

SURENDER KUMAR SINGH

Principal Scientist (Entomology), National Centre for Integrated Pest Management,
Pusa Campus New Delhi

E-mail:- sk_ncipm@yahoo.com

Cell: 011-25843936



Educations:

Ph.D. Agri. Entomology , CCSHAU, Hisar, Haryana
M.Sc. Agri. Entomology, CCSHAU, Hisar, Haryana

Appointments:

2008 - present	Principal Scientist
2002 - 2008	Sr. Scientist (Agri. Ento.), NCIPM, New Delhi
1998 - 2002	Scientist Sr. Scale (Agri. Ento.), NCIPM, New Delhi
1994 - 1998	Scientist (Agri. Ento.), NCIPM, New Delhi
10.02.94 - 01.9.1994	Scientist (Agri. Ento.), NCIPM, New Delhi
1993-1994	Scientist (Agri. Ento.), NCIPM, New Delhi

Technologies / concepts developed:

IPM module development and their field validation for different crops like oilseed crops- mustard, groundnut, castor, linseed, safflower, sunflower, soybean, sesame and other miscellaneous crops like cauliflower, sorghum etc. in different agro-ecological zones.

Databases of plant protection recommendations for field crops, fruit crops, vegetable, spices, medicinal crops, database of sources of critical IPM inputs producing units in the country, published research papers in referred research journals (29), papers in conferences/ proceedings/symposium/ seminars 71; Books 8; technical bulletins 6; popular articles 10; book chapters 6; training manuals 10, Video film -1, TV (DD-1 talks-1), IPM extension folders/leaf lets 11, conducted National Level Training Programme on “Mass Production of Bio-control Agents” – 10 trainings, International exposure - twice (Indonesia and USA), I invented innovative IPM technologies (Patents filed in India-12), (International Patent PCT filed -1), (Patents Awarded-2), (IPM technologies commercialized against IPR money and royalty -6), I participated in the preparation of IPM road maps/IPM visions/Brain storming sessions, five year plans, IPM databases, technical progs., GAP (Good Agricultural practices), inter-institutional projects on IPM, IPR guidelines related to IPM inputs for ICAR, trainings to the entrepreneurs related to IPM technologies etc.

Patents:

- “Egg cleaning device” (Kumar,P., Kumar, Surender and Puri,S.N.) (Patent No. 213744) (Date of Grant : 11.01.2008);
- Aerial Insect Trap (Kumar,P., Jalali, B.L., Kumar, Surender and Singh, Amerika) (Patent No. 226238) (Date of Grant : 15.12.2008);
- “Field kit for the multiplication of insect larval parasitoid” Surender Kumar Singh, D.B. Ahuja, D. K. Garg and Amerika Singh.Patented (170/DEL/2007);
- “Apparatus for culturing the biological control agents *in situ*” Surender Kumar Singh and Amerika Singh, Patented (No. 489/DEL/2007);
- “Non-sticky Insect Trap” Surender Kumar Singh, D.B. Ahuja, D. K. Garg and O.M. Bambawale Patented (No. 1454/DEL/2008);
- ‘Insect rearing and collection apparatus’ Surender Kumar Singh and OM Bambawale (2008) (Patent application No. 2821/DEL/2008). FILLING DATE: 15.12.2008;
- ‘Insect oviposition and egg collection apparatus’ (Surender Kumar Singh and OM Bambawale, 2009) (Patent application No. 1481/DEL/2009);
- “Light trap having insect sorting filters” (Surender Kumar Singh and Om Prakash Bambawale)(Patent application No. 117/DEL/2010). FILLING DATE: 22.01.2010;
- “Light trap safer to beneficial insects ” (Surender Kumar Singh and Om Prakash

- Bambawale), (Patent application No. 1822/DEL/2010);
- “Device for beneficial insects” (Surender Kumar Singh and Om Prakash Bambawale) (Patent application No. 1137/DEL/2010);
- “Light trap for managing insects” (Surender Kumar Singh and Om Prakash Bambawale) (Patent application filled during 2010-11);
- “Device for preventing climbing of pests” (Surender Kumar Singh and O.M. Bambawale) (Patent application: 2814/DEL/2011)

International Patent - PCT application filed:

- “Light trap for managing insects” (Surender Kumar Singh and Om Prakash Bambawale, 2012), International Bureau of the World Intellectual Property Organization, Application No.: PCT/IB2012/050168, Date of filing: 13 January 2012.

Other Technology

- “UV chamber for *Corcyra* eggs sterilization”.
- Distribution maps of insect pests and diseases (rice and cotton)
- Insect handling devices.

