CURRICULUM VITAE

Personal Details

Name	**Dr Milan Kumar Lal**
Designation	**Scientist (Plant Physiology)**
Address	*Division of Crop Physiology and Biochemistry* *ICAR-Nationa Rice Research Institute, Cuttack, (Odisha), India*
Email	*milan2925@gmail.com; milan.lal@icar.gov.in*
Cell No.	*+91-9718815448, +91-8368623943*
Research/Social media	**ORCID:** Milan Kumar Lal (0000-0002-2442-9640) (orcid.org) **Research Gate:** Milan Kumar Lal (researchgate.net) **Google Scholar:** Milan Kumar Lal - Google Scholar **Twitter**: https://twitter.com/milan2925
Citations	**2812**
H-Index	**30**
I-10 index	**69**

1.	**Date of Birth**	: 25th May 1989
2.	**Area of Specialization**	: Plant Physiology, Abiotic stress tolerance, Biotic stress, Drought, Heat, Salinity, Nutritional and Resistant Starch

3. EDUCATION

Year of completion 2016-2022	**PhD (Plant Physiology, Gold Medalist)**, Indian Agricultural Research Institute (IARI), New Delhi, India Thesis Title: Analysis of Glycemic Index and Associated Attributes in Potato Tubers ➢ Advisor: Dr. Madan Pal Singh, IARI, New Delhi ➢ Final Grade: 8.26/10 or 82.6%
2013-2015	**Master of Science (Plant Physiology)**, Indian Agricultural Research Institute (IARI), New Delhi, India ➢ Study emphases: Plant nutrition, Climate change, Abiotic stress ➢ Thesis title: Effect of High [CO_2] on Phosphorus Efficiency in Wheat Grown Under Phosphorus Stress with Different Sulphur Levels ➢ **Advisor**: Dr. Renu Pandey, Mineral Nutrition Lab, IARI, New Delhi ➢ Final Grade: 8.63/10 or 86.3%
2009-2013	**Bachelor of Science (Agriculture)**, Orissa University of Agriculture and Technology, College of Agriculture, Bhubaneswar, Odisha (India) ➢ Study emphases: Agricultural science, including crop production and its protection ➢ Final Grade: 8.18/10 or 81.8%

4. Professinal History

Period	Designation	Detail of work
02/07/2018-08/10/2018	Scientist	Posting at ICAR-NAARM, Hyderabad, for Foundation Course for Agricultural Research Service (FOCARS)
09/10/2018-15/12/2023	Scientist	He is an expert worker in the area of abiotic stress such as heat, drought salinity and heavy metal. Moreover, he is also working on the aspect of effect of biotic stress such as fungus, virus and bacteria on plant physiological, biochemical and molecular responses. Apart from this, he also has expertise in the nutritional and quality aspects of starchy crops, including resistant starch, glycemic index, phytonutrients, functional fermented foods and beverages, bioactive compounds, and various processing techniques to enhance these components in food products of starchy crops. He is the recipient of prestigious awards such as the Young Researcher Award, Best PhD Thesis Award, IARI PhD Merit Medal and RD Asana Gold Medal Award and IPA-Kaushalya Sikka Team Award. His findings have generated more than 120 publications in the international peer-reviewed journal.
18/12/2023-Till Date	Scientist	Presently working in the area of abiotic such as drought, heat stress and nutritional aspect of rice and other starchy crops at ICAR-National Rice Research Institute, Cuttack, India.

4. Publication

- Research and Review papers: 125
- Books: 5
- Popular articles: 31
- Technical Bulletins: 2
- Book chapters: 31
- E-publications: 10
- Gene accession number: 55
- Technology granted by ICAR: 2
- h-index: 30, i10-index: 69 with 2812 citations

4. Awards and Recognition

Sl No.	Year	Awards	Institute/University/ Professional socoety
1.	**2023**	**IPA-Kausalya Sikka Team Award**	Indian Potato Association, Shimla
2.	**2023**	**IARI PhD Merit Medal 2022**	ICAR-Indian Agricultural Research Institute, New Delhi
3.	**2023**	**R.D. Asana Gold Medal Award 2022**	Indian Society of Plant Physiology, New Delhi, India

