### Research



## Dr S.D.Sharma Principal Scientist

Department of Entomology

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Field of specialization	Specialization: Economic Entomology(Pest Management)					
and Research Interest	Research Interest: Insect and mite pest managementin vegetable crops under					
	protected environment using biorationals and bioagents					
Educational	Ph.D. (Entomology)					
Qualifications						
Employment Recordalo	ng with Professional Experience					
Principal Scientist	August 18,2009 to continuing					
Senior Scientist	August 18,2009 to August 17, 2009					
Scientist						
Professional	30 years (Teaching, Research, Extension and Teaching)					
Experience						
Research Projects	9 (as Principal Investigator)					
handled	10 (as Co-Principal Investigator)					
Research Publications	Total Publications in peer reviewed journals: 80					
(Best five publications	<b>1.Sharma, S.D.</b> 2022. Management of brinjal shoot and fruit borer <i>Leucinodes orbonalis</i>					
during last five years)	with chemicals and crude plant extracts. <i>Indian Journal of Plant Protection</i>					
	49(2):101-106. (NAAS rating : <b>5.07</b> ).					
	2. <b>Sharma</b> , <b>S.D</b> . 2022. Comparative efficacy of different insecticides, biopesticides					
	and plant extracts against the cutworms. Indian Journal of Plant					
	<i>Protection.</i> 50(4):127-130.(NAAS rating : <b>5.07</b> ).					
	<b>3.Sharma, S.D.</b> and Sidhu K S. 2020. Effect of sowing date and seed rate on the incidence					
	of cutworms <i>Agrotis spp</i> in maize. <i>Indian Journal of Entomology</i> 82(4):697-699 (NAAS rating : <b>5.89</b> ).					
	<b>4.Sharma, S.D.</b> 2018. Invasion of leaf miner <i>Tuta absoluta</i> Meyrich on tomato in Kullu					
valley of Himachal Pradesh. Indian Journal of Plant Protection.						
	231.(NAAS rating <b>5.07</b> ).					
	<b>5.Sharma, S.D.</b> and Lal, R. 2019. Bioefficacy and economics of readymade mixed					
	formulation and conventional insecticides against red pumpkin beetle and					
	fruit fly infesting cucumber (Cucumis sativus) in Kullu Valley of Himachal					
	Pradesh. Journal of Entomological Research 42(1):45-49. (NAAS rating:					
D 1 D 11' 1 1	<b>5.89</b> ).					
Books Published	Booklets published =3 Book Chapters=5					
	Book Chapters=3					
Conference/Symposiu	40					
m papers						
Farmers outreach/	Number of trainings organized: 25					
including popular	Popular articles/ Pamphlets: 180					
articles	Success stories =6					
Students guided as	M.Sc.: 4; continuing:4					
major adviser	Ph.D.: Nil; continuing: 2					
Awards/Fellowships	> Bestowed upon with an Excellent work award (a momento and certificate) for the					
(Best three)	<u> </u>					
(	IPM technology in vegetables with emphasis on biopesticides, plant extracts,					

- pheromone traps and bioagents' which was concluded at HAREC, Bajaura. The project was sanctioned by the NABARD and the award was conferred on February 8, 2023. The award was given by the Chief Secretary, Govt. of HP.
- > Awarded the Fellowship of Plant Protection Society of India, Hyderabad on March 2018.
- ➤ Received certificate of appreciation from NIT, Hamirpur (H.P.) for presenting a paper on "Impact of climate change on cropping pattern and insect pests" on June 5, 2015 in International Workshop on Mitigating Climate change impacts held at NIT, Hamirpur.
- ➤ Got the certificate of Excellence in Reviewing the papers of Indian Journal of Plant Protection, Indian Journal of Entomology and Current Agricultural Research Journal.

# Miscellaneous achievements/activitie

### **New Insects identified = 3**

#### a) In Research

- ➤ Worked on high value cash crops like kalazira, saffron and rajmash and reported the incidence of insect pests in these crops for the first time. Among the insect pests attacking kalazira, gram pod borer has been found to be the most serious with 30-40% infestation.
- ➤ In rajmash, leaf eating weevil *Strophosomoides kumaoensis* was identified and reported as a serious pest in Sangla valley for the first time from India with 20-30 per cent seedling mortality. This insect was reported on rajmash for the first time from India and management practices for its control were also suggested.
- ➤ **Bean bug** *Chauliops nigrescens* was also identified and reported on rajmash for the first time from Sangla.
- ➤ **New evidence** ; New evidence of pseudo scorpion *Ellingsenius indicus* Chamberlin predating upon Indian honey bee *Apis cerana* and causing huge bee mortality in Kullu district was reported and published for the first time.
- ➤ **Biopesticide efficacy**:In view of the safety to the human health and ecology, biopesticides like neemban and plant extracts like extract prepared from 5 plant species and used as 5% (bhang, karvi, walnut, kaner & darek)were found to be effective with 13.6 and 19.2 % leaf miner infestation after 10 days of their 2<sup>nd</sup> spray with significantly higher yields.
- A new insect identified as green gram weevil, *Pachytychius mungonis* was found damaging the pods of black gram, cowpea and green gram in Kullu valley of Himachal Pradesh was reported from India as the pest of these crops for the first time.
- ➤ Reported the new insect pinworm or leaf miner *Tuta absoluta* attacking tomato for the first time from Kullu valley during 2017.
- ➤ .Evaluation of new molecule: i)A new molecule Combi DT (deltamethrin+triazophos) @ 1ml/l was tested and found effective against insect pests of cucumber in Kullu valley of Himachal Pradesh.
- Another molecule, Polytrin C 44 % (a mixture of profenophos(40%) and cypermethrin (4%) was tested against shoot and fruit borer of brinjal and found effective.

#### In Extension

- Organized a Farmer field School during 2006-2007 at Haat village of Kullu district.
- ➤ Organized 20 one day field trainings under two NABARD projects. Also organized 3 Institutional trainings under these projects.
- ➤ Laid out 70 demonstrations of cabbage, cauliflower, tomato, pea, brinjal and garlic in Kullu, Naggar and Banjar blocks under two NABARD projects.