



**HORTICULTURAL RESEARCH STATION
TAMIL NADU AGRICULTURAL UNIVERSITY
KODAIKANAL POST
DINDIGUL DISTRICT, PIN CODE:- 624 103.**

ANNUAL REPORT, 2018 - 2019

**One to Two pages write up about the new initiatives and achievements during 2018-19
(Both Tamil and English)**

Table 1. Seminar/Trainings/Conference Organized by directorate during 2018-19

S.No	Title of the Seminar/Training	Sponsor	Budget	Period (Duration)	Category of Participants	Number of Participants
1.	Improved cultivation techniques in Garlic	GOI-MIDH	Rs.70,000	1 day	Farmers	100

Table 2. Important Visitors to the directorate during 2018-19

S.No	Date	Name and Designation of the Visitor	Country	Department /College Visited	Purpose
1.	06.02.18	Dr.D.V.Thatham Former Dean HC&RI, Coimbatore	India	HRS, Kodaikanal	To get information on research activities of the station
2.	06.02.18	Dr.V.A.Parthasarathy Ex-Director, IISR(ICAR) Calicut	India	HRS, Kodaikanal	To get information on research activities of the station
3.	21.04.18	Dr.N.K.Sudeep Kumar DEE, TANUVAS, Chennai-51	India	HRS, Kodaikanal	To get information on research activities of the station
4.	21.04.18	Dr.Y.G.Prasad Director, ICAR-ATARI, Hyderabad	India	HRS, Kodaikanal	To get information on research activities of the station
5.	13.05.19	Dr.N.Kumar Vice-Chancellor, TNAU, Coimbatore	India	HRS, Kodaikanal	To review the activities of the station

Table 3. Inputs Produced and Laboratory services provided by the Directorate during 2018-19

S.No	Name of the Input	Qty	Value
1.	Apple grafts	649 no.s	81125
2.	Pear grafts	188 no.s	8720
3.	Peach grafts	107 no.s	4320
4.	Plum grafts	79 no.s	5925
5.	Kiwi plants	430 no.s	2150
6.	Ornamental, Medicinal and Ornamental plants	223 no.s	5865
7.	Eucalyptus Oil	9.70 litres	12900

Table 4. Seed Production by directorate during 2018-19

S.No	Breeder Seed			S.No	Foundation Seed			Truthfully labeled seed			
	Crop	Qty	Value		Crop	Qty	Value	S.No	Crop	Qty	Value
	Rice	--	--		Tomato	--	--		--	--	--
	Sorghum				Brinjal						
	Ragi				Chillies						
	Varagu				Bhendi						
	Thenai				Onion						
	Samai				Ridge gourd						
	Varagu				Ash Gourd						
	Panivaragu				Snake gourd						
	Kuthiraivali				Clusterbean						
	Maize				Pumpkin						
	Red gram				Amaranthus						

	Green gram				A.Moringa					
	Black gram				Veg.Cowpea					
	Cow pea				Lab Lab					
	Horse gram									
	Mothbean									
	Fodder Sorghum									
	Cotton									
	Groundnut									
	Gingelly									
	Castor									
	Desmanthus									
	Lucerne									

Table 5. Foreign Visits by the Scientists of the directorates during 2018-19

S.No	Date	Name of the scientist	Designation and Affiliation	Place of Visit	Purpose of Visit
1.	--	--	--	--	--

Table 6. Patents Filed /Granted to the directorate during 2018-19

S.No	Name of the Innovation	Scientist & Department	Date Filing/Grant
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Table 7. Award received by the Scientists of the directorate during 2018-19

S.No	Date of Award	Name of the Award	Name of the Scientist and Designation	Department/Unit	Awarding Organization	Cash Award/Plaque/Certificate*
1.	01.06.19	Bagged the special prize 'Best Government Stall Award' for exhibiting 80 commercially important and underexploited temperate horticultural crops on the eve of the 58 th Flower Show conducted by the from 30.5.19 to 1.6.19	Dr.I.Muthuvel Associate Professor&Head Dr.M.I.Manivannan Assistant Professor(Hort.)	HRS, Kodaikanal	Department of Horticulture, Kodaikanal	Certificate
2	24.08.19	Awarded "PROFESSOR MS SWAMINATION BEST SCIENTIST AWARD 2018-19" on the Occasion of 9 th National Conference on Natural Sciences held on 24 th August 2019 at Pushkaram College of Agriculture Sciences,	Dr. I. Muthuvel Associate Professor & Head	HRS, Kodaikanal	Bose Science Society, Govt. of India, New Delhi.	Certificate and Shield

		Pudukkottai, Tamil Nadu, India organized by Bose Science Society, Department of Science & Technology, Govt. of India, New Delhi.				
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Table 8. Trainings/Conference attended by Scientists of the directorate during 2018-19