4.	**2022**	**Best Thesis Award (Plant Physiology)**	Society of Agroecological Sustainability, Odisha
5.	**2021**	**Best Poster Award** on "Effect of Potato Apical Leaf Curl disease on Resistant starch and Glycemic index of Potato (Solanum tuberosum L." Presented in International Potato e-Conference 2021, ICAR-Central Potato Research Institute, Shimla, 23-26th November 2021	Indian Potao Association
6.	**2021**	**Best Poster Award** on "Standardization of a one-step reverse transcription recombinase polymerase amplification protocol for rapid and sensitive detection of potato virus X in potato." Presented in International Potato e-Conference 2021, ICAR-Central Potato Research Institute, Shimla, 23-26th November 2021	Indian Potao Association
7.	**2021**	**Best Oral Presentation Award** on "Vacuum inpregnation: A novel tool for development of ascorbic acid fortified potato and its products." Presented in International Potato e-Conference 2021, ICAR-Central Potato Research Institute, Shimla, 23-26th November 2021.	Indian Potao Association
8.	**2021**	**Best Poster Award** on "Morpho-molecular identification and characterization of potato dry rot caused by *Fusarium proliferatum* in India." Presented in International Potato e-Conference 2021, ICAR-Central Potato Research Institute, Shimla, 23-26th November 2021.	Indian Potao Association
9.	**2021**	**Best Oral Presentation** for research topic on "Effect of Fusarium dry rot on postharvest quality attributes of potato tubers" organized by Division of Plant Pathology, ICAR-IARI, New Delhi during August 18-20, 2021 at ICAR-Indian Agricultural Research Institute, New Delhi, India. Technical session 6: Postharvest quality, value addition, export and entrepreneurship.	Indian Phytopathology and ICAR-Indian Agricultural Research Institute, New Delhi
10.	**2021**	**Best Oral Presentation** for research topic "Glycemic Response of Starchy Crops: Postharvest factors affecting starch digestibility" presented at International Conference on "Postharvest Disease Management and Value Addition of Horticultural Crops" organized by Division of Plant Pathology, ICAR-IARI, New Delhi during August 18-20, 2021 at ICAR-Indian Agricultural Research Institute, New Delhi, India. Technical session 6: Postharvest quality, value addition, export and entrepreneurship.	Indian Phytopathology and ICAR-Indian Agricultural Research Institute, New Delhi
11.	**2021**	**Young Achiever Award (2021),** presented by Institute of Scholar, Bengaluru.	INSC
12.	**2020**	**Best Poster Award (1st Position)** for research paper "Potato as a bioenergy crop for fuel ethanol production: perspective and challenges" in the theme Potato Biotechnology and Omics at Global Potato Conclave- 2020, Gandhinagar Gujarat, India	Indian Potato Association
13.	**2020**	**Best Poster Award (3rd Position)** for research paper "Standardization of Protocol for *Chaetomium globosum* mediated synthesis of nanosilver and evaluation of its antifungal properties" in the theme "Potato Disease Management"	Indian Potato Association

14.	**2020**	**Dr. Mukhtar Singh Memorial Best Oral Presentation Award (2nd Position)** on "Genome-wide landscape of carotenoid biosynthesis pathway genes in potato" at Global Potato Conclave-2020, Gandhinagar Gujarat, India	Indian Potato Association
15.	**2020**	**Best Poster Award (3rd Position)** for research paper "Standardization of Protocol for Chaetomium globosum mediated synthesis of nanosilver and evaluation of its antifungal properties" in the theme "Potato Disease Management"	Indian Potato Association
16.	**2020**	**Best Poster Award (1st Position)** for research paper "Application of high throughput plant phenomics technique for potato" in the theme Post-Harvest Management and Value Addition at Global Potato Conclave- 2020, Gandhinagar Gujarat, India	Indian Potato Association
17.	**2018**	**All India Rank – 5th**, Agricultural Research Scientist examination-2016 conducted by Agricultural Scientists Recruitment Board, Ministry of Agriculture and Farmers Welfare, Government of India.	Agricultural Scientists Recruitment Board, Ministry of Agriculture and Farmers Welfare, Government of India.
18.	**2018**	**AIASA Gold Medal Award (2018)** presented by AIASA, New Delhi.	AIASA, New Delhi.
19.	**2017**	**Young Scientist Award (2017),** presented by AIASA, New Delhi.	AIASA, New Delhi
20.	**2016**	**Best Paper Presentation** at National Seminar on Plant Genomics and Biotechnology-2016, Bhubaneswar, India	Odisha University of Agriculture and Technology, Bhubaneswar
21.	**2016**	**Awarded with A+** grade in **Green Revolution Global Certification Program** by ICCE, sponsored by United Nations Framework Convention on Climate Change	United Nations Framework Convention on Climate Change
22.	**2016**	**All India Rank – 5th** in AICE-SRF(PGS)-2016	(Indian Council of Agricultural Research)
23.	**2015**	**Senior Research Fellowship**- ICAR-SRF-PGS-2016	(Indian Council of Agricultural Research)
24.	**2013**	**All India Rank – 5th,** All India Entrance Examination for Admission to Master Degree Programmes in Agriculture and Allied Sciences, ICAR- 2015	(Indian Council of Agricultural Research)
25.	**2013**	**Junior Research Fellowship – ICAR-JRF-PGS** (Indian Council of Agricultural Research)	(Indian Council of Agricultural Research)

