the webinar



YouTube live at

<https://www.youtube.com/channel/UCTwe7dhWltrp5U7VW0y7yQA>

Invitation

National Webinar on Young Entomologist Award Lectures

Entomological Society of India (ESI), New Delhi-110012

Date: 09th January 2021

9.30 h	Invocation	
9.35 h	Welcome address	Dr. V.V. Ramamurthy, Chief Editor
9.40 h	About the award	Dr. T.P. Rajendran, Former ADG (PP), ICAR Dr. P. K. Chhuneja, Head, PAU Dr. C.P. Srivastava, Professor, BHU
	Lectures	
10.00 h		Dr. Babasaheb Fand, ICAR-CICR, Nagpur
10.30 h		Dr. D.M. Firake, ICAR-DFR, Pune
11.00 h		Dr. Jaipal Choudhary, ICAR-RCER, Ranchi
11.30 h		Dr. Johnson Stanley, ICAR-IIMR, Hyderabad
12.00 h		Dr. Naresh M. Meshram, ICAR-IARI, New Delhi
12.30 h	Concluding remarks	Dr. S. N. Puri, President
12.45 h	Vote of thanks	Dr. Sachin S. Suroshe, ICAR-IARI, New Delhi

ABOUT YOUNG ENTOMOLOGIST AWARDEES 2020

Dr. Babasaheb B. Fand

BABASAHEB B. FAND has been instrumental in the development of eco-friendly and bio-intensive management strategies for insect pests of economically important crop like cotton, soybean, and grapes. He focused on the development and validation of temperature-based phenology modelling and habitat suitability mapping for economically important agricultural insect pests under future climate change. Worked on Volatile organic compounds (VOCs) importance to natural enemy calling for promoting biological control of insect pests in vineyards. Presently working on spatial modelling of cotton-insect pest interactions in the context of climate change for developing agro-ecoregion specific management strategies and conserving and managing native crop and insect biodiversity for climate resilience and functioning of agro-ecosystems. His Salient research achievements like development of temperature-based phenology models for analyzing climate change impacts economically important insect pests like cotton mealybug, pink bollworm, aphid, soybean leaf-eating caterpillar. Development of a simple and low-cost laboratory rearing technique for pink bollworm using detached green bolls of cotton. Degree-day based phenology model for predicting the developmental events of cotton pink bollworm under field conditions. Exploration of the chemical ecology of mealybugs and natural enemies for enhancing natural biological control of mealybugs in grape vineyards. Recorded new parasitoid species *Sphegigaster punensis* from soybean stem fly. Dr. Babasaheb has authored 21 peer-reviewed publications in international journals of high impact factor, 12 in national (Indian) peer-reviewed journals, 16 in local journals and magazines, two books, and two book chapters.

Dr. D.M. Firake

D. M. FIRAKE has served in the northeastern hilly region of India for >11 years and significantly contributed in the field of eco-friendly pest management practices, eco-toxicology, bio-security, and insect genomics. Based on bio-ecological principles, he has developed several novel concepts and low-cost eco-friendly practices for pest management including 'Eco-friendly and low-cost technique for protection of seeds from birds'; Rapid technique for sex determination in parasitoid wasps; Fruit fly trapping kit (in northeast India revealed 75% reduction in fruit fly damage); Hypocard (Novel bio-agent product), Microbial formulations, BIPM packages and New biopesticides based on medicinal plants etc. Recorded 36 new pests/new distribution record/ new host record/ new bioagents/ new entomopathogens for the first time in India including invasive and pests of quarantine importance. Immensely contributed to the development and release of a stress-tolerant variety of Rice (RCPL-1-412), Soybean (Umiam Soybean-1), and four Guava varieties (Megha Supreme, Megha Magenta, Megha Seedless, and Megha Wonder) with distinct desirable traits etc. Developed Hypocard: a Novel ready to use a product containing cocoons of parasitoid *H. ebenninus*. Demonstrated in detail the reproductive and foraging behavior of butterfly pests of cole crops and identified the weak stages for their management. Developed, standardized, and popularized the site-specific bio-intensive IPM packages for 11 crops. Contributed to the decoding of India's first mitochondrial genome of insect viz., *Henosepilachna pusillanima*. Also contributed to the decoding of the complete mitochondrial genome of two destructive pest species, *P. versteegi* and *Aristobia reticulator*. Developed 303 insect DNA barcodes and 03 PCR-based diagnostic tools for rapid and reliable detection of pest species.

