



St. Xavier's College (Autonomous)

(Recognized as "College with Potential for Excellence" by UGC & Accredited at A⁺⁺ grade with CGPA of 3.66/4 in IV Cycle by NAAC)

Palayamkottai – 627 002

ANNUAL REPORT 2023-2024

RESEARCH CENTRES

XAVIER RESEARCH FOUNDATION

1. The Xavier Research Foundation (XRF) is one of the novel initiatives of St. Xavier's College management to promote Interdisciplinary research, publication, and extension activities. It is a research centre of eminence to promote cutting-edge pursuits to solve people's problems and protect the environment. A director, three scientists, two emeritus scientists, six project fellows and research scholars, and a technical assistant are working full time at XRF. XRF is recognized by M.S. University as an Interdisciplinary Research Centre. **(MSU/RES/R4/IRC/2021)**.
2. Currently, XRF is running six major projects related to agro-tourism, organic agriculture, environmental awareness, and the promotion of herbal gardens in schools in Tirunelveli District. Additionally, it is involved in the documentation of medicines used in Varmam therapeutics by the non-institutionally trained Siddha practitioners of Southern Tamil Nadu and the isolation of soil actinomycetes collected from the Agasthiyamalai hills. Further, XRF is working on indigenous traditional herbal medicines for curing certain diseases based on rigorous scientific evaluation. XRF has also developed some natural products for controlling insects and pests.
3. In 2023 – 2024, XRF has published 26 research papers and granted two Indian patents.
4. The publication of the 'Flora of Tirunelveli Hills', a dream project of Fr. V.S. Manickam S.J., was completed. XRF has published three books: *Flora of Tirunelveli Hills, Monocotyledons, Vol. IV (text)*, *Flora of Tirunelveli Hills, Monocotyledons, Vol. IV (Figures)* and *The Works of Jesuits in India*.

5. XRF is helping many students to refer to the SXC herbarium and utilise its facilities for their research. Many PG students are doing their project work. The digitalization of herbarium is in progress.

TABLE.8.a . PAPERS PUBLISHED IN JOURNALS (2023.2024)

S. NO	Name of the Teacher	Name of the Department	Title of the Paper	Name of the Journal	Volume No/ Issue No/ Page No /year	ISSN No. / e.ISSN N No.	Cited in Web of Science / Scopus Indexed/UG C Approved / Not Found in UGC.CARE List	National / Internatio nal	Impact Factor	Month & Year of publicati on
1	Ganesan, Pathalam, Rajan Samuel, Subramanian Mutheeswaran, Perumal Pandikumar, Appadurai Daniel Reegan, Adeyemi Oladapo Aremu, and Savarimuthu Ignacimuthu.	Xavier Research Foundation	Phytocompounds for mosquito larvicidal activity and their modes of action: A review.	South African Journal of Botany	152 (2023)19.49	Online ISSN: 1727.9 321 Print ISSN: 0254.6 299	Scopus Indexed	Internation al	3.1	January 2023
2	Nayagam, Vasanth, Tamil Mullai Selvaraj, Joelri Michael Raj Lourdharajan, Anthony Samy, Savarimuthu	Xavier Research Foundation	The Biochemical Analysis and Characterization of Strobilanthes ciliatus Nees (Bremek): Leaf Extracts	Journal of Stress Physiology & Biochemistry	9, no. 4 (2023) 114.119	ISSN 1997.0 838	Scopus Indexed	Internation al	.	Nov 2023

