

BIODATA



1. **Name of the Scientist** : Dr. **Subhash Chander**
2. **Bio-data**
- a) **Designation** : Director, ICAR-NCIPM, New Delhi
 - b) **Email** : schanderthakur@gmail.com
 - c) **Date of birth** : 04/12/1962
 - d) **Joining date in ICAR** : 11/06/1991
 - e) **Discipline and Specialization** : Entomology, Insect Ecology, IPM
 - f) **Training/advance exposure in the area of work** : NATP Training on Crop-pest modeling at Great Plains Systems Research (GPSR) Unit, USDA, Fort Collins, USA

3. **Present address:** Director, ICAR-National Centre for Integrated Pest Management (NCIPM) New Delhi 110012

4. **Permanent address:** Karohta, Distt. Hamirpur (H.P.) Pin-176044

5. Education qualifications & Professional Career:

Degree	University/Institution	Year	Distinction, if any
Ph.D. (Entomology)	IARI, New Delhi	1991	3.92/4.0
M.Sc. (Entomology)	IARI, New Delhi	1987	4.0/4.0 Gold Medal
B.Sc. (Agri.)	CSKHPKV Palampur (HP)	1985	3.95/4.00 University Gold Medal ASPEE Medal Certificate of Honour

6. Awards and Honours

Name of Award	Awarding Institution	Year for which awarded
<u>National Award for Application of Agricultural Technologies-</u> Nanaji Deshmukh ICAR Award for Outstanding Interdisciplinary Team Research in Agricultural & Allied Sciences 2021	ICAR, New Delhi	2021
Dr. C. Subramaniam Award for Outstanding Teachers for Crop & Horticultural Sciences	ICAR, New Delhi	2014
Sukumar Basu Memorial Award	IARI, New Delhi	Biennium 2009-2010
Best Teacher Award- 2007	IARI, New Delhi	2007
4th Dr. Krishna Mohan Singh Memorial Award by the <i>for outstanding Research contributions</i>	IARI, New Delhi	Biennium 2013-15

SPPS Meritorious Scientist Award	Society of Plant Protection Sciences, New Delhi	1997
Delivered 1st Dr. Niranjan Panda Memorial Lecture	OUAT, Bhubaneswar	2017
Gold Medal (B.Sc. Ag.)	CSKHPKV Palampur	1985
Gold Medal (M.Sc.)	IARI, New Delhi	1987
Fellow	Entomological Society of India, New Delhi	2008
SPPS Fellow	Society of Plant Protection Sciences, New Delhi	2005
Other Attainments		
Chief Editor	‘Entomological Society of India’ New Delhi	2022-2024
Joint Secretary	‘Entomological Society of India’ New Delhi	2004-2008 & 2014-2018
Member, Research Advisory Committee (RAC) member	ICAR-IIPR, Kanpur	2016-19
Member, Research Advisory Committee (RAC) member	ICAR- Directorate on Cashew Research, Puttur	2017-20
Member, Research Advisory Committee (RAC)	ICAR-Indian Institute of Natural Resins & Gums (IINRG), Ranchi	2019-22
Member, Scientific Advisory Committee (SAC)	National Horticultural Research and Development Foundation (NHRDF), New Delhi	2017-20; 2021-24
Member, Institute Management Committee (IMC)	ICAR-IIHR, Bengaluru	2017-2020
Member, Institute Management Committee (IMC)	ICAR-Central Institute of Temperate Horticulture (CITH), Srinagar (J&K)	2019-2022
Member, Institute Management Committee (IMC)	ICAR-Central Institute of Cotton Research (CICR), Nagpur	2019-2022
Member, Doctoral Committee of Life Sciences	IGNOU, New Delhi	2010, 2011, 2012, 2013
External faculty, Faculty of Agriculture,	BHU , Varanasi	2016-2019
Member, Academic Committee,	National Institute of Plant Health Management (NIPHM), Hyderabad	2016-19
Member, National Editorial Board of Indian Journal of Horticulture	Horticultural Society of India (HSI), New Delhi,	2015, 2016, 2019
Member of Global Technology Watch Group (GTWG)-sustainable agriculture,	TIFAC, DST, New Delhi	2017-18