DETAILS OF MEMBERSHIP

SN	Membership	Involvement in Profession Society	Society
1.	**Life Member**	Life Member, Indian Potato Association, ICAR-Central Potato Research Institute, Shimla, India	IPA, ICAR-Central Potato Research

			Institute, Shimla, India
2.	**Life Member**	Life Member, Indian Society of Plant Physiology, New Delhi, India	Indian Society of Plant Physiology, New Delhi, India
3.	**Honorary Life Member**	Honorary Life Member, Asian PGPR Society of Sustainable Agriculture, USA	Asian PGPR Society of Sustainable Agriculture, USA
4.	**Life Member**	Life Member, Association of Rice Worker (ARRW), ICAR-National Rice Research Institute, Cuttack, India	ICAR-National Rice Research Institute, Cuttack, India
5.	**Life Member**	Life Member, All India Agricultural Students Association, NASC Complex, New Delhi, India	All India Agricultural Students Association, NASC Complex, New Delhi
6.	**Life member**	Life Professional member of Institute of Scholars (InSc)	Institute of Scholar (InSc)
7.	**Councilor (Elected)**	Indian Potato Association, North Zone	Indian Potato Association, North Zone
8.	**Member**	Life member of the Society for Ecological Sustainability, Odisha	Society for Ecological Sustainability, Odisha

DETAILS OF EDITORSHIP IN INTERNATIONAL JOURNALS

SN	Editorial Position	Name of the Journal
1.	Associate Editor	Frontiers in Microbiology
2.	Associate Editor	Plant Physiology Report
3.	Academic Editor	PLOS ONE
4.	Guest Associate Editor	Scientia Horticulturae
5.	Guest Associate Editor	South African Journal of Botany
6.	Editorial Board	BMC Plant Biology
7.	Guest Associate Editor	Frontiers in Plant Science
8.	Guest Associate Editor	Frontiers in Agronomy
9.	Review Editor	Frontiers in Nutrition
10.	Guest Associate Editor	Horticulturae
11.	Review Editor	Frontiers in Genetics
12.	Review Editor	Frontiers in Plant Science

Best 20 publications

SN	Year	Authors, Year of publication, Title of the article etc	Journal Name	Citation Total	IF 2022	NAAS Rating (IF+6)
1.	**2021**	**Lal, M. K.,** Singh, B., Sharma, S., Singh, M. P., & Kumar, A. (2021). Glycemic index of starchy crops and factors affecting its digestibility: A review. Trends in Food Science and Technology, 111(6), 741–755. https://doi.org/10.1016/j.tifs.2021.02.067	*Trends in Food Science and Technology*	**101**	**16.002**	**20.00**
2.	**2020**	Thakur, N., Raigond, P., Singh, Y., Mishra, T., Singh, B., **Lal, M. K.,** & Dutt, S. (2020). Recent updates on bioaccessibility of phytonutrients. Trends in Food Science and Technology, 97, 366–380. https://doi.org/10.1016/j.tifs.2020.01.019	*Trends in Food Science and Technology*	**141**	**16.002**	**20.00**
3.	**2021**	**Lal, M. K.,** Tiwari, R. K., Kumar, R., Naga, K. C., Kumar, A., Singh, B., Raigond, P., Dutt, S., Chourasia, K. N., Kumar, D., Parmar, V., & Changan, S. S. (2021). Effect of potato apical leaf curl disease on glycemic index and resistant starch of potato (*Solanum tuberosum* L.) tubers. *Food Chemistry*, 359, 129939. https://doi.org/10.1016/j.foodchem.2021.129939	*Food Chemistry*	**52**	**9.231**	**15.23**
4.	**2023**	Kumar, R., **Lal, M. K.*,** Tiwari, R. K., Chourasia, K. N., Kumar, A., Kumar, R., Sharma, S., & Singh, B. (2023). Investigating the Interplay between Tomato Leaf Curl New Delhi Virus Infection, Starch Metabolism and Antioxidant Defence System in Potato (Solanum tuberosum L.). *Antioxidants*, *12*(7), 1447. **(*Corresponding author)** https://doi.org/10.3390/antiox12071447	*Antioxidants*	**3**	**7.0**	**13.0**
5.	**2023**	Devi, R., Sharma, E., Thakur, R., Lal, P., Kumar, A., Altaf, M. A., Singh, B., Tiwari, R. K., **Lal, M. K.***, & Kumar, R. (2023). Non-dairy prebiotics: Conceptual relevance with nutrigenomics and mechanistic understanding of the effects on human health. *Food Research International*, *170*, 112980. **(*Corresponding author)** https://doi.org/10.1016/J.FOODRES.2023.112980	*Food Research International*	**3**	**7.425**	**13.425**
6.	**2023**	Kumar, A., Dash, G. K., Sahoo, S. K., **Lal, M. K.,** Sahoo, U., Sah, R. P., Ngangkham, U., Kumar, S., Baig, M. J., Sharma, S., & Lenka, S. K. (2023). Phytic acid: a reservoir of phosphorus in seeds plays a dynamic role in plant and animal metabolism. *Phytochemistry Reviews 2023*, 1–24. https://doi.org/10.1007/S11101-023-09868-X	*Phytochemistry Reviews*	**5**	**7.741**	**13.74**
7.	**2023**	Mukherjee, P., Suriyakumar, P., Vanchinathan, S., Krishnan, V., **Lal, M. K**., Jha, P. K., Chinnusamy, V., Anand, A., & Prasad, P. V. V. (2023). Hydrogen Peroxide and GA3 Levels Regulate the High Night Temperature Response in Pistils of Wheat (Triticum aestivum L.). *Antioxidants 2023, Vol. 12, Page 342*,	*Antioxidants*	**4**	**7.68**	**13.68**

