Department of Agricultural Entomology
Post Graduate Institute
Mahatma Phule Krishi Vidyapeeth
Rahuri-413 722, Dist. Ahmednagar (MS)

Preamble

On establishment of MPKV, Rahuri in 1969, full-fledged, Department of Agricultural Entomology was started functioning at the Central Campus, Rahuri. This University Department was headed by Dr. M. V. Kadam, Dr. D. S. Ajri, Dr. V. M. Khaire, Dr. P. R. Moholkar, Dr. V. M. Pawar, Dr. K. S. Darekar, Dr. U. N. Mote , Dr. M. D. Dethe, Dr. A. G. Chandele Dr. S. S. Jadhav, Dr. S. B. Kharbade, Dr. U. B. Hole and Dr. D. S. Pokharkar. Presently Dr. C. S. Patil is heading the department. The department is entrusted with responsibilities of planning and conduct of post-graduate teaching, research and extension education in Agricultural Entomology. Moreover planning of research experiments at various research projects at Central Campus as well as other stations under the jurisdiction of university is done and monitored by the department. At post graduate level, the main emphasis is given on Biocontrol, Integrated Pest Management, Nematology, Insect Toxicology, Pesticide Residues, Economic Entomology, Host plant Resistance and Insect Ecology. The department is strengthened with advanced research facilities in the field of pesticide residues. Pesticide Residue Laboratory is accredited by NABL, Quality Council of India, New Delhi.

Mandates

- Survey and monitoring of pest outbreaks and intensity of key and major pests on crops.
- Screening of potential genotypes/ high yielding hybrids/ varieties to find out source of resistance in breeding programme.
- Development of pest management strategies for major pests in Agriculture.
- Development of IPM and BIPM packages for important crops.
- Investigation on alien invasive pests.
- Demonstration of IPM strategies for field and horticultural crops.
- Production and sale of biopesticides and attempt for registration of biopesticides.
- Product testing for evaluation of newer molecules against crop pests.
- Monitoring of pesticide residues in food commodity (fruits, vegetables, cereals, pulses, milk and water etc.)
- Management of nematodes in agriculture
- Farmers advisory services through CROPSAP
- Establishment of Apiculture unit at PG Farm
- Establishment of Vermicompost unit by maintaining three species of earthworms *viz*., *Eisenia fetida, Eudrilus eugeniae* and *Perionyx excavatus*.

Faculty

S. N.	Name	Designation	Area of Specialization	Mobile Numbers	Email
1.	Dr. C. S. Patil	Head	Pesticide Residues, Insecticide Toxicology and IPM	09922061475	cspatils@rediffmail.com
2.	Dr. G. B. Kabre	Professor (CAS)	Economic Entomology, Biological Control & HPR	09730766963	kabregb@gmail.com
3.	Dr. S. T. Aghav	Assistant Professor	Biological Control Economic Entomology	09423003307	staghav3@yahoo.com
4.	Dr. P. R. Palande	Assistant Professor	Biological Control Nematology IPM	07588695307	pallaviento@gmail.com

Academic Programmes

Course Layout

Minimum Credit Requirements for PG programme

Sr. No.	Subject	Minimum credit(s)
1.	Major	20
2.	Minor	10
3.	Supporting	06
4.	Seminar	01
5.	Research	20
	Total Credits	**57**
	Compulsory Non Credit Courses	06

Courses offered for M. Sc. (Agri) in Agricultural Entomology

Sr. No.	Course Number	Course Title	Credits
A) Major Subjects (Min. 20 credits)			
	ENT-501	Insect Morphology	1+1=2
	ENT-502	Insect Anatomy, Physiology and Nutrition	2+1=3
	ENT-504	Classification of Insects	1+1=2
	ENT-505	Insect Ecology	1+1=2
	ENT-507	Biological control of Crop Pests and Weeds	1+1=2