Grants:

Externally funded Projects

- “Standardization of a newly developed aerial insect trap” (NATP PROJECT) (Project period : April,1, 2000-March 31, 2003) Principal Investigator (₹ 17 Lakh)
- “Development of IPM modules for oilseeds and nutritious cereals based production system” (NATP PROJECT) (Project period: April,1, 2000- Nov., 30, 2003) as Co-Principal Investigator. (₹ 1.86 Crore)
- “Large scale validation and popularization of newly developed insect light trap” (Project period: January 2011- June 2011) Principal Investigator (₹ 6 Lakh) (funded by private firm).
- National Initiative on Climate Resilient Agriculture (NICRA) As associates up to Dec.2012.

Publications:

Book: 8, Technical Manuals: 10, Technical Bulletin: 5, Technical Folder: 5

- Kumar, P. and **Kumar, Surender**, (2002). Evaluation of different rearing media for *Corcyra cephalonica* (Stainton), *J. biol. Cont.* 16(2): 117-120.
- **Surender Kumar Singh**, S. Singh and P. Katti (2005). Evaluation of IPM Technology for Groundnut and Sunflower Based Production System *Entomon* 30(3):201-205.
- Kumar, P. and **Kumar, Surender** (2001). Mating and oviposition cage for *Helicoverpa* during winter season *Entomon*, 26 (3&4):331-335.
- Kumar, P. and **Kumar, Surender** (2001). Foolproof cage for rearing *Corcyra cephalonica*, *Indian J. Ent.*, 63 (3):322-324.
- Singh, S., **Singh, Surender Kumar** and Suryawanshi, D.S. (2006). Evaluation of different treatments for the management of safflower insect pests and diseases under rainfed conditions. *Indian J. Ent.*, 68(3):286-289.
- Singh, Saroj, Parlekar, G.Y. and **Singh, Surender Kumar** (2006). Development and validation of IPM schedule for safflower and chickpea strip cropping system under rainfed conditions in Maharashtra. *Indian Phytopath.* 59 (2):164-167.
- **S. K. Singh**, D. B. Ahuja, D. K. Garg and O. M. Bambawale (2012). An innovative larval parasitoids multiplication kit. *Ann. Pl. Protect. Sci.* 20(1): 33-36 (March, 2012)
- **Kumar, Surender** and Sehgal, M. (1998). Indigenous Technical Knowledge of the Farmers about Pest Management. *Annals. Pl. Protec. Sci.*, 6 (2):186-188.
- Saroj Singh, **Surender Kumar** and H. Basappa (2005). Validation of Integrated Pest

Management Technologies for the Castor Crop in Rainfed Agro-ecosystem. *Annals Pl. Prot. Sci.*, 13 (1) 105-110.

- Saroj Singh, **Surender Kumar** and G.Y. Parlekar (2004). Synthesis and Validation of IPM Modules in Safflower and Chickpea Strip Cropping System. *Annals Pl. Prot. Sci.*, 12 (2) 257-259.
- **Kumar, Surender, Singh, S.** and Rane, A.E. (2000). Evaluation of Integrated Pest Management Modules in Linseed Crop, *Annals Pl. Protec. Sci.*, 8 (1) : 84 -85.
- Singh, S., **Kumar, Surender** and Ahmad, Nasim (2003). Synthesis and Validation of Eco-friendly Integrated Pest Management Module for Mustard Crop under Haryana Agro-climatic Conditions. *Annals. Pl. Protec. Sci.* 11(2): 373-376.
- **Kumar, Surender,** Singh, N.N. and Singh, S. (2001). Effectiveness and economics of different treatments against mustard aphid, *Lipaphis erysimi* (Kalt.) in mustard crop, *J. ent. Res.*, 25(2) : 127-129.
- Singh, S., **Kumar, Surender** and Ahmad, Nasim (2003). Evaluation of eco-friendly pest management strategies for mustard crop, *J. ent. Res.* 27(2):115-120.
- Singh, S., Singh, Surender Kumar_ and Katti, P. (2005). Development of eco-friendly IPM technology for groundnut + sunflower based production system under rainfed conditions. *J. ent. Res.* 29(3):189-192.
- Ahuja, D.B., R.K. Kalyan, **Singh, Surender Kumar**_and U. Rani. (2008). Effect of Native Flora of Indian (*Thar*) Desert on the Development and Survival of Beat Armyworm, *Spodoptera exigua* (Hubner) (Lepidoptera: Noctuidae).*J.Insect Science.* 21(3):282-285.
- Ahuja, D.B., Kalyan, R.K., Ahuja, U.R. , **Singh, Surender Kumar,** Sundria, M.M. and Dhandapani A. (2008). Integrated Management Strategy for Painted Bug, *Bagrada hilaris* (Burm.) Inflicting Injury at Seedling Stage of Mustard (*Brassica juncea*) in Arid Western Rajasthan, *Pesticide Research Journal* 20(1): 48-51
- **Singh, Surender Kumar** , V.K. Baranwal and Tapati Banerjee (2008). A new technique for mapping geographical distribution of crop pests: its benefits and scope, *J. Insect Sci.*, 21(4): 352-355.
- **Singh, S. Singh,** S.K. and Sudhakar, R. (2008). Validation of Integrated Pest Management Technology for Castor + Pigeonpea Intercropping System for Rainfed Agro-ecosystem with Farmers' Participatory Approach. *Pesticide Res. J.* 20(2): 217-220.
- **Surender Kumar Singh** (2006). Eco-friendly integrated pest management recommendations for vegetable crops in India: a case study. *Haryana J. Hort. Sciences.* 35(3&4):361-363
- **Singh, Surender Kumar,** V.K. Baranwal and Tapati Banerjee (2009). Mapping of pests' distribution in India: a case study, *J. ent. Res.* 33(3): 223-225.
- Singh, S., Singh, Surender Kumar and Sudhakar, R. (2006). Comparative performance of different pest management treatments for castor + pigeonpea intercropping system under rainfed conditions. *Research on Crops:An International J.* 7(2):548-551
- Saroj Singh, R. B. Gaur, **S.K. Singh** and D.B. Ahuja (2009). Development and evaluation of farmers-participatory integrated pest management technology in groundnut, *Indian J. Ent.*, 71(2):160-164.
- D.S. Suryawanshi, Saroj Singh and **Surender Kumar**_(2004). Validation of eco-friendly IPM module for safflower, *Carthamus tinctorius* L., *J. Oilseeds Res.* 21(20):376-378.
- Singh, S., **Singh,** S.K., Gaur, R.B.(2008). Impact of different eco-friendly pest management treatments on the periodic development and spread of biotic stresses in groundnut crop, *J. Phytol. Res.* 21(2):159-162.