	Ignacimuthu and Dons Thiraviadoss									
3	Maharajan, Theivanayagam, Thumadath Palayullaparambil Ajeesh Krishna, Kasinathan Rakkammal, Muthusamy Ramakrishnan, Stanislaus Antony Ceasar, Manikandan Ramesh, and Savarimuthu Ignacimuthu.	Xavier Research Foundation	Identification of QTL Associated with Agro.Morphological and Phosphorus Content Traits in Finger Millet under Differential Phosphorus Supply via Linkage Mapping.	Agriculture	13, no. 2 (2023)262	ISSN 2077.0472)	Scopus Indexed	International	3.6	January 2023
4	Maharajan, Theivanayagam, Thumadath Palayullaparambil Ajeesh Krishna, Stanislaus Antony Ceasar, and Savarimuthu Ignacimuthu.	Xavier Research Foundation	Zinc supply influenced the growth, yield, zinc content, and expression of ZIP family transporters in sorghum.	Planta	257, no. 2 (2023)44	ISSN: 1432.2048. Print ISSN: 0032.0935.	Scopus Indexed	International	4.5	January 2023
5	Samuel, Rajan, Ganesan	Xavier Research Foundation	Biocontrol efficacy of apigenin isolated from Anisomeles	Biocatalysis and Agricultural Biotechnology	48 (2023) 102637	ISSN 1878.8181	Scopus Indexed	International	4.0	March 2023

	Pathalam, Velmurugan Babu, Ragavendran Kamaraj, Mutheeswaran Subramanian, Stalin Antony, Nagul Kumar Sanmugapriya, Senthilkumarr Palaniswamy, and Savarimuthu Ignacimuthu.		indica (L.) Kuntze against immature stages of Culex quinquefasciatus (Say, 1823) and its in silico studies							
6	Cesar, S. Antony, and Savarimuthu Ignacimuthu.	Xavier Research Foundation	CRISPR/Cas genome editing in plants: Dawn of Agrobacterium transformation for recalcitrant and transgene-free plants for future crop breeding	Plant Physiology and Biochemistry	196 (2023) 724.730	ISSN 0981.9428	Scopus Indexed	International	5.4	February 2023
7	Riyaz, Muzafar, Rauf Ahmad Shah, Savarimuthu Ignacimuthu, and Kuppusamy	Xavier Research Foundation	Phylogenomics including the newly sequenced mitogenomes of two moths (Noctuoidea, Erebidae) reveals <i>Ischyja manlia</i> (incertae sedis) as a	Genetica	151, no. 2 (2023)105.118	ISSN 0016.6707	Scopus Indexed	International	4.5	January 2023

	Sivasankaran.		member of subfamily Erebiniae							
8	Mariselvam, R., S. Ignacimuthu, A. J. A. Ranjitsingh, Rajapandiyan Krishnamoorthy, and P. Mosae Selvakumar.	Xavier Research Foundation	Culture Method.Dependent Variation in the Sensitivity of Escherichia coli to Silver Nanoparticles	Advances in Materials Science and Engineering	2023 (2023)	ISSN 1687.8442	Scopus Indexed	International	2.0	April 2023
9	Kamatchi, Parthasarathy Arunachalam Chettiyar, Rajan Maheswaran, Subramaniyan Sivanandhan, Savarimuthu Ignacimuthu, Kedike Balakrishna, Appadurai Daniel Reegan, and Subramanian Arivoli.	Xavier Research Foundation	Bioefficacy of ursolic acid and its derivatives isolated from Catharanthus roseus (L) G. Don leaf against Aedes aegypti, Culex quinquefasciatus, and Anopheles stephensi larvae	Environmental Science and Pollution Research	30, no. 26 (2023) 69321.69329	ISSN 1614.7499	Scopus Indexed	International	5.8	May 2023
10	Riyaz, muzafar, and s. Ignacimuthu.	Xavier Research Foundation	Assessing ethno.veterinary practices in Kashmir Himalayas: Traditional knowledge and its	Nova Geodesia	3, no. 2 (2023)131.131	<u>ISSN</u> 2810.2754 <u>ISSN.L</u> 2810.2754			quarterly peer reviewed journal	June 2023