S. No	Name of the Training/Conference	Name of the Scientist	Date of the Event (From.. To..)	Organizers	Host Institution & Place
Conferences/Seminars					
International					
01	International Conference on “Biocontrol and Sustainable Pest Control Management”	Dr.M.I.Manivannan Assistant Professor(Hort.)	29.01.18 to 31.01.18	Department of Entomology, AC&RI, Killikulam	AC&RI, Killikulam
National					
1.	Participated in National Workshop on “ Protoplasmic Fusion Technology for Strain Improvement in Mushrooms ”	Dr. I. Muthuvel	01.10.2019	Department of Plant Pathology, CPPS, TNAU, Coimbatore	TNAU, Coimbatore
2	Participated in National Workshop on “ Antimicrobial ”	Dr. I. Muthuvel	01.10.2019	Department of Plant Pathology, CPPS, TNAU, Coimbatore	TNAU, Coimbatore

	Biomolecules for plant Health”				
3	Participated in National Workshop on “ Techniques on Oyster Mushroom Production ”	Dr. I. Muthuvel	01.10.2019	organized by Department of Plant Pathology, CPPS	TNAU, Coimbatore
4	Participated in National Workshop on “ Skill Empowerment on Milky Mushroom Production Technology ”	Dr. I. Muthuvel	01.10.2019	Department of Plant Pathology, CPPS, TNAU, Coimbatore	TNAU, Coimbatore
5	Participated in “ National Seminar on Mushroom – Rise of Research and Retreats for Humanity ” on 30.09.2019 at Department of Plant Pathology, CPPS, TNAU, Coimbatore	Dr. I. Muthuvel	30.09.2019	Department of Plant Pathology, CPPS, TNAU, Coimbatore	TNAU, Coimbatore
6	Successfully completed 5 weeks online FDP (2-week equivalent – 80 hours of active engagement) on “Courseware creation using Moodle” as a part of 8-week online FDP “Courseware	Dr. I. Muthuvel	08.07.2019 to 05.09.2019	Department of ECE under the aegis of Human Resource Development Centre (HRDC), Integral University, Lucknow.	Online Course

	<p>Creation using Moodle for Outcome based Education” in the duration of 08 July - 05 September 2019 as a Participant conducted by department of ECE under the aegis of Human Resource Development Centre (HRDC), Integral University, Lucknow.</p>				
7	<p>Participated in Fourth Fourth “National Conference on Agricultural Scientific Tamil” held at IFPGS, TNJFU, OMR Campus, Chennai</p>	Dr. I. Muthuvel	19.11.18 to 20.11.2018	ASTS, New Delhi	IFPGS, TNJFU, OMR Campus, Chennai
Trainings					
International					
1.	<p>“Transformation of Agricultural education through knowledge management and capacity development for more effective agricultural</p>	Dr.I.Muthuvel Associate Professor & Head	22.01.19 to 25.01.19	TNAU, Coimbatore and Asia Pacific Association of Agricultural Research Institutes(APAARI), Bangkok	TNAU, Coimbatore

	innovation system(AIS)”				
National					
1.	Biotic and Abiotic resistance breeding strategies in vegetable crops	Dr.M.I.Manivannan	03.12.18 to 12.12.18	ICAR sponsored short course organized by Department of Vegetable Crops,	HC&RI, Coimbatore
State					
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Table 9. Publications of the Scientists during 2018-19

S.No	Category	Publication Details* (in English)	Publication Details* (in Tamil)	NAAS Score	Scopus/Web of Science Listing
A.	Books with ISBN only (Indicate ISBN Number)				
1	Muthuvel I. , S. Eswaran, T. Prabhu, K. Shoba thingalmaniyan and J.E.Adlin Vinilla 2018.	--	Thottappayiriyal in Tamil Published by Agricultural Scientific Tamil Society, New Delhi (ISBN: 978-81-940349-1-9)	-	-
B.	Books without ISBN only				
1.	Rajangam., V.Swaminathan, I.Muthuvel , C.Subesh, R.Balakumbahan, T.Anitha, I.sekar and K.Vigneshwari(2018)	TANII-Project Ultra high density orcharding and modern method of fruit cultivation-compilation report. Published by HC&RI, Periyakulam	--	--	--
C.	Chapters in Books with ISBN only (Indicate ISBN Number)				
1.	Sekar, C. and I.Muthuvel 2018	An overview of precision farming technologies. In: Economics of precision farming written by C.Sekhar and A.Vidyavathi. Published by MJB Publishers, Chennai pg 1-22 ISBN 978- 81-8094-359-1	--	--	--
2.	Muthuvel,I and C.Sekhar 2018.	Techniques of Precision farming. Written by C.Sekhar and A.Vidyavathi. Published by MJB Publishers, Chennai pg 47 -96 ISBN 978- 81-8094-359-1	--	--	--
D.	Articles in journals				

