

CONTENTS**Research Article**

1. YOGESH YELE, SUBHASH CHANDER, SACHIN S. SUROSHE, SURESH M NEBAPURE, ARYA P S AND PRABHULINGA T, Effect of ecological engineering on incidence of key rice pests 503
2. VINOD KUMAR DUBEY, KALLESHWARASWAMY C M, SUNIL JOSHI AND SHIVANNA B K, Diversity and diagnostics of sternorrhynchan insect pests infesting arecanut 509
3. GHOSAL ABHIJIT, DAS K AND KUNDU P, Molecular characterization of whitefly *Bemisia tabaci* (Genn.) and development of IPM module against chili leaf curl complex 516
4. GAVAS RAGESH, TOM CHERIAN, NAGARAJU D K, MILU MATHEW AND PUSHPALATHA P B, Some details on the biology of leaf beetle *Sastroides besucheti* Medvedev occurring on wild nutmeg 522
5. NAVJOT KAUR AND H K SIDHU, Avifaunal diversity in wheat crop: a case study of Bathinda district of Punjab 528
6. ABDUL WAKIL BARAKZAI, RAJESHWAR SINGH CHANDEL, PREM LAL SHARMA, SUBHASH CHANDER VERMA, MANEESH PAL SINGH AND PANMA YANKIT, Effect of farming systems on diversity and seasonal abundance of insect pests and their natural enemies in cauliflower 535
7. IPSITA MISHRA, SUBHALAXMI ROY AND B K MISHRA, Comparative biology of three coccinellid predators on cowpea aphid *Aphis craccivora* 541
8. AVINASH CHAUHAN AND H K SINGH, Stingless bee *Tetragonula iridipennis* and honey bee *Apis cerana* pollination in cucumber 546
9. SUDESHNA THAKUR AND A K SOOD, Deterrent activity of natural products on two spotted spider mite *Tetranychus urticae* Koch 551
10. SENTHOORRAJA R, SUBAHARAN K, DEEPAK KUMAR PATEL, VPPALAYAM SHANMUGAM PRAGADHEESH, BASAVARAJAPPA S AND N BAKTHAVATSALAM, Potential of polymer matrix in delivery of lemon grass *Cymbopogon citratus* Stapf essential oil against house fly *Musca domestica* L. 556
11. M ALAGAR, V SIVAKUMAR, S PRANEETHA, K CHINNADURAI, A JOSEPHRAJKUMAR AND H P MAHESWARAPPA, Ecofriendly management of rugose spiralling whitefly *Aleurodicus rugioperculatus* Martin infesting coconut 562
12. NAVEENKUMAR B PATIL, BASANA GOWDA G, TOTAN ADAK, GURU PIRASANNA PANDI G, MAHENDIRAN ANNAMALAI, P C RATH AND MAYABINI JENA, Repellency of plant essential oils to key coleopteran stored grain insects of rice 567
13. S J REUOLIN, N MUTHUKRISHNAN, M PARAMASIVAM, R P SOUNDARARAJAN, K S SUBRAMANIAN AND N MARAGATHAM, Volatile profiles as affected by rice brown plant hopper and yellow stem borer in rice land races 573
14. ARUP KUMAR SARMA, SHOBHA DUTTA DEKA AND PRASANTA KUMAR DAS, Invasion of *Aleurodicus rugioperculatus* Martin in Assam, posing threat to coconut growers 582

15. SNEHEL CHAKRAVARTY, SABUJ GANGULY, KANCHAN GANGARAM PADWAL, RAM KEVAL AND C P SRIVASTAVA, Morphology of immature stages and adults of *Helicoverpa armigera* 588