ABOUT YOUNG ENTOMOLOGIST AWARDEES 2020

Dr. Jaipal Singh Choudhary

JAIPAL SINGH CHOUDHARY in his ongoing scientific career mainly focused on the areas like simulation and statistical modelling, genomic studies, and IPM. Developed temperature-dependent process-based phenology simulation and statistical models of economically important insect pests of mango and other horticultural crops under different climate scenarios and periods. Determined the pattern of genetic diversity, population genetics, demographic history, and evolutionary origins of the Indian population of economically important pests viz., *Bactrocera dorsalis*, *Bactrocera zonata*, and *Amritodus atkinsoni* of mango, *Zeugodacus caudatus* of vegetable crops, *Pectinophora gossypiella* of cotton etc. for planning of better management tactics. The developed novel concept of pest management using gut isolated bacteria attractancy potential of *Bactrocera zonata* in open field condition and also decoded developmental stage-associated microbiota profile of same fruit fly species first time in the world. Credited the complete mitochondrial sequencing and the annotation of peach fruit fly, *Bactrocera zonata* and mango hopper, *Idioscopus nitidulus* from India, the first time in the world. Developed over 500 DNA barcodes and unique mitochondrial haplotype sequences of different insect species and submitted them to international and national level gene bank repositories. Deciphered the biochemical (higher phenol and flavonoid content) and morphological basis (peel thickness) of resistance in mango genotypes viz., Amrapali, Gulab Khas, and Dashehari against mango fruit fly, *Bactrocera dorsalis*. Identified single gene dominant resistance lines of tomato (HAT-310 and HAT-311) against root-knot nematode, *Meloidogyne incognita* infestation. Conceptualized and developed two user-friendly mobile apps 'Aam ki Surksha' and 'Climate Smart Mango Cultivation' for mango pests forewarning and management practices suggestions. Developed and validated several IPM technologies for horticultural crops. He published about 24 peer-reviewed publications in international journals of high impact factor and 23 research papers in nationals and local journals, 1 book, 6 book chapters, and several technical bulletins. He was awarded many awards by other professional societies..

Dr. Johnson Stanley

JOHNSON STANLEY has made a significant contribution in IPM of white grubs using light trap (VL White grub Beetle Trap; Patented: IN290170), the native strain of entomopathogen (*Bacillus cereus* WGPSB2), and in pheromones. The pheromones of Scarab beetle, *Holotrichia seticollis* was isolated using a specially designed apparatus (patent filed: 201611021530) and identified as 1,2- 1,3 and 1,4-diethyl benzene, which was used in traps and a reduction of 83% of the beetle obtained in 3 years. The light trap and the entomopathogens are commercialized and in extensive use (4700 light traps are sold so far). An Android App on white grub biology and management was also developed to help farmers. Cost-effective high yielding millet-based growth medium for the early, profuse sporulation of *Bacillus thuringiensis* is patented (IN336230). Other bioagents like VL Bt6 and two chitinolytic bacteria isolated from the region were found promising against many insect pests. Further significant contributions relate to pollination efficiency of Indian bee, *Apis cerana* in radish, toria and cabbage, estimation of pollinator requirement for optimum seed set. Bioecology and management of small carpenter bee, mining bee and bumble bee were studied in Uttarakhand. Effect of pesticides on bees *Apis mellifera* and *A. cerana* was studied by three-tier assessment indicating acetamiprid as safe. Methods of estimation of pollination efficiency and pollinator requirement in crops like mustard, radish and cabbage were developed, assessed and published. Risk assessment of insecticide sprays on rice ecosystem in the control of BPH and its mirid predator and parasitoid (*Trichogramma chilonis*). He was involved in the release of two high yielding disease resistant rice varieties..

ABOUT YOUNG ENTOMOLOGIST AWARDEES 2020

Dr. Naresh M. Meshram

NARESH M. MESHRAM has contributed significantly to the field of Indian leafhopper taxonomy, by integrating classical taxonomy with different molecular markers gave new dimensions to the leafhoppers taxonomy in India. Published 30 research papers in best rated national and international journals. In total 51 new species, 1 new genus, 1 monograph, 20 keys, 12 checklists, 10 New records to India, 15 host records, and 161 NCBI accessions or barcodes are recorded to his name. Also by using different genes like, COI, Histone, 28S (D2-9) region, Wingless, NADH dehydrogenase, and phylogenetic analysis tools like, MrBayes, PAUP, IQ tree, MEGA, his lab opened a new arena in resolving the phylogenetic relations of the Indian Cicadellidae with the help of integrated taxonomy. With this integrated approach, resolved the systematic position of the new genus *Chandra* in the subfamily Deltocephalinae. Tribal assignment of new leafhopper genus *Vittaliana reticulata* gen. nov., sp. nov., into tribe Opsiini. Tribal reassessment of genus *Pseudo subhimalus* by using two different data sets, including 91 taxa and 3853 aligned nucleotide positions from the histone H3, 28S rDNA (D2 & D9-10 region) by using PAUP. Relationships between genera of the Cicadulini were strongly supported and leads placement to tribe Cicadulini from Athysanini. A monograph on Tribe Coeliidini (Hemiptera: cicadellidae) published with 23 new species, 11 keys, 11 host records, 3 new records, 1 new combination. These are the major breakthrough contributions from him towards the insect taxonomy.

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