1.	Ravindran C, Rajangam, J., Palanisamy A and Kavitha, M., Muthuvel, I Anita, A., Prabhakaran, K, Srinivasan, G and Murugesan, P.M. 2016.	Screening of banana cultivars for rope production. <i>International Journal of Tropical Agriculture</i> 34(5): 1371-1376	--	5.38	--
2.	Kanmani V., I. Muthuvel, S. Srivignesh, K. S. Subramanian, G. J. Janavi, J. Alan Sullivan, G. Paliyath and S. Jayasankar (2018)	Post harvest dip of enhanced freshness formulation to extend the shelf life of banana (Musa acuminata cv. Grand Naine. <i>Tropical Agriculture</i> vo.95Special Issue 1: page 1-13	--	4.54	--
3.	Mutharasu P., M. Kavino, I. Muthuvel, KS. Subramanian and K. Venkatesan (2018)	Study on changes in ultra structure of banana cv. Grand Naine during ripening. <i>Journal of Agriculture and Ecology</i> (2018) 6: 17 – 21.	--	5.32	--
4.	Anusuya P., I. Muthuvel, J. Rajangam and K. Venkatesan 2019.	Influence of preharvest chemical treatments on physio-chemical characteristics and shelf-life of Sapota (Manilkara achras (Mill.) Forsberg.). <i>International Journal of Chemical Studies</i> 2019; 7(3): 2500 – 2503.	--	5.38	--
5.	Gummadi Sreekavya, I.	Comparative study on	--	5.31	----

	Muthuvel, J. Rajangam and S. Prabhu (2019)	Histopathological Changes caused by <i>Meloidogyne enterolobii</i> in <i>Psidium gujava</i> and <i>Psidium cattleianum</i> Guava species. <i>Int. J. Curr. Microbiol. App. Sci.</i> (2019) 8 (5):2198 – 2203			
6.	Gummadi Sreekavya, I. Muthuvel, J. Rajangam and S. Prabhu (2019).	Biochemical profiling to identify resistant guava varieties against <i>Meloidogyne enterolobii</i> . <i>Journal of Pharmacognosy and Phytochemistry</i> 2019; 8(3): 3442 -3449.	--	5.52	--
7.	Tamilzhelvam, U., I.Muthuvel and A.Subbiah(2018)	Effect of temperature on shelf life of Muscat Hamburg grapes under storage. <i>Madras Agricultural Journal.</i> , 105(7-9):426-429	--	3.98	--
8.	Muthuvel, I., S. Srivignesh, P. Mutharasu, M. Kavino and K. S. Subramanian 2019.	Self life Extension of banana (<i>Musa spp.</i>) using Hexanal Formulation as a Post Harvest Dip.	--	5.32	--
9.	Manivannan, M.I. and Irulandi, S. (2018)	Assessment of integrated nutrient management in okra hybrid COBH H-1 <i>The Asian Journal of</i>	--	3.98	--

		<i>Horticulture</i> Vol.13 Issue 1 June 2018 pg-22.			
10.	Gayathri, S., Geetha, B., Abdul Razak, T. and Manivannan, M.I. (2019)	Evaluation of Biorational Pesticides for Management of Shoot and Fruit Borer (<i>Leucinodes orbonalis</i> G.) in Brinjal. <i>International Journal of Current Microbiology and Applied Sciences</i> (2019) Vol.8 (6):1-5.	--	5.3	--
11.	Dominic Manoj, P. Ravi, G. Sithanatham, S. Elanchezhyan, K. and Manivannan, M.I. (2019)	Validations of pheromone trap designs for the management of brinjal shoot and fruit borer, <i>Leucinodes orbonalis</i> (Crambidae: Lepidoptera). <i>Journal of Agriculture and Ecology</i> (2019) 8:70-74.	--	5.3	--
12.	Irulandi,S., M.I.Manivannan and A. Ravikumar 2018.	Bioecology and management of the banana skipper, <i>Erionota thrax</i> L. (HeSperiidae. Lepidoptera. <i>Journal of Entomology and Zoology Studies</i> , 6(2): 262 – 265	--	4.54	--
13	,Ushz;o/ R./ k.,, kzptz;zd;/ M. , utpf;Fkhh;/ m. nrhiykiy kw;Wk; b\$. ,uh\$h';fk;. 2018. ,";rpapy; fpH';F < kw;Wk; fpH';F mGfy; neha; fl;Lg;ghL.	3 rd National Tamil conference of Agricultural sciences, 10 th October, 2018. Orgaintel by Krishna College	--	--	--

		of Agricultural Technology (KRIST), Vsilampatti, Madurai District, Tamil Nadu, 351 –354pp			
E.	Abstracts in seminars				
1.	Irulandi,S., Manivannan, M.I. and J. Rajangam. 2018. Biointensive management of shoot and fruit borer, <i>Leucinodes</i> <i>orbonalis</i> Guenee in brinjal.	International conference on bio- Control and sustainable Pest management (ICBS) from 29-31 January 2018			(ISBN: 978-93 – 81102 -46 – 6)
F.	Popular articles in Weeklies and Monthlies				
1.	Manivannan, M.I. and Arulmozhiyan, R. (2018).	--	Canopy management in mango <i>SPIC</i> <i>Pannai seithi</i> . Vol 4 Issue 2 June- July 2018 pg-24.	--	--
2.	M.I.Manivannan.	--	“Micro nutrient management in Banana” in <i>SPIC</i> <i>Pannaiseithi</i> Bi- monthly Volume 3 Issue 6 page 11- 13.	--	--