Member , Editorial Board, SAARC Journal of Agriculture	SAARC Agriculture Centre, Dhaka, Bangladesh	2017-18, 2018-19
--	--	------------------

Professional Achievements

Research

- **Development of crop-pest models & decision support tools**
Developed InfoCrop simulation model based on pest damage mechanisms that facilitated simulation of location-specific EILs for rice insect pests. Thermal constant based insect models, were linked to InfoCrop, which proved useful in assessing climate change impact both on pest dynamics and crop-pest interactions under diverse agro-environments.
- **Pest Forewarning & Monitoring**
Developed regression and mechanistic models for forewarning of rice pests. Based on 15 years (1999-2013) weather and pest data analysis it has been revealed that more frequent rains (> 30 rainy days) during June-September may play significant role in BPH outbreak in rice. The finding has been validated with 80% accuracy and will prove useful in forewarning outbreak of this obnoxious pest. Predator-conditioned sequential sampling plan was developed that helped to avoid unwarranted pesticide application against rice BPH.
- **Development of Spectral signatures through remote sensing**
The development of spectral signatures of rice brown planthopper (BPH) and leaf folder through hyper-spectral remote sensing could facilitate their quick monitoring in wide areas.
- **Pest risk analysis through pest-weather models and GIS**
Predictive pest zoning through pest population models and geographic information system (GIS) carried out, which assisted in identifying hot spots of rice BPH and stem borer that could promote timely action for their effective management.
- **Climate changes impact assessment**
Effect of elevated CO₂ on rice BPH and wheat aphid has been studied through Open Top Chambers (OTCs) and it has been found that these pests may become more important under climate change.

Technologies developed

- **Crop varieties:** Involved in development and release of very important rice variety, **Pusa Basmati 1509** and two wheat varieties, **HD3086** and **HD3118** that have been widely adopted.
- **Simulation model based Decision Support System (DSS):** Developed InfoCrop, modelling based decision Support System (DSS), which is being widely used by Scientists in India for simulating crop yields under varied environments.
- **Degree- days based pest population models:** Developed thermal constant based population simulation models. InfoCrop model has been coupled with mechanistic pest population models to simulate crop losses as well as population dynamics for various applications.

Teaching & Research guidance

- Professor of Entomology; Coordinating all academic activities of the Discipline for last 6 years
- 29 years of Teaching experience; Awarded **C. Subramaniam** Award for Outstanding Teachers for Crop & Horticultural Sciences -2014
- Guided **11 Ph.D.** students and **5 M.Sc.** students as Major Advisor; 5 Students pursuing PhD.
- One student won IARI Merit Medal and two students received Gur Prasad Merit Medal
- Coordinated 4 training programmes
- Students employed in ICAR, DRDO and SAUs

Extension

- Attached to the **Joint Director (Ext.)** in 'IARI Outreach programme'.
- Nodal officer for CSKHPKV, Palampur under National Extension Programme (NEP)
- Member of Institute Production Unit for the Institute outreach programme (2009-2014)
- Disseminated IPM Technology in NCR and IARI Lighthouse (Model) villages very effectively
- Field Visits/Field Days: 125

Administrative Experience

Director, ICAR-National Research Centre for Integrated Pest Management (NCIPM), New Delhi since 04 December 2020.