	ENT-508	Toxicology of Insecticides	2+1=3
	ENT-510	Principles of Integrated Pest Management	1+1=2
	ENT-511	Pests of Field Crops	1+1=2
	ENT-512	Pests of Horticultural and Plantations crops	1+1=2
	ENT-518	Techniques in Plant Protection	0+1=1
B) Minor Subjects (Min. 09 credits)			
	MICRO-501	Principles of Mircrobiology	3+1=4
	Pl.Path.-506	Principles of Plant Disease Management	2+1=3
	MICRO-505	Microbial Biotechnology	2+1=3
C) Supporting Subjects (Min. 06 credits)			
	BIOCHEM-510	Basic Biochemistry	2+1=3
	STAT-507	Design of Experiments for Plant Protection	2+1=3
D) Seminar (Credit)			
	ENT-591	Master Seminar	0+1=1
E) Master's Research (20 credits)			
		Master's Research	0+20=20
F) Non Credit Compulsory Courses			
	PGS-501	Library and Information Services	0+1=1
	PGS-502	Technical Writing and Communication Skills	0+1=1
	PGS-503	Intellectual Property and its Management in Agriculture	1+0 =1
	PGS-504	Basic concepts in laboratory Techniques	0+1=1
	PGS-505	Agriculture Research, Research Ethics and Rural Development Programmes	1+0 = 1
	PGS-506	Disaster Management	1+0=1

Minimum Credit Requirements for Ph. D. in Agricultural Entomology

Sr. No.	Subject	Minimum credit(s)
1.	Major	17
2.	Minor	11
3.	Supporting	05
4.	Seminar	02
5.	Research	45
	Total Credits	**80**
	Compulsory Non Credit Courses	15

Sr. No.	Course Number	Course Title	Credits
A) Major subjects (Min.17 credits)			
1.	ENT-601	Advanced Insect Systematics	1+2
2.	ENT-602	Immature Stages of Insects	1+1
3.	ENT-603	Advanced Insect Physiology	2+0
4.	ENT-604	Advanced Insect Ecology	1+1
5.	ENT-605	Insect Behaviour	1+1
6.	ENT-606	Recent Trends in Biological Control	1+1
7.	ENT-607	Advanced Insecticide Toxicology	2+1
8.	ENT-608	Advanced Host Plant Resistance	1+1
9.	ENT-609	Advanced Acarology	1+1
10.	ENT-610	Agricultural Ornithology	1+1
11.	ENT-611**	Molecular Approaches in Entomological Research	1+1
12.	ENT-612**	Advanced Integrated Pest Management	2+0
13.	ENT-613/ Pl.Path-606$	Plant Biosecurity and Biosafety	2+0
14.	ENT-691	Doctoral Seminar-I	1+0
15.	ENT-692	Doctoral Seminar-II	1+0
16.	ENT-699	Doctoral Research	45
B) Minor Subjects (Min. 11 credits)			
1.	MICRO-510	Industrial Microbiology	2+1=3
2.	MICRO-601	Advances in Fermentation	2+1=3
3.	NEMA-603	Advances in Nematode Management	2+1=3
4.	Pl. Path-606	Plant Biosecurity and Biosafety	2+0=2
C) Supporting Subjects (Min. 05 credits)			
1.	Biochem-603	Biochemistry in Biotic and Abiotic Management	3+0=3
2.	Biochem-607	Advanced Techniques in Biochemistry	0+2=2
D) Seminar (02 credits)			
1.	ENT-691	Doctoral Seminar	0+1=1
2.	ENT-692	Doctoral Seminar	0+1=1
E) Doctoral Research (45 credits)			
1.	ENT-699	Doctoral Research	0+45=45
F) Non Credit Compulsory Courses			
1.	PGS-501	Library and Information Services	0+1=1

2.	PGS-502	Technical Writing and Communications Skills	0+1=1
3.	PGS-503	Intellectual Property and its Management in Agriculture	1+0=1
4.	PGS-504	Basic Concepts in Laboratory Techniques	0+1=1
5.	PGS-505	Agriculture Research, Research Ethics and Rural Development Programmes	1+0=1
6.	PGS-506	Disaster Management	1+0=1