Honours:

- The Director, NCIPM (late Prof. Dr. Amerika Singh) appreciated the research efforts as "Commendable work well done". All requirement of egg-parasitoid *Trichogramma* was provided by us and Cotton team won Best ICAR team Award.
- The Hon'ble Director General, ICAR appreciated the research work and issued an Appreciation Letter to me as "OUTSTANDING Contribution" in 2003 based upon six

monthly reports.

- The basic concept of “Pest mapping” was given and developed first time in India. The Hon’ble Director General, ICAR had also appreciated the compilation of “Mapping of pest distribution of crop in India (cotton)”. It helped in mapping the hot spot areas in the country. Pest mapping using GIS package has advantages in the management of pests timely. At present, this has become stronger with GPS based surveillance/ e-pest surveillance prog. in the country (2 technical bulletins on distribution maps of insect pests and diseases of rice and cotton were compiled, published and available in NCIPM library).
- Awards for best poster presentation-3
IPR royalty: Approx. ` 1.0 Crore

Professional Activities:

- Conducted “National Training Course on Mass Production Technology of Biological Control Agents” (as Course Co-Coordinator) (total =10 trainings).
- I was nominated as “Member of Board of Studies” of Department of Entomology, IARI, New Delhi since 17.7.2008 for the academic session (2008-09).
- Teaching IARI students (since 2003 onwards and till date)
 - Bio-control 105,
 - IPM Course 213 to IARI students as faculty member.
- Establishing and strengthening of insect bio-control lab. at NCIPM, New Delhi As Co-PI (1996-2001) As PI (2002-2008) of the bio-control project
- Encouraging Sports activities as Chief –de-Mission Sports, ICAR Inter zonal Sports Meets (during 1996-2009) (12 times) As Chief-de-Mission Sports (12 times).
- IPR Cell, NCIPM
- ITMU, NCIPM, New Delhi (12 patents, 1 International patent) (Rs. 1.0 Crore royalty)
- IPR Cell member and Initiator for all activities related to this.
- Technology Commercialization Cell, NCIPM Initiator
- HRD- farmers’, students’ group, training participants were educated about biocontrol technologies (1996-2008) As Co-PI of bio-control project (1996-2001) As PI of bio-control project (2002-2008)
- HRD- training to fabricate entomological devices to the private entrepreneurs in biocontrol lab. (total 4 trainings) As PI of bio-control project (2002-2008)
- Incharge IPM gadgets’ workshop
- Co-ordinator – entrepreneurs trainings
- Preparation of GAP standards
- Participated in the “National preparation of provisions of GAP Standards as applicable under Indian situation” on Sept. 24,2009 in Quality Council of India, Institution of Engineers Building, Bahadur Shah Zafar Marg, New Delhi – 110 002, India and provided help in the preparation of GAP Standards.
Attended the meeting of “Agricultural Systems and Management Sectional Committee on India GAP”, on 18.11.2009 at Bureau of Indian Standards, “Manak Bhawan”, 9, Bahadur Shah Zafar Marg, New Delhi- 110002 and provided help in the preparation of Indian Standards.

Member of Professional Societies:

Life membership of

- Indian Journal of Entomology
- Indian Journal of Plant Protection
- Annals of Plant Protection
- Journal of Biological Control
- Journal of Oilseed Research
- Journal of Insect Science