Research projects

Research Project	Completed	In Progress
Externally funded projects	12	3
In-house projects	14	4

Publications

Publication	Number
Research Papers	150 (including 30 in Foreign Journals)
Books/ Training manuals	5/4
Book Chapters	44
Invited Lectures	25
Training lectures (Scientific/Extension)	90
Popular/Technical articles	60
Symposia Paper	72
Radio/TV talk:	50
NAAS Rating of Research Papers	>10 – 05; 8-10 - 04; 6-8 - 30

Some of Important Research Publications

- Selvaraj K., **Chander S.** 2015. Simulation of climatic change impact on crop-pest interactions: A case study of rice pink borer *Climatic Change* 129 (1-2), DOI 10.1007/s10584-015-1385-3. (NAAS = **10.17**)
- Sujithra M.; **Chander S.** 2013. Simulation of rice brown planthopper population and crop-pest interactions to assess climate change impact. *Climatic Change* 121: 331-347. (NAAS = **10.17**)
- **Chander, S.**, Ahuja, L.R., Peairs, F.B., Aggarwal, P.K. and Kalra, N. 2006. Modeling the effect of Russian wheat aphid, *Diuraphis noxia* (Mordvilko) and weeds in winter wheat as guide to management. *Agricultural Systems* 88(2-3):494-513. (NAAS= **10.15**)
- Aggarwal, P.K., Kalra, N., **Chander, S.** and Pathak, H. 2006. Infocrop: A dynamic simulation model for the assessment of crop yields, losses due to pests, and environmental impact of agro-ecosystems in tropical environments. 1. Model description. *Agricultural Systems* 89(1):1-25. (NAAS= **10.15**)
- Aggarwal, P.K., Banerjee, B., Daryaei, M.G., Bhatia, A., Bala, A., Rani, S., **Chander, S.**, Pathak, H. and Kalra, N. 2006. Infocrop: A dynamic simulation model for the assessment of crop yields, losses due to pests, and environment impact of agro-ecosystem in tropical environments. II. Model performance. *Agricultural Systems* 89(1):47-67. (NAAS= **10.15**)
- Boomiraj K., Chakrabarti B., Aggarwal PK, Choudhary R., **Chander S.** 2010. Assessing the vulnerability of Indian mustard to climate change. *Agric., Ecosys. Environ.* 138: 265-273. (NAAS= **9.95**)
- Reji G., **Chander S.**, Aggarwal P.K. 2008. Simulating rice stem borer, *Scirpophaga incertulas* Wlk., Damage for developing decision support tools. *Crop Protection* 27: 1194-1199. (NAAS= **8.17**)
- Yadav, D.S. and Chander, S. 2010. Simulation of rice planthopper damage for developing decision support tools. *Crop Protection* 29: 267-276. (NAAS= **8.17**)
- Selvaraj, K., **Chander, S.** and Sujithra, M. 2012. Determination of multi-species economic injury levels for rice insect pests. *Crop Protection* 32: 150-160. (NAAS= **8.17**)
- Reji, G. and **Chander, S.** 2008. A degree-day simulation model for the population dynamics of the rice bug, *Leptocorisa acuta*. *Journal of Applied Entomology* 132 (8): 646-653. (NAAS= **7.65**)
- Gopal, M., Mukherjee, I. and **Chander, S.** 2002. Behaviour of β -Cyfluthrin and Imidacloprid in mustard crop: Alternative insecticide for aphid control. *Bull. Environ. Contam. Toxicol.* 68: 406-411. (NAAS= **7.26**).
- Ram Prasad, B., Singh, V.S., **Chander, S.** and Kumar, J. 2007. Residue evaluation of controlled-release formulations of imidacloprid against rice leaf folder. *Bulletin Environ. Contam. Toxicol.* 78 (3-4): 235-238. (NAAS= **7.26**)
- **Chander S.** and Phadke KG. 1994. Economic injury levels of rapeseed aphids determined on natural infestation and after different insecticide treatments. *International Journal of Pest Management* 40(1): 107-110. (NAAS = **6.90**).
- Prasannakumar, N.R., **Chander, S.** and Sahoo, R.N. 2013. Characterization of brown planthopper damage on rice crop through hyper spectral remote sensing under field condition. *Phytoparasitica* 42: 387-395, DOI 10.1007/s12600-013-0375-0. (NAAS: 7.02)
- **Chander S.** and Arya K. 2015. Simulation of leaf folder, *Cnaphalocrocis medinalis* (Guenee),

damage on rice for developing decision support tools. *International Journal of Pest Management* 62(1):20-29.