Laboratory Facilities and Equipments

The department of Agricultural Entomology developed facilities for teaching and research for the post graduate students. Sufficient laboratory provisions are made for effective execution of the programme. Facilities for conduct of research *viz*. experimental laboratories, class rooms, seminar hall, farm laboratory, glass house, microplots, etc. are well equipped with essential provisions. Independent laboratories for working in the field of biocontrol, pesticide residues and nematology are developed. Revenue receipts generated through pesticide testing scheme are utilized for the overall development of the Department. Scientific and analytical equipments *viz*. Gas chromatograph with Ms detector liquid chromatograph, spectrophotometers, low volume concentrator, solid phase extraction system high power research microscopes, laminar flow chamber, incubators, ultra centrifuge, image analyzer, etc. are installed in the laboratories to cater the need of teaching and research in entomology.

Sr. No.	Name of Instruments	Quantity
01	Kirloskar Make Laminar Flow Cabinet With Ultra Violet Tube	1
02	Binocular Stereoscopic with dissecting Microscope	1
03	Potter Spray Tower	1
04	Precision Micro application 900x	1
05	Classification Software for Agriculture Bodies (cell colony from plants sample) / seeds / microbes (Agriculture Bodies) from any sample like milk / egg etc.)soil / fruits / leaf / any other required Agriculture Bodies)	1
06	In-situ sterilizable Fermenter (Capacity 150 lit.)	1
07	In-situ sterilizable Fermenter (Capacity 150 lit.)	1
08	Immuno Fluorescent Microscope	1
09	Zero Air Generator (PCI)	01
10	Turbovap Concentrator (Caliper Life Science make)	01

Biocontrol Laboratory

Sr. No	Name of Instruments	Quantity
01	Autoclave NAT steel Horizontal cylindrical high pressure steam sterilizer Model-24 HA/E	1
02	Electronic balance CA-323 Contech make No. 2603769	1
03	Nikkon Microscope, Steriozoom Trinocular Model- SMZ with digital camera	1

04	Refrigerated Table Top Centrifuse Machine Eppendorf Make	1
05	Glassware washer with drying system	1
06	In-situ sterilizable Fermenter (Capacity 150 lit.)	1
07	In-situ sterilizable Fermenter (Capacity 10 lit.)	1
08	Autoclavable Lab. Fermenter (Capacity 04 lit.)	1
09	Immuno Fluorescent Microscope	1
10	High speed refrigerated Centrifuge	1
11	Horizontal rectangular pressure steam single door Sterilizer	1

AINP on Pesticide Residues Laboratory

Sr. No.	Name of the Instruments	Quantity
1.	Gas Chromatograph with Mass Spectrometer (Shimadzu)	01
2.	Gas Chromatograph 2010 A (Shimadzu)	02
3.	HPLC (Shimadzu)	01
4.	Homogenizer (Silent crusher) Heidolph make	01
5.	Electronic balance	03
6.	Rotary Shaker	01
7.	Deep Freezer	03
8.	Separating Funnel Shaker SA400 (Yamato)	01
9.	Blade Homogenizer (Robot Coupe)	01
10.	Turbovap Concentrator (Caliper Life Science make)	01
11.	Rotary Evaporator (Heidolph)	02
12.	Vacuum pump	01
13.	Silent Crusher Homogenizer (Heidolph)	01
14.	Zero Air Generator (PCI)	01
15.	Muffle Furnace (Cintex)	01
16.	Centrifuge Machine	02

Research Programme

M. Sc. (Agri) Ongoing programme

Sr. No.	Name of the Student	Reg. No.	Title of Thesis	Research Guide
1.	Miss. Wasu Radhika Shankar	18/138	Bioefficacy of insecticides against Fruit borer, *Helicoverpa armigera* Hubner and dissipation of combination product, Imidacloprid 120 SC + Spirotetramat 120 SC in/on tomato	Dr. Y. S. Saindane