		12(2), 342. https://doi.org/10.3390/ANTIOX12020342				
8.	**2022**	Mishra, U. N., Jena, D., Sahu, C., Devi, R., Kumar, R., Jena, R., Irondi, E. A., Rout, S., Tiwari, R. K., **Lal, M. K.***, Baig, M. J., & Kumar, A. (2022). Nutrigenomics: An inimitable interaction amid genomics, nutrition and health. *Innovative Food Science & Emerging Technologies*, *82*, 103196. (***Corresponding author**) https://doi.org/10.1016/J.IFSET.2022.103196	*Innovative Food Science & Emerging Technologies*	**14**	**7.104**	**13.10**
9.	**2021**	Kumar, A., Singh, B., Raigond, P., Sahu, C., Mishra, U. N., Sharma, S., & **Lal, M. K.*** (2021). Phytic acid: Blessing in disguise, a prime compound required for both plant and human nutrition. Food Research International, 142, 110193. (***Corresponding author**) https://doi.org/10.1016/j.foodres.2021.110193	*Food Research International*	**105**	**7.425**	**13.43**
10.	**2023**	Kumar, R.; Kaundal, P.; Tiwari, R.K.; **Lal, M.K.***; Kumari, H.; Kumar, R.; Naga, K.C.; Kumar, A.; Singh, B.; Sagar, V.; Sharma, S. Development of Reverse Transcription Recombinase Polymerase Amplification (RT-RPA): A Methodology for Quick Diagnosis of Potato Leafroll Viral Disease in Potato. *Int. J. Mol. Sci.* **2023**, *24*, 2511. **(*Corresponding author)** https://doi.org/10.3390/ijms24032511	*International Journal of Molecular Sciences*	**22**	**6.21**	**12.21**
11.	**2022**	**Lal, M.K.*;** Sharma, E.; Tiwari, R.K.; Devi, R.; Mishra, U.N.; Thakur, R.; Gupta, R.; Dey, A.; Lal, P.; Kumar, A.; Altaf, M.A.; Sahu, D.N.; Kumar, R.; Singh, B.; Sahu, S.K. Nutrient-Mediated Perception and Signalling in Human Metabolism: A Perspective of Nutrigenomics. *Int. J. Mol. Sci.* **2022**, *23*, 11305. **(*Corresponding author**) https://doi.org/10.3390/ijms231911305	*International Journal of Molecular Sciences*	**12**	**6.21**	**12.21**
12.	**2022**	Kumar, D., **Lal, M. K.*,** Dutt, S., Raigond, P., Changan, S. S., Tiwari, R. K., Chourasia, K. N., Mangal, V., & Singh, B. (2022). Functional Fermented Probiotics, Prebiotics, and Synbiotics from Non-Dairy Products: A Perspective from Nutraceutical. In Molecular Nutrition and Food Research (p. 2101059). John Wiley & Sons, Ltd. (***Corresponding author**) https://doi.org/10.1002/mnfr.202101059	*Molecular Nutrition and Food Research*	**33**	**6.575**	**12.58**
13.	**2021**	Tiwari, R. K., Bashyal, B. M., Shanmugam, V., **Lal, M. K.,** Kumar, R., Sharma, S., Vinod, Gaikwad, K., Singh, B., & Aggarwal, R. (2021). Impact of Fusarium dry rot on physicochemical attributes of potato tubers during postharvest storage. Postharvest Biology and Technology, 181, 111638. https://doi.org/10.1016/j.postharvbio.2021.111638	*Postharvest Biology and Technology*	**43**	**6.751**	**12.75**