- Prasannakumar, N.R., **Chander, S.**, Sahoo, R.N. and Gupta, V.K. 2013. Assessment of brown planthopper (*Nilaparvata lugens*) damage in rice using hyper-spectral remote sensing. *International Journal of Pest Management* 59 (3): 180-188. (NAAS = 6.90).
- Kumar N., Kumar R., Shakil N.A., Sarkar D.J., **Chander S.** 2018. Evaluation of fipronil nanoformulations for effective management of brown plant hopper (*Nilaparvata lugens*) in rice. *International Journal of Pest Management*; DOI 10.1080/09670874.2018.1468046. (NAAS = 6.90).
- **Chander, S.**, Kalra, N. and Aggarwal, P.K. 2007. Development and application of crop growth simulation modelling in pest management. *Outlook on Agriculture* 36(1):63-70. (NAAS = 7.04).
- Prasannakumar, N.R., **Chander, S.** and Pal, M. 2012. Assessment of impact of climate change with reference to elevated CO₂ on rice brown planthopper, *Nilaparvata lugens* (Stal.) and crop yield. *Current Science* 103 (10): 1201-1205. (NAAS = 6.90).
- Sujithra, M., **Chander, S.** and Selvaraj, K. 2011. Simulation of rice brown planthopper (*Nilaparvata lugens* (Stal)) damage for determining economic injury levels. *Journal of Scientific & Industrial Research* 70(5): 338-345. (NAAS = 6.74).
- Yadav, D.S., **Chander, S.** and Selvaraj, K. 2010. Agro-ecological zoning of brown planthopper (*Nilaparvata lugens*) incidence on rice. *Journal of Scientific & Industrial Research* 69: 818-822. (NAAS = 6.74).
- Satish, D., **Chander, S.** and Reji, G. 2007. Simulation of economic injury levels for leaf folder on rice. *Journal of Scientific & Industrial Research* 66: 905-911. (NAAS = 6.74).
- **Chander, S.** and Singh, V. S. 2001. Distribution, economic injury level and sequential sampling of leaf folder on rice. *Indian Journal of Agricultural Sciences* 71 (12): 768-71. (NAAS = 6.90).
- **Chander, S.** 1998. Infestation of root and foliage/earhead aphids on wheat in relation to predators. *Indian J. agricultural Sciences* 68(11): 754 -755. (NAAS = 6.25).
- **Chander, S.** 1999. Determination of sample size for estimation of aphid population on wheat. *Indian J. agricultural Sciences* 69(8): 607-608. (NAAS = 6.25).
- **Chander, S.** and Singh, V. S. 2001. Distribution, economic injury level and sequential sampling of leaf folder on rice (*Oryza sativa*). *Indian J. agricultural Sciences* 71 (12): 768-71. (NAAS = 6.25).
- **Chander, S.** and Singh, V. S. 2003. White-backed planthopper and leaf folder infestation in rice in relation to predators. *Indian J. Agricultural Sciences* 73(4): 243-245. (NAAS = 6.25).
- **Chander, S.**, Aggarwal, P.K. and Swarooparani, D.N.S. 2004. Agro-ecological zonation of leaf folder infestation in Haryana. *Indian J. agricultural Sciences* 74(8):455-457. (NAAS = 6.25).
- **Chander, S.**, Daryaei, M.G. and Aggarwal, P.K. 2008. Assessment of crop losses due to insect pests and weeds in rice (*Oryza sativa*). *Indian J. Agricultural Sciences* 78 (3): 333-336. (NAAS = 6.25).
- Srivastava, C., **Chander, S.**, Sinha, S.R. and Palta, R.K. 2009. Toxicity of various insecticides against Delhi and Palla populations of brown plant hopper. *Indian Journal of Agricultural Sciences* 79(12): 1003-1006. (NAAS = 6.25).
- Kumar, J., Shakil, N.A., **Chander, S.**, Walia, S., Shukla, L. and Parmar, B.S. 2010. Field appraisal of controlled release formulations of cartap hydrochloride against rice leaf folder