2.	Miss. Akolkar Prachi Kanifnath	18/139	Bioefficacy of insecticides against shoot and fruit borer, *Earias vittela* Fabricius and dissipation of combination product, Flubendiamide 90 SC + Deltamethrin 60 SC in/on okra	Dr. B. V. Deore
3.	Miss. Bande Pallavi Namdev	18/140	Management of major pests in *Rabi* Sorghum, [*Sorghum bicolor* (L.) Monech].	Dr. U. K. Kadam
4.	Mr. Girhepunje Dharmendra Y.	18/141	Habitat manipulation in chickpea (*Cicer arientinum* Linn) for the management of gram pod borer (*Helicoverpa armigera* Hubner)	Prof. A. P. Chavan
5.	Mr.Wankhade Prathamesh Sheshrao	18/142	Impact of bee attractant on seed production of sunflower (*Helianthus annus* L.)	Dr. S. R. Kulkarni
6.	Mr.Waykule Rushikesh Kondiba	18/143	"Studies on root knot nematode, *Meloidogyne incognita* (Kofoid and White, 1919) Chitwood, 1949 infesting Ridge gourd, *Luffa acutangula* (L.) Roxb."	Dr. P. R. Palande
7.	Mr. Gaikwad Shubham Avinash	18/144	Population dynamics and non chemical management of oat aphid (*Rhopalosiphum padi* L.) on forage oat.	Dr. A. B. Tambe
8.	Mr.Warad Purushottam Janardhan	18/145	Bioefficacy of various insecticides against pod borer complex of pigeon pea (*Cajanus cajan* (L) Millsp.)	Prof. C. B. Wayal
9.	Mr. Raut Lalit Uttam	18/146	Seasonal incidence and management of pests infesting Jamun (*Syzygium cumini* L.)	Dr. A. R. Walunj
10.	Mr. Lohakare Mahesh Suresh	18/147	Bioefficacy of insecticides against thrips, *Thrips tabaci* and dissipation of combination product, Imidacloprid 120 SC + Spirotetramat 120 SC in/on onion	Dr. C. S. Patil
11.	Mr. Puri Pravin Pandit	18/148	Effectiveness of various spray baits against Fruit Fly, *Bactrocera cucurbitae* Coquillet on cucumber	Dr. G. B. Kabre
12.	Mr. Gujar Shubham Gunvant	18/149	Efficacy of different insecticides against pink	Dr. S. T. Aghav

			bollworm, (*Pectinophora gossypella*, Saund) on Bt cotton	
13.	Mr. Mali Ramu Shivappa	18/150	Seasonal incidence, Biology and Management of leaf eating caterpillar, *Catopsilia pyranthe* (L.) on Indian senna *Cassia anguistifolia* (Vahl)	Prof. B. Y. Pawar
14.	Mr. Gangurde Pratesh Pandit	18/151	Evaluation of different pest management modules against sucking pests of bitter gourd (*Momordica charantia* L.).	Prof. S. A. Pawar

Ph. D. Students (Ongoing Research)

S.N.	Name of Student & Reg. No.	Research Topic	Research Guide
		Ph.D. (2018-19)	
1.	Miss. Kumbhar Sonali Chhagan (018/30)	Seasonal incidence, identification of hosts, biology and management of Fall Armyworm, *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera : Noctuidae)	Dr. S. R. Kulkarni
2.	Shinde Sojwal Shalikram (018/31)	Studies on residues of pesticides in major leafy vegetables.	Dr. C. S. Patil
3.	Band Sagar Shriram (018/32)	Development and evaluation of liquid formulations of *Metarhizium anisopliae* (Metschnikoff) Sorokin for its storability, compatibility and bioefficacy	Dr. G. B. Kabre
4.	Bade Anand Sunil (018/35)	Population monitoring, biology and management of fruit flies, *Bactrocera* spp. infesting vegetable and fruit crops.	Dr. S. R. Kulkarni

Extension Activities

1) Meetings / Workshops on CROPSAP attended by University scientists

Sr. No.	Name of meetings / workshops	Venue	Date	Scientists
1	1st Steering Committee Meeting of CROPSAP 2018-19	Sakhar Sankul, Pune	11th April, 2018	Dr. S. R. Kulkarni Dr. S. T. Aghav
2	2nd Steering Committee Meeting of CROPSAP 2015-16	Sakhar Sankul, Pune	7th Sept., 2018	Dr. D. S. Pokharkar Dr. S. T. Aghav Dr. P. V. Patil

2) Field visits conducted under CROPSAP project

Scientists of MPKV, Rahuri visited the following places for pest monitoring and provided guidance to farmers and Agriculture Officers of State Government.