14.	**2020**	Singh, A., Raigond, P., **Lal, M. K.,** Singh, B., Thakur, N., Changan, S. S., Kumar, D., & Dutt, S. (2020). Effect of cooking methods on glycemic index and in vitro bioaccessibility of potato (*Solanum tuberosum* L.) carbohydrates. Lwt, 127, 109363. https://doi.org/10.1016/j.lwt.2020.109363	*LWT Food Science and Technology*	**37**	**6.056**	**12.06**
15.	**2023**	Tiwari, R.K.; **Lal, M.K.*;** Kumar, R.; Sharma, S.; Sagar, V.; Kumar, A.; Singh, B.; Aggarwal, R. Impact of *Fusarium* Infection on Potato Quality, Starch Digestibility, In Vitro Glycemic Response, and Resistant Starch Content. *J. Fungi* **2023**, *9*, 466. **(*Corresponding author)** https://doi.org/10.3390/jof9040466	*Journal of Fungi*	**7**	**5.72**	**11.72**
16.	**2023**	Sharma, E., **Lal, M. K**., Gulati, A., & Gulati, A. (2023). Biochemical Characterization of γ-Glutamyl Transpeptidase from Bacillus altitudinis IHB B1644 and Its Application in the Synthesis of l-Theanine. *Journal of Agricultural and Food Chemistry*. https://doi.org/10.1021/ACS.JAFC.3C00295	*Journal of Agricultural and Food Chemistry*	**3**	**5.90**	**11.90**
17.	**2023**	Lal, P., Tiwari, R. K., Behera, B., Yadav, M. R., Sharma, E., Altaf, M. A., Jena, R., Ahmad, A., Dey, A., Kumar, A., Singh, B., **Lal, M. K**.*, & Kumar, R. (2023). Exploring potato seed research: a bibliometric approach towards sustainable food security. *Frontiers in Sustainable Food Systems*, *7*, 1229272. **(*Corresponding author)** https://doi.org/10.3389/FSUFS.2023.1229272	*Frontiers in Sustainable Food Systems*	**2**	**5.01**	**11.01**
18.	**2022**	**Lal, M.K.*,** Tiwari, R.K., Jaiswal, A., Luthra, S.K., Singh, B., Kumar, S., Gopalakrishnan, S., Gaikwad, K., Kumar, A., Paul, V. and Singh, M.P., 2022. Combinatorial interactive effect of vegetable and condiments with potato on starch digestibility and estimated in vitro glycemic response. Journal of Food Measurement and Characterization, pp.1-13. **(*Corresponding author)** https://doi.org/10.1007/s11694-022-01354-w	*Journal of Food Measurement and Characterization*	**8**	**3.01**	**9.01**
19.	**2022**	**Lal, M.K**.*, Singh, B., Tiwari, R.K., Kumar, S., Gopalakrishnan, S., Gaikwad, K., Kumar, A., Paul, V. and Singh, M.P., 2022. Interactive Effect of Retrogradation and Addition of Pulses, Cooking Oil on Predicted Glycemic Index and Resistant Starch of Potato. *Starch□Stärke*, p.2100221. **(*Corresponding author)** https://doi.org/10.1002/star.202100221	*Starch□ Stärke,*	**11**	**2.688**	**8.69**
20.	**2022**	**Lal, M.K.,** Sharma, N., Adavi, S.B., Sharma, E., Altaf, M.A., Tiwari, R.K., Kumar, R., Kumar, A., Dey, A., Paul, V. and Singh, B., 2022. From source to sink: mechanistic insight of photoassimilates synthesis and partitioning under high temperature and elevated [CO_2]. Plant Molecular Biology, pp.1-20. https://doi.org/10.1007/s11103-022-01274-9	*Plant Molecular Biology*	**36**	**4.335**	**10.34**