			role in animal healthcare							
11	Porchezhiyan, Vedapuri, Khansab Razak Deen, Mari Barani, Samraj Wilson, Perumal Pandikumar, Savarimuthu Ignacimuthu, Naiyf S. Alharbi, and Muthu Thiruvengadam.	Xavier Research Foundation	Comparing in vitro antiurolithic potential of <i>Orthosiphon aristatus</i> (Blume) Miq. var. <i>aristatus</i> and its local substitute, <i>Ocimum filamentosum</i> Forssk	Journal of Research in Siddha Medicine	6, no. 2 (2023)78.84	Online ISSN: 2582.1954	UGC care	National		July. December 2023
12	Ajeesh Krishna, T. P., T. Maharajan, S. Antony Ceasar, and S. Ignacimuthu.	Xavier Research Foundation	Zinc supply influences the root-specific traits with the expression of root architecture modulating genes in millets.	Journal of Soil Science and Plant Nutrition	(2023) 1.15.	Electronic ISSN 0718.9516 Print ISSN 0718.9508	Springer	International	3.6	August 2023
13	William Raja, Tharsius Raja, Veeramuthu Duraipandiyana, Savarimuthu Ignacimuthu, Udaiyappan	Xavier Research Foundation	Role of Polyphenols in Alleviating Alzheimer's Disease: A Review	Current Medicinal Chemistry	30, no. 35 (2023) 4032.4047	0929.8673 (print) 1875.533X (web)	Bentham Science	International	4.1	October, 2023

	Janakiraman, and Soosaimanickam M. Packiam.									
14	Vasanth, N., T. Dons, L. J. Michaelraj, P. Ganesan, S. H. Salmen, S. A. Alharbi, S. Mutheeswaran, M. Anthony samy, S. Ignacimuthu, and A. Stalin.	Xavier Research Foundation	Effect of biofilm formation and cytotoxicity of biogenic silver nanoparticles (AgNPs) synthesized from a medicinal plant Sterculia foetida L	Digest Journal of Nanomaterials & Biostructures (DJNB)	18, no. 4 (2023)	ISSN: 1842.3582	Scopus Indexed	International	0.899	October . December 2023
15	Riyaz, Muzafar, and Savarimuthu Ignacimuthu.	Xavier Research Foundation	Smart phone. macro lens setup (SPMLS): a low.cost and portable photography device for amateur taxonomists, biodiversity researchers, and citizen enthusiasts	Bulletin of the National Research Centre	47, no. 1 (2023)143	ISSN (1110.0591)	Scopus Indexed	International		October 2023
16	Shah, Rauf Ahmad, Muzafar Riyaz, Savarimuthu Ignacimuthu, and Kuppusamy	Xavier Research Foundation	Characterization and Molecular Phylogenetic Analysis of Subfamily Erebinæ (Lepidoptera: Noctuoidea: Erebidæ) Using Five	Biochemical Genetics	(2023) 1.29	Electronic ISSN 1573.4927 Print ISSN	Scopus Indexed	International	2.4	October 2023

	Sivasankaran.		Complete Mitochondrial Genomes			0006.2 928				
17	Kiriyanthan, Rose Mary, A. Radha, Perumal Pandikumar, Palavesam Azhahianambi, N. Madan, and Savarimuthu Ignacimuthu.	Xavier Research Foundation	Growth inhibitory effect of selected quinones from Indian medicinal plants against <i>Theileria annulata</i> ."	Experimental Parasitology	254 (2023) 108622	Print ISSN: 0014.4894 Online ISSN: 1090.2449	Scopus Indexed	International	2.1	November 2023
18	Ajeesh Krishna, T. P., T. Maharajan, S. Antony Ceasar, and S. Ignacimuthu.	Xavier Research Foundation	"Zinc supply influences the root-specific traits with the expression of root architecture modulating genes in millets."	Journal of Soil Science and Plant Nutrition	23, no. 4 (2023) 5527.5541	Electronic ISSN 0718.9516 Print ISSN 0718.9508	Scopus Indexed	International	3.9	August 2023
19	Nayagam, V., Ponnambalam, A., Michael Raj Lourdurajan, J., Samy, A. and Ignacimuthu, S., 2023	Xavier Research Foundation	.Cytotoxic properties (MDA.MB.231.an epithelial breast cancer cell line) and bactericidal activity of Silver nanoparticles mediated by <i>Strobilanthes ciliata</i> nees.	International Journal of Nano Dimension,	14(4), pp.356.365.	Print ISSN2 008.8868 Online ISSN2 228.5059	Scopus Indexed	International	1.5	October 2023
20	Riyaz, Muzafar, and	Xavier Research	First record of <i>Pyralis farinalis</i>	SHILAP Revista de lepidopterología	51, no. 204 (2023)	Electronic	Scopus Indexed	International		December 2023