Sr. No.	Date	Place of visit	Crop	Pest incidence noticed	Scientists Visited	Remarks
1	23/08/2018	Momin Akhada (Rahuri)	Cotton	PBW	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
2	24/08/2018	Manglapur & Pravara Sangam (Newasa)	Cotton	PBW & Jassids	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
3	30/08/2018	Kasoda (Erandol)	Cotton	PBW	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
4	30/08/2018	Adgaon (Erandol)	Cotton	PBW & Jassids	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
5	30/08/2018	Adgaon (Erandol)	Pigeonpea	Spotted pod borer & Pod borer	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
6	30/08/2018	Kothali (Bhadgaon)	Cotton	PBW	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
7	30/08/2018	Kothali (Bhadgaon)	Soybean	Spodoptera & Semilooper	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
8	31/08/2018	Lauki (Shirpur)	Cotton	PBW & Chaffer beetle	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
9	31/08/2018	Kalamsare (Shirpur)	Cotton	PBW & Chaffer beetle	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
10	01/09/2018	Ranjani (Talode)	Cotton	PBW, Chaffer beetle & Stem weevil	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
11	01/09/2018	Pratapur (Talode)	Cotton	PBW & Chaffer beetle	Dr. D. S. Pokharkar, Dr. S. T. Aghav	Pest population found near ETL

					Dr. P. V. Patil	
12	12/10/2018	Vadgaon (Maval)	Rice	YSB & Gall midge	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL
13	15/12/2018	Kolhapur Karad	Sugarcane & Maize	Fall armyworm	Dr. D. S. Pokharkar, Dr. P. V. Patil	Pest population found near ETL
14	15/01/2019	Rahata and Sangamner	Gram	Wilt & Gram pod borer	Dr. D. S. Pokharkar, Dr. S. T. Aghav Dr. P. V. Patil	Pest population found near ETL

Achievements of Students of Agricultural Entomology Department

Sr. No	Particulars		
A.	**ARS, NET /RF Examination qualified**		
1.	Mr. Guru P.N. (Ph.D.AG. 015/39)	ARS Mains qualified and Selected	2017
2.	Mr. Patil P. V. (Ph.D.AG. 015/38)	NET	2017
3.	Mr. Chavan D.M. (PH.D.AG/016/31)	NET	2017
4.	Mr. Shinde V.M.	NET	2017
5.	Mr. Gote G.N. (PH.D.AG/016/31)	NET	2017
6.	Miss Sweta Nevagi (16/140)	NET	2018
7.	Miss Sale Kaweri (16/141)	NET	2018
8.	Miss Kiran Mukade (16/143)	NET	2018

B.	**Convocation Awards**	
	1.	**Miss. Gurve Swati Sahebrao [Ph.D.(Agri.)]**
		1. University Topper in Plant Protection Group : Gold Medal & Certificate.
	2.	**Miss. Boraste Arati Anandrao [M.Sc.(Agri.)]**
		1. Shri. Laxminarayan Biharilal Bihani, Rahuri "Gold Medal" : Standing First in the University at the B. Sc. (Agri.) examination.
		2. Late Vasantdada Patil "Gold Medal" : Standing First in the University at the B. Sc. (Agri.) examination
		3. "ASPEE GOLD MEDAL" : Highest combined marks in the subjects of Agril. Entomology and Pl. Pathology at the B. Sc. (Agri.) Examination.
		4. Late Madhavrao Balvantrao Pawar cash prize of Rs. 4500/- : Securing highest grade point in Agril. Extention.