- Indian J. of Agricultural Sciences 80(5): 405-408. (NAAS = 6.25).
- Prasannakumar N.R. and **Chander S.** 2014. Weather-based brown planthopper prediction model at Mandya, Karnataka. *J. Agrometeorology* 16 (1): 126-129. (NAAS = 6.64)
 - Manzoor U., Haseeb M., **Chander S.** 2016. Determination of thermal constant and development threshold of fruit and shoot borer, *Earias vitella* (F.). *Nat. Acad. Sci. Lett.* DOI 10.1007/s40009-016-0426-4. (NAAS = 6.29).
 - Gurupirasanna PG., **Chander S.**, Madan Pal, Soumia PS. 2018. Impact of elevated CO₂ on *Oryza sativa* phenology and brown planthopper population. *Current Science* 114:1767-1777. (NAAS: 6.84)
 - Dharavath V, **Chander S.**, Sagar D. 2018. Impact of elevated carbon dioxide on the Protective enzymes in Brown Planthopper (BPH) and infested rice plants". *Indian Journal of Agricultural Sciences* 88 (9):1366-1370 (NAAS: 6.25)
 - Parshant Kaushik, Dhruva J. Sarkar, **Chander S.**, Virendra S. Rana & Najam A. Shakil 2019. Insecticidal activity of phenolic acid amides against brown planthopper (BPH), *Nilaparvata lugens* (Stål) and their QSAR analysis. *Journal of Environmental Science and Health, Part B, Pesticides, Food Contaminants, and Agricultural Wastes* 1532-4109 (Online) Journal homepage: <https://www.tandfonline.com/loi/lesb20> (NAAS = 7.70).
 - Gundappa B, **Chander S.**, Kamala Jayanthi PD, Singh HS & D. Reddy Srinivasa D. 2021. Assessing the risk of mango quarantine pest *Deanolis sublimbalis* Snellen under different climate change scenarios. *Journal of Plant Diseases and Protection* (online). <https://doi.org/10.1007/s41348-021-00441-2> (NAAS =7.53)
 - Geethu S., Sachin S. Suroshe, **Chander S.**, Venkanna Y. 2021. Interactions of six spotted ladybird beetle, *Cheilomenes sexmaculata* (F.) with its host *Phenacoccus solenopsis* Tinsley and Intraguild members. *International Journal of Tropical Insect Science* <https://doi.org/10.1007/s42690-021-00614-4>. (NAAS =6.54)
 - Mahanta DK, Jangra S, Priti, Ghosh A, Sharma PK, Iquebal MS, Jaiswal S, Baranwal VK, Kalia VK, **Chander S.** 2022. Groundnut bud necrosis virus modulates the expression of innate immune, endocytosis, and cuticle development-associated genes to circulate and propagate in its vector, *Thrips palmi*. *frontiers in Microbiology* doi 10.3389/fmicb.2022.773238 (NAAS = 11.64)
 - Sagar D, Isaiyamudhini T, Keerthi MC , Sujatha GS, **Chander S.** 2022. Influence of larval nutrition on biological attributes and reproductive performance in *Spodoptera frugiperda* (Lepidoptera: Noctuidae) under laboratory condition. *Animal Biology* DOI 10.1163/15707563-bja10077 (NAAS = 7.48)
 - Raghavendra K.V., Meshram N.M., Ramesh K.B., Ramaiah M., Felix K.T., Vaibhav V., Balodi R., Sardana H.R. and **Chander S.** 2022. Mirid bug *Nesidiocoris tenuis* (Reuter), a potential challenge to bottle gourd *Lagenaria siceraria* (Molina) Standley production: a study from India. *Phytoparasitica* <https://doi.org/10.1007/s12600-022-01020-3>. (NAAS = 7.44).