	Savarimuthu Ignacimuthu.	Foundation	Linnaeus, 1758 from India (Pyrilidae: Pyralinae)		629.634	ISSN: 2340.4078 ISSN: 0300.5267				
21	Hillary, V. Edwin, S. Antony Ceasar, and S. Ignacimuthu.	Xavier Research Foundation	"Efficacy of plant products in controlling disease vector mosquitoes, a review."	Entomologia Experimentaliset Applicata		Online ISSN:1570.7458 Print ISSN:013.8703	Scopus Indexed	International	1.9	December 2023
22	Stalin, Antony, Pachaiyappan Saravana Kumar, Balakrishnan Senthamarai Kannan, Rajamanikam Saravanan, Savarimuthu Ignacimuthu, and Quan Zou.	Xavier Research Foundation	"Potential inhibition of SARS.CoV.2 infection and its mutation with the novel geldanamycin analogue: Ignaciomycin	Arabian Journal of Chemistry .	17, no. 2 (2024)105493	Print ISSN: 1878.5352 Online ISSN: 1878.5379	Scopus Indexed	International	6.0	February 2024
23	Muthukanagavel, Mariappan, Nayagam Vasanth, Jeyaraj Selvakumaran, Kamaraj	Xavier Research Foundation	"Mosquitocidal Susceptibility and Non.Target Effects of Tricholoma equestre Mushroom (Agaricomycetes) on the Immature Stages of Aedes aegypti,	International Journal of Medicinal Mushrooms	26 (2024).	ISSN Print: 1521.9437 ISSN Online: 1940.4	Scopus Indexed	International	1.7	January 2024

	Ragavendran, Mathalaimuthu Anthonyamy, Mutheeswaran Subramanian, Savarimuthu Ignacimuthu, Naiyf S. Alharbi, Muthu Thiruvengadam, and Pathalam Ganesan.		Anopheles stephensi and Culex quinquefasciatus."			344				
24	Hillary, V. Edwin, S. Antony Ceasar, and S. Ignacimuthu.	Xavier Research Foundation	"Efficacy of plant products in controlling disease vector mosquitoes, a review."	Entomologia Experimentalis et Applicata	(2024).	Online ISSN:1570.7458 Print ISSN:0013.8703	Scopus Indexed	International	1.9	December 2023
25	Ragavendran, Kamaraj, Jeyaraj Selvakumaran, Mariappan Muthukanagavel, Naiyf S. Alharbi, Muthu Thiruvengadam,	Xavier Research Foundation	"Chemical composition and mosquitocidal properties of essential oil from Indian indigenous plants Ocimum tenuiflorum L. and Ocimum americanum L. against three vector	Experimental Parasitology	(2024) 108709.	Print ISSN: 0014.4894 Online ISSN: 1090.2449	Scopus Indexed	International	2.1	January 2024

	Subramanian Mutheeswaran, Savarimuthu Ignacimuthu, and Pathalam Ganesan.		mosquitoes."							
26	Ragavendran, Kamaraj, Jeyaraj Selvakumaran, Mariappan MuthuKanagavel, Savarimuthu Ignacimuthu, Naiyf S. Alharbi, Muthu Thiruvengadam, Subramanian Mutheeswaran, and Pathalam Ganesan.	Xavier Research Foundation	"Effect of Mosquitocidal, histopathological alteration and non target effects of <i>Sigesbeckia orientalis</i> L. on <i>Anopheles stephensi</i> Liston, <i>Culex quinquefasciatus</i> say and <i>Aedes aegypti</i> L."	Veterinary Parasitology: Regional Studies and Reports	(2024): 100997.	Online ISSN: 2405.9390	Scopus Indexed	International	1.4	February 2024