		5. Late G. B. Deshmukh cash prize of Rs. 3000/- : Standing First in the University at the B. Sc. (Agri.) examination.
		6. Smt. Radhabai Sooriajeerao Pawar "Silver Medal" towards highest number of grade point in Agronomy.
		7. Late P. P. Chabria Finolex Award for excellence in Agril. Education first rank cash prize Rs. 10,000/- with a Gold medal.
		8. Dr. M.M. Kibe memorial award of cash prize Rs. 712/- towards student securing highest number of marks OR highest CGPA.
		9. Smt. Kamalabai Patil Award of cash prize Rs. 100/- for securing maximum CGPA in extension education.
		10. Shri. Dhondiram Bapu Mali Freedom Fighter's award of cash prize Rs. 450/- towards student securing highest combined marks at the B./Sc. (Agri.) examination.

Achievements of Staff

1) **Dr. C. S. Patil**, Associate Professor of Entomology awarded **ICAR BEST TEACHER** award for the **Year 2018-19** at PGI, MPKV Rahuri.

2) **Dr. S. R. Kulkarni** Associate Professor of Entomology received "**Dalimb Ratna-2017"** (National Award) from All Maharashtra Pomegranate Association, Pune for the year 2017.

Research Achievements

1. Pesticide Residue Laboratory was accredited since 26/11/2014 in accordance with ISO/IEC 17025: 2005 by National Accreditation Board for Testing and Calibration of Laboratories (NABL), a Constituent Board of Quality Council of India, Govt. of India, New Delhi.

2. The main mandate of the research project is to study the dissipation of pesticides in crops through supervised trials by following Good Agril. Practices. The data thus generated forms the basis for determining MRL and safe waiting period which are national recommendations (9 Recommendations of CIBRC) for producing residue free Agril. Commodities.

Publications

S. N.	Title of Research Article	NAAS Rating
1	Pashte, V.V. and C. S. Patil (2017) Toxicity and poisoning symptoms of selected insecticides to honey bees (*Apis mellifera* L.), Archives of Biological Sciences Vol. 1(00): 20-40(1-20)	6.37
2	Pashte, V.V. and C. S. Patil (2017) Evaluation of persistence of insecticide toxicity in honey bees (*Apis mellifera* L.), Indian Journal of Biochemistry & Biophysics Vol. 54 June-August: 150-155	6.39
3	Mayannavar, M. U., Patil, C. S., Deore, B. V., Landge, S. A. and P. N. Guru (2017) Persistence of acephate and cypermethrin in/on okra and cropped soil, Journal of Pharmacognosy and Phytochemistry, 6(6): 2278-2282	5.21
4	Pawar, M.A. and C. S. Patil (2018) Relative toxicity of imidacloprid to *Aphis gossypii* Glover and *Amrasca biguttula biguttula* Ischida infesting okra, Journal of Entomology and Zoology Studies Vol. 6(1): 918-923	5.53
5	Pawar, M.A., Patil, C. S. and P. N. Guru (2018) Evaluation of efficacy of neonicotinoids against *A. gossypii* G. and *A. buguttulla biguttula* Ishida. infesting okra, Journal of Pharmacognosy and Phytochemistry Vol. 7(1): 346-350	5.21
6	Guru P. N. and C. S. Patil (2018) Dissipation studies of triazophos in/on polyhouse grown capsicum and cropped soil, Journal of Entomology and Zoology Studies Vol. 6(1): 12-16	5.53
7	Patil L. B. and C. S.Patil (2018) Bioefficacy of insecticides against onion thrips, (*Thrips tabaci* Lindeman), Journal of Pharmacognosy and Phytochemistry Vol. 7(1): 958-961	5.21
8	Patil,R.V., Patil, C. S. and P. N. Guru (2018) Dissipation and persistence of triazophos in/on brinjal, Journal of Pharmacognosy and Phytochemistry Vol. 7(2) :621-623	5.21
9	Guru, P.N. and C. S. Patil (2018) Efficacy of combination product Flubendiamide 240 + Thiccloprid 240 (Belt Expert 480 SC)against chilli fruit borers, Journal of Entomology and Zoology Studies Vol. 6(4) 616-620	5.53