Popular/Technical Articles (Last 5 Years)

- **Chander S. 2015.** Pest modelling and forecasting under climate change, pp. 81-85. **In:** Sounvenir- National Seminar on weather and climate risks in agriculture under changing climate: management and mitigation. March 13-14, 2015, JNKVV, College of Agriculture, Tikamgarh (M.P.), 120 pp.
- Sharma R.K., Sinha S.R., **Chander S.**, Sharma K., Srivastava C. and Dey, D. 2015. Pramukh faslon aur bhandaran main samagra vikas ke liyekeet niyantran (In Hindi). **In:** Pusa Krishi Mela Sovenir, ICAR-IARI, New Delhi, pp. 80-88.
- **Chander S.**, Vishwapal, Husain M. 2015. Badlta Mausam mein Samekit Keet Prabandhan. **In:** Badlta Mausam: Upyukt Vaigyanik Kheti (Kisan Mela 2015), IARI Regional Station, Pusa Bihar, pp. 162-165.
- **Chander S.** 2015. IPM in vegetables. Training on Seed production of vegetables to Agri. Officers, December 14, 2015, Division of vegetable crops, IARI, New Delhi.
- **Chander S.** 2015. 'IPM in rice and wheat crops' to Farmers of Bihar, 24/11/15, SPU, IARI, New Delhi.
- **Chander S.** 2016. IPM in Field & Storage. **In:** Training of Personnel of Voluntray Organisations (VOs), CATAT, 25/04/2016.
- **Chander S.** 2016. Dhaan mein samekit keet prabandhan. *Dhhan kee Vaigyanik kheti.* Article presented during 'Dhaan Krishi Pathshala' organized by Akashvani, New Delhi during kharif 2015, pp. 60-64.
- **Chander S.** 2016. IPM in Field and Storage. **In:** Training of Personnel of Voluntray Organisations (VOs), CATAT, 25/04/2016.
- **Chander S.** 2016. Insect pest management, pp.8-13. **In:** Training Manual " Identification of insect pests, damaging symptoms and management. Division of Entomology, IARI, New Delhi.
- **Chander S.** 2016. Identification of insect pests of rice and wheat crops and their management, pp. 14-17. **In:** Training Manual "Identification of insect pests, damaging symptoms and management. Division of Entomology, IARI, New Delhi.
- Chander S. 2017. Crop pest modelling and forecasting, pp. 191-196. Souvenir: Nat. Conf. Food & Nutritional Security through vegetable crops in relation to climate change, 9-11 Dec. 2017, IIVR, Varanasi, 217 pp.
- Chander S. 2017. Insect pest management in crops, pp. 6-10. **In** manual 'Training on Identification of Insect pests/vectors/their damaging symptoms and management (Nov. 21-DEC. 4, 2017, sponsored by ICAR, Division of Entomology, IARI, New Delhi.238pp.
- Chander S. 2017. Identification of insect pests of rice and wheat crops and their management, , pp. 11-15. **In** manual 'Training on Identification of Insect pests/vectors/their damaging symptoms and management (Nov. 21-DEC. 4, 2017, sponsored by ICAR, Division of Entomology, IARI, New Delhi.238pp.
- Chander S. 2018. Insect management in crops grown under polyhouse" **In** training 'Skill development training programme for "Greenhouse Operator", from Feb. 12- March 13, 2018, Precision Agri. Dev. Centre, WTC, 26 Feb. 2018.
- Chander S. 2018. Audyonik faslon mein samekit keet prabandhan. **In** training programme on 'uposhan falon (aam aur nimbu) kee utpadan praudyogiki, 24-28 April, 2018, CATAT, IARI, New Delhi.
- Chander S. 2019. Faslon mein ekeekrit nashijeev Prabandhan (Hindi), pp.116-123. **In** *Training manual on "Faslon ki unnat utpadan takneeki*, 12-18 Feb 2019, ATMA (Rajasthan) at ATIC, IARI, 16 Feb. 2019.