TABLE 9 . BOOKS / BOOK CHAPTERS PUBLISHED (2023- 2024)

S. No	Name of the Teacher	Department	Title of the Books / Proceedings	Title of Book Chapters	Place, Publisher, Page No.	National / International	ISSN / ISBN No.	Month & Year of publication
1	V.S. Manickam, P. Pandikumar, S. Mutheeswaran, K. Uthayakumari and S. Ignacimuthu, 2022.. Bishen Singh Mahendra Pal Singh, Dehra Dun, Text P. 1.270;	Xavier Research Foundation	Flora of Tirunelveli Hills, Monocotyledons, Vol. IV.	2023 Bishen Singh Mahendra Pal Singh, Dehra Dun, 2022 P. No: 1.270;	National	ISBN: 978.93.93628 .36.7	2023	
2	V.S. Manickam, P. Pandikumar, S. Mutheeswaran, K. Uthayakumari and S. Ignacimuthu, 2022.. Bishen Singh Mahendra Pal Singh, Dehra Dun, Figures P. 1.300.	Xavier Research Foundation	Flora of Tirunelveli Hills, Monocotyledons, Vol. IV.	2023 Bishen Singh Mahendra Pal Singh, Dehra Dun, 2022 P. No: 1.302;	National	ISBN: 978.93.93628 .35.0	2023	
3	Fr Dr S. Ignacimuthu, SJ	Xavier Research Foundation	The Works Of Jesuits In India	2023 P. No 1.247 Gujarat Sahitya Prakash, Anand, Gujarat	National	ISSN 978.81.95783 6.9.4	2023	

TABLE 10 – MAJOR RESEARCH PROJECTS (2023.2024)

S. No	Name of the Teacher	Name of the Department	Title	Agency	Govt./ Non . Govt.	Amount (Rs.)	Grant Duration
1	Fr. Dr. S. Ignacimuthu, S.J.	Xavier Research Foundation	Training Students in Organic Farming and Sustainable Agriculture and Promoting agro.Tourism in Tamil Nadu	Jesuit Mission, Switzerland	Non. Govt	1,49,00,00.00	2021.2024
2	Dr S Mutheeswaran	Xavier Research Foundation	Promoting Awareness And Scientific Knowledge On Medicinal Plants Among Higher Secondary School Children In Tirunelveli District Of Tamil Nadu”	National Medicinal Plants Board	Govt	10,92,000.00	2022.2025
3	Fr. Dr. S. Ignacimuthu, S.J.	Xavier Research Foundation	Training Students To Be Agents Of Environmental Protection And Organic Farming	Jesuiten Weltweit Germany	Non. Govt	30,42,931.00	2022.2025
4	Fr. Dr. S. Ignacimuthu, S.J.	Xavier Research Foundation	Promoting Indigenous Traditional Herbal Medicines To Cure Some Diseases Based On Rigorous Scientific	Italian bishops’ conference (Committee for charitable intervention In favour of the world Rome, Italy)	Non. Govt	1,53,65,153.00	2022.2024

			Evaluation				
5	Dr P Pandikumar	Xavier Research Foundation	Quantitative Documentation of medicines used in Varmam therapeutics by the Non.Institutionally trained Siddha practitioners of Southern Tamil Nadu'	National Medicinal Plants Board	Govt	27,94,024.00	2023.2025
6	Dr P. Ganesan	Xavier Research Foundation	Biocontrol and non.target effects of secondary metabolites isolated from soil actinomycetes collected from Agasthiyamalai hills of the Western Ghats of Tirunelveli, Tamil Nadu, India.	Indian Council of Medical Research	Govt	34,99,362.00	2023.2026