10	Sawant C. G. and C. S. Patil (2018) Bio-efficacy of newer insecticides against diamondback moth (*Plutella xylostella* Linn.) in cabbage at farmers field, International Journal of Current Microbiology and Applied Sciences Vol. 7(7):2986-2998	5.38
11	Tamboli, N. D., Patil, C. S. and A. B.Tambe (2018) Efficacy of combination of biopesticides against *Spodoptera litura*(Fabricius) infesting lucerne, *Medicago sativa* (Linnaeus), International Journal of Agricultural Science Vol. 10(21)7488-7490	6.23
12	Patil, R. V., Patil, C. S. and B. V. Deore (2018) Decontamination of profenophos and triazophos in/on brinjal, Journal of Pharmacognosy and Phytochemistry, 7(1): 2094-2097	5.21
13	Deore BV, Patil CS, Saindane YS and Landge SA (2018) Dissipation and persistence of acephate, triazophos and profenophos in/on brinjal, Journal of Pharmacognosy and Phytochemistry, 7(2): 1528-1531	5.21
14	Patil, C. S., Landge, S. A., Saindane Y. S. and B. V. Deore (2018) Dissipation pattern of trifloxystrobin 25 % + tebuconazole 50 % WG (Nativo 75 % WG) on cowpea and soil from Western Maharashtra, International Journal of Chemical Studies, 6(2):2907-2912.	5.31
15	Patil, C. S., Deore, B. V., Saindane Y. S. and S. A. Landge (2018) Dissipation and persistence of certain organophosphorus insecticides in/on okra, International Journal of Chemical Studies, 6(3):355-358	5.31
16	Patil, C. S., Landge, S. A., Saindane Y. S. and B.V. Deore (2018) Residues and Dissipation of Deltamethrin 10 EC in/on Onion and Cropped Soil, International Journal of Current Microbiology and Applied Sciences. Vol 7 (6) : 177-181	5.38
17	Saindane, Y. S., Patil, C. S. and B. V. Deore (2018) Persistence of quinalphos and ethion in/on brinjal. Journal of Pharmacognosy and Phytochemistry, 7(5): 1096-1099	5.21
18	Deore, B. V., Patil C. S. and Y. S. Saindane (2018) Persistence and dissipation of forchlorfenuron residues in soybean, International Journal of Chemical Studies, 6(3):665-667	5.31
19	Saindane, Y.S. Patil C. S. and B. V. Deore (2018) Dissipation and persistence of oxadiargyl 80% WP in/on onion, *Pesticide Research Journal* Vol. 30 (2): 256-260	5.90
20	Patil, C. S., Landge, S. A., Saindane Y. S. and B. V. Deore (2018) Dissipation and persistence of trifloxystrobin + tebuconazole (Nativo 75 WG) on pomegranate and soil from Western Maharashtra, *Pesticide Research Journal* Vol. 30 (2): 183-187	5.90

21	Sunil Joshi, R.S.Ramya, Omprakash Navik, S.A.Pawar, U.B.Hole and A.B.Tambe.2019. Redescription of *Pulvinaria indica* Avasthi & Shafee, 1985(Hemiptera:Coccomorpha:Coccidae)with new host and distribution records. *Zootaxa* 4545 (1): 133-138	6.97
22	C. S. Chaudhari,R. L. Naik,B. L. Chaudhari,D. M. Firke and D. S. Pokharkar.2016. Mass production of *Nomuraea rileyi* and influence of food grains on its pathogenecity, *Indian J. Entomology*, 78(4):310-313	5.89
23	C. S. Chaudhari, D. S. Pokharkar, B. L. Chaudhari and D. M. Firke. 2017. Compatibility of insecticides with entomopathogenic *Nomuraea rileyi* against tobacco caterpillar, *Spodoptera litura* (F.), *Indian J. Entomology*, 79(1):37-40	5.89
24	R. D. Tumbada, D. S. Pokharkar and R.V. Datkhile. 2018. Efficacy of entomopathogenic fungi against mango hoppers. *J. Pharmac. Phytochemistry*, 7(2): 3198-3202	5.21

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