- Chander S. 2019. Mukhya falon va sabjiyon mein samekit keet prabandhan, pp.41-49. In: *Training manual on Fal evm sabji faslon kee unnat takneeki*, March 22-26, 2019, Hort. Deptt (Rajasthan) at ATIC, ICAR-IARI, New Delhi.
- Chander S. 2019. Imortance of honeybees and management of new insect pests in seed production field, pp.150-163. In *Training manual on Seed Production, processing, testing and storage in filed and vegetable crops (rabi)*, 228pp, March 12-16, 2019, Divison of Seed Science & Technology, IARI, New Delhi.
- Chander S. 2019. Simulation of climate change impact on crop-pest interactions, pp.26-30. In *Training Manual on 'Plant Disease Monitoring for Timely Management Options*, Dec. 4-24, 2019, CAFT, Divison of Plant Pathology, IARI, New Delhi, 115 pp.
- Chander S. 2020. Training lecture 'IPM in pulse and vegetable crops' 21 Feb. 2020, In World Bank-ICAR (NAHEP) funded training on "Agronomic interventions fro enhancing nutrient use efficiency and nutritional quality in pulseadn vegetable crops, for PhD & MSc students, 10-23 Feb. 2020, Divison of Agronomy, IARI, New Delhi.
- Chander S. 2020. Ardh shushk kshetron mein samekit keet prabandhan, pp.70-77. In: *Training Manual "Unnat krishi praudyogikiyan"* under ATMA to farmers from Dausa (Rajasthan), 21-25 Feb. 2020, CATAT, IARI, New Delhi.
- Chander S. and Dey D. 2020. Pest management technology for sustainable production and safe food, pp.131-134. In: *Souvenir- Pusa Krishi Vigyan Mela-2020 'IARI Technologies towards achieving sustainable development goals'* ICAR-IARI, New Delhi, 150pp.
- Chander S. 2020. Insect pest management in rice and wheat crops, pp.27-32. In: *Agripreneur Development Programme on 'Integrated approach for diagnostics and management of insect pests, vectors, pollinators and natural enemies*. ZTM & BPD and Division of Entomology, IARI, New Delhi, 20-24 January, 2020, 132pp.
- Chander S. and Dey D. 2020. Tikau utpadan evm surakshit khadya padarth ke liye keet prabandhan takneeki, pp.131-134. In: *Samarika- - Pusa Krishi Vigyan Mela-2020 'Satat vikas lakshyon ki prapti hetu Pusa sansthan ke praudyogikiyan''* ICAR-IARI, New Delhi, 150pp.
- Singh JP and Chander S. 2019. *Madhumakkhi Plan evm Prabandhan* (in Hindi). *Prasar Doot* 24 (2), June 2019: 14-18.
- Yele Y, Chander S, Poddar N, Bhagyasree SN, Suroshe S. 2020. Effect of elevated temperature & CO₂ on natural enemies of insect pests. *Indian Entomologist* (online) 1(Jan. 2020): 51-53.
- Suroshe S, Bhagyasree SN, Kumari S, Chander S, Shashank PR, Singh PK. 2020. *Bagwani faslon ke adhik utpadan mein keeton ka mahtwa* (Hindi) *Phal Phool* (July-Aug. 2020):54-55.
- Chander. S. 2021. Samekit Nashijeev Prabandhan 2021, pp1-7. In: (Sehgal M, Balodi R, Raghavendra KV, Chander S. eds.)2021. *Gyan Pustika* (training programme)- Samekit nashijeev prabandhan ranneetiyan aur jaiv niyantran ghatkon kee bade paimane par utpadan takneek, ICAR-NCIPM, New Delhi, 44pp.
- Chakraborty A, Sehgal M, Chander S, Sachan MS, Subhra Shil, Dipankar Dey and Meenakshi Malik 2021. Eco-Friendly Management of Fruit Fly in Bittergourd in Tripura – A Success Story. *Biotica Research Today* 3(3): 195-196.