Dr. LOVELY MAHAWAR M.Sc., Ph.D.

Assistant Professor
Department of Biotechnology,
AKS University, Satna, India
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Academic Qualifications

2014– 2019	Jai Narain Vyas University, India	**Ph. D. Botany** (Plant Biotechnology)
2011– 2013	Banasthali University, India	**M.Sc. Biotechnology** (Spl in Plant Biotechnology)
2008– 2011	Rani Durgawati University, India	**B.Sc. Biotechnology**

Employment History

July 2019 – Present	AKS University, Satna, India	Assistant Professor
Dec 2018 – June 2019	Mahila P.G Mahavidhyalaya, Jodhpur, India	Lecturer
Jan 2014 – Nov 2018	Jai Narain Vyas University, India	Research Scholar

Potential Reviewer in Journals

1. 3 Biotech (Springer)
2. Phyton, International Journal of Experimental Botany (Tech Science Press)
3. Vegetos, An International Journal of Plant Research and Biotechnology (Springer)

International/National Research Collaborations

Warsaw University of Life Sciences – SGGW, Poland

Umea University, Sweden

Defence Laboratory Jodhpur – Defence Research and Development Organisation, India

Arid Forest Research Institute, India

Banasthali University, India

Research Details

Publications: 08
Total citations: 94
H index: 06
i10 index: 05
RG Score: 11.28
ORCID Id: https://orcid.org/0000-0002-4501-4233
Scopus Id: https://www.scopus.com/authid/detail.uri?authorId=57195717263

Publication Details: 08 (Total Impact Factor: 17.228)

1. **Lovely Mahawar**, Robert Popek, Gyan Singh Shekhawat, Mohammed Nasser Alyemeni and Parvaiz Ahmad (2021). Exogenous hemin improves Cd^{2+} tolerance and remediation potential in *Vigna radiata* by intensifying the HO-1 mediated antioxidant defence system. **Scientific Reports,** 11: 2811. https://doi.org/10.1038/s41598-021-82391-1**. Impact factor 3.998.**

2. Khushboo Khator, **Lovely Mahawar** and Gyan Singh Shekhawat (2020). NaCl induced oxidative stress in legume crops of Indian Thar Desert: an insight in the cytoprotective role of HO 1, NO and antioxidants. **Physiology and Molecular Biology of Plants,** 26 (1): 51-62**. Impact factor 2.00.**

3. **Lovely Mahawar** and Gyan Singh Shekhawat (2019). *EsHO 1* mediated mitigation of NaCl induced oxidative stress and correlation between ROS, antioxidants and HO 1 in seedlings of *Eruca sativa*: Underutilized oil yielding crop of arid region. **Physiology and Molecular Biology of Plants,** 25 (4): 895-904**. Impact factor 2.00.**

4. Gyan Singh Shekhawat, Suman Parihar, **Lovely Mahawar**, Khushboo Khator and Neha Bulchandani (2019). Bilin metabolism in plants: Structure, function and Hemeoxygenase regulation of Bilin biosynthesis. **Encyclopedia of Life Sciences**. **DOI: 10.1002/9780470015902.a0028352**

5. **Lovely Mahawar**, Khushboo Khator and Gyan Singh Shekhawat (2018). Role of Proline in mitigating NaCl induced oxidative stress in *Eruca sativa* Miller: an

important oil yielding crop of Indian Thar Desert. **Vegetos: An International Journal of Plant Research & Biotechnology,** 31: 55-63**.**

6. **Lovely Mahawar** and Gyan Singh Shekhawat (2018). Haem oxygenase: a functionally diverse enzyme of photosynthetic organisms and its role in Phytochrome chromophore biosynthesis, cellular signalling and defence mechanisms. **Plant Cell and Environment,** 41: 483-500. **Impact factor 6.36.**

7. **Lovely Mahawar**, Rajesh Kumar and Gyan Singh Shekhawat (2018). Evaluation of Heme oxygenase 1 (HO 1) in Cd and Ni induced cytotoxicity and cross talk with ROS quenching enzymes in two to four leaf stage seedlings of *Vigna radiata*. **Protoplasma,** 255: 527-545. **Impact Factor 2.87.**

8. **Lovely Mahawar** and Gyan Singh Shekhawat (2016). Salt induce oxidative stress and its tolerance mechanism in Plant: Morphological, Biochemical and Molecular Perspective. **Biotech Today** Vol 6(2): 80-87.