Research Communication

16. AISHWARYA HIREMATH, POOJA AND RAMEGOWDA G K, Efficacy of insecticides against jamun seed weevil *Curculio c- album* F. 594
17. USHA RANI, MANVENDER SINGH AND KRISHAN KUMAR SELWA, Aphrodisiac effect of *Aloe vera* gel supplementation in diet of *Drosophila melanogaster* Meigen 598
18. S S KARABHANTANAL AND SAICHARAN DHARAVATH, Evaluation of insecticides and biopesticides against leafhopper *Empoasca kerri* Pruthi in pigeon pea 602
19. KAWSAR RASOOL, SHEIKH BILAL AHMAD AND MUNAZA YAQOUB, Biology of diamond back moth *Plutella xylostella* L. on cabbage 604
20. MITESH MAKWANA, A K PANDAY AND KULDEEP SHARMA, Host plant resistance to sesamum leaf webber and capsule borer *Antigastra catalaunalis* (Duponchel) 607
21. MOHD HUSSAIN, ALTAF HUSSAIN MIR AND HIDAYATULLAH TAK, New record of *Protophormia* sp. (Calliphoridae: Diptera) from cold arid desert Kargil Ladakh 611
22. MURLIDHAR SADAWARTI, SUBHASH KATARE, S P SINGH, M ABAS SHAH, R K SAMADHIYA, SANJEEV SHARMA AND R K SINGH, Efficacy of mineral and non-edible seed oils against aphids and whitefly in potato 614
23. J DIVYA, C M KALLESWARASWAMY, SHARANABASAPPA DESHMUKH, S AMBARISH AND C SUNIL, Evaluation of whorl application of insecticides mixed with sand against fall army worm *Spodoptera frugiperda* in maize 617
24. A S GADGE, VENKATESHALU, J B GOPALI, H P HADIMANI, V P SINGH, RAGHAVENDRA AND VIJAYMAHANTESH, Improving the efficacy of pongamia oil with combinations of botanical oils against sucking pests of chilli 622
25. G S KARTHIK AND A S VASTRAD, Biochemical response of chickpea genotypes as influenced by pod borer *Helicoverpa armigera* (Hubner) 627
26. K RAVI KUMAR AND C NARENDRA REDDY, Detection of hidden infestation of cigarette beetle *Lasioderma serricorne* F. in turmeric rhizomes by X-ray radiography 631
27. VIKAS TANDON AND AJAI SRIVASTAVA, Assessment of yield losses due to white stem borer *Scirpophaga fusciflua* (Hampson) in rice 634
28. NEERJA AGRAWAL AND NEELAM YADAV, Evaluation of coloured fruit fly traps in guava 637
29. BHAGYASHRI KAMBLE, BHALKARE S K, POONAM DESHMUKH AND UNDIRWADE D B, Evaluation of insect growth regulators against leafhoppers and whiteflies in Bt cotton 639
30. S C BOKAN, P R ZANWAR AND D G MORE, Efficacy of insecticides against soybean girdle beetle *Obereopsis brevis* 643
31. RAKSHAN, Predating efficiency of *Cheilomenes sexmaculata* F. on bean aphid *Aphis craccivora* Koch 645
32. N KAMAKSHI, A S R SARMA AND C V CHANDRA MOHAN REDDY, Efficacy of insecticides against sorghum spotted stem borer *Chilo partellus* (Swinhoe) 647
33. RANJEET KUMAR, PURNVARATH S PANDEY AND RAVINDRA KUMAR SOHANE, Efficacy of essential oils against three stored product Coleoptera in wheat stored in superbags 651