Thesis Details

Doctoral

Title: Biochemical and Molecular Characerization of Heme oxygenase and its role in Plant defense and metabolism.

Supervisor: Prof. G. S. Shekhawat, Department of Botany, Jai Narain Vyas University, India.

Reviewers:

1. Prof. V.P. Singh, Department of Plant Science, M.J.P Rohilkhand University, India
2. Prof. A.K. Bhatnagar, Department of Botany, Delhi University, India

Master

Title: Isolation, screening and identification of heavy metal tolerant fungi from mangrove

Supervisor: Dr. Samir. R. Damare, Scientist C, National Institute of Oceanography, India.

Reviewer: Dr. Dipjyoti Chakraborty, Professor and Head, Department of Bioscience & Biotechnology, Banasthali University, India

Conference Presentation/Contribution: 10 (04 International + 06 National)

1. **Oral Presentation** on Exogenous hemin improves cadmium stress tolerance in mung bean seedlings via modulation of Heme oxygenase-1 signaling system -National

Conference on Emerging Trends in plant Science Research, Ravenshaw University, Cuttack, India. 2020.

Lovely Mahawar and G.S. Shekhawat.

2. **Poster Presentation** on Evaluation of Heme Oxygenase 1 activity as an antioxidant during Cd stress tolerance and its co-relation with Ascorbate Peroxidase in 2-4 leaf stage seedlings of *Eruca sativa*: An economically important crop of Indian Thar Desert - Indian International Science Festival 2019 – Young Scientists' Conference**.** Ministry of Science and Technology and Ministry of Earth Sciences. Kolkata, India. 2019.

   Lovely Mahawar and G.S. Shekhawat.

3. **Oral Presentation** on Heme oxygenase 1 mediated alleviation of Cd & Ni induced oxidative stress in one week old seedlings of *Vigna radiata* (L.) (*var. PDM 54*) - International Conference on Advances and Innovations in Biotechnology for Sustainable Development**.** AKS University, India. 2019.

   Lovely Mahawar and G.S. Shekhawat.

4. **Oral Presentation** on Cross talk between Ascorbate peroxidase and Heme oxygenase 1 activity during Cd stress tolerance in 2-4 leaf stage seedlings of *Eruca sativa* -National seminar on Current Trends and Advancement in Chemical, Physical and Life Sciences, Jai Narain Vyas University, India. 2019.

   Lovely Mahawar and G.S. Shekhawat.

5. **Poster presentation** on Role of Heme oxygenase 1 in ameliorating Cadmium induced oxidative stress in seedlings of *Eruca sativa*: An underutilized crop of Indian Thar Desert - 39th Annual meeting of Plant Tissue Culture Association, Arid Forest Research Institute, India. 2018.

   Lovely Mahawar and Gyan Singh Shekhawat.

6. **Poster presentation** on Heme oxygenase 1 mediated mitigation of NaCl induced oxidative stress in seedlings of *Eruca sativa*: an important oil yielding crop of Indian Thar Desert -National Conference on Basic Biology is the core of Biotechnology**,** Banasthali University, India. 2017

   Lovely Mahawar, Khushboo Khator, Robert Popek and G.S. Shekhawat.

7. **Oral Presentation** on Heme oxygenase 1 role in modifying antioxidant defense responses against cadmium induced oxidative stress in *Vigna radiata* (L.) - International

Conference on Molecular Biology of Stress Responses in Phototrophs (MBSR-2016)" Indira Gandhi National Tribal University (IGNTU), India. 2016.

Lovely Mahawar and Gyan Singh Shekhawat.

8. **Oral Presentation** on *In vitro* evaluation of