34. RENU GOGOI, SURAJ CHETRI AND REZINA AHMED, Edible insects used as food by Tangsa and Wancho tribes of Changlang district, Arunachal Pradesh 654
35. DANISHTA AZIZ, SHEIKH BILAL AHMED, MUNAZAH YAQOOB, KHURSHEED AALUM, SHEIKH AAFREEN REHMAN AND NAHIDA ANJUM, Population dynamics of cut worm *Agrotis ipsilon* Hufnagel on maize in Kashmir 657
36. S SUSMITHA, M SHANTHI, M MURUGAN, K SENTHIL AND M L MINI Efficacy of ethyl acetate extracts of botanicals on diamond back moth *Plutella xylostella* L. 659
37. RAJNA S, MAHAPATRO G K, SUBRAMANIAN S, SUBHASH CHANDER AND SUDHAKAR KELAGERI, Susceptibility of imidacloprid resistant whitefly *Bemisia tabaci* (Gennadius) to cyantraniliprole 663
38. MAYANK KUMAR AND A K PANDEY, Host preference and population dynamics of *Holotrichia nagpurensis* Khan and Ghai 667
39. S RAGHUL AND K KUMAR, Diversity and population dynamics of spiders in agroecosystems 670
40. RAM KUMAR, P P SINGH AND KUMBHAR C R, Intercropping as sustainable approach against okra shoot and fruit borer *Earias* spp. 674
41. AYAN DAS AND HIRAK CHATTERJEE, Efficacy of botanicals against mulberry whitefly *Dialeuropora decempunctata* (Quaintance and Baker) and their safety to natural enemies 677
42. S MASTAN SHAREEF, T MADHUMATHI, M SWATHI AND A K PATIBANDA, Toxicity of some insecticides to the fall army worm *Spodoptera frugiperda* 680
43. MOHAMMAD THAMSEER M K, S S YADAV, RAHUL SAINI AND KRISHNA ROLANIA, Elytral polymorphism in seven spotted ladybird beetle *Coccinella septempunctata* L. 683
44. PARAMESWARA REDDY, AVINASH CHAUHAN AND H K SINGH, Impact of bee pollination in brinjal 687
45. MANI KANNAN, BALAKRISHNAN PADMANABAN AND KAMMATTERIKUNNU ASHIF, Evaluation of biopesticide formulations against banana stem weevil *Odoiporus longicollis* (Olivier) 690
46. M PUNITHAVALLI, Spatial distribution of proteinase inhibitors among diverse groups of sugarcane and their interaction with sugarcane borers 693
47. MARUTHADURAI R AND R RAMESH, Fall army worm *Spodoptera frugiperda* strains in Goa and its incidence on fodder maize 697
48. POONAM DESHMUKH, MANE P N, UNDIRWADE D B AND SONALKAR V U, Biology of groundnut bruchid *Caryedon serratus* (Olivier) 700
49. TIMMANNA, MOHAN I NAIK, JAMUNA B AND RAVICHANDRA N G, Toxicity of some insecticides against thrips infesting tomato 702
50. SANIYA TYAGI, RAM KEVAL, SUNIL VERMA AND DHRUBA NARAYAN KOHAR, Morphological and biochemical basis of resistance to pod borer *Helicoverpa armigera* in pigeonpea 704
51. CHANDRAMANI RAJ, SHWETA SINGH, RAVI KANT AVASTHE, YONA PRADHAN, D M FIRAKE, G T BEHERE AND B K KANDPAL, Prevalence of invasive fall army worm *Spodoptera frugiperda* (J E Smith) on organic maize in Sikkim 709

Review

52. V S NAGRARE, BABASAHEB B FAND, RISHI KUMAR, V CHINNA BABU NAIK, KUNDAN BHURE, BHAUSAHEB NAIKWADI, NANDINI GOKTE-NARKHEDKAR AND V N WAGHMARE, Arthropod pests and their natural enemies associated with cotton in India: a review# 713

53. AMARJIT S TANDA, Wild bees and their conservation	726
54. TALIM HUSSAIN, P K KUMAWAT, RAFAKAT HUSSAIN, REENA AND ARTI, Habitat manipulation- a tool to manage insect pests	737
55. ANSHIKA SINGH, DEEPAK MARATHE AND KANCHAN KUMARI, Black soldier fly <i>Hermetia illucens</i> (L.): Ideal environmental conditions and rearing strategies	743

Indian Journal of Entomology is now open access and its website is indianentomology.org which has all details required for a Journal's website. The journal is online at indianjournals.com. It is listed in Clarivate Analytics/ Web of Science Masterlist, and UGC and NAAS. The papers published in this journal are selectively abstracted/ indexed in Zoological Record; CAB Abstracts, CAB International, Wallingford, U.K; also CrossRef, Agricola, Google Scholar, CNKI Scholar, ICI, Indian Science, and Indian Citation Index. Also indexed in Electronic Magazine library, Max Planck Institute for Bildungsforschung, Berlin; and EBSCOhost global library database, USA. It is UGC approved. Each paper bears a doi number to facilitate online identity and access. The journal articles are also subjected to JATS Conversion from 2019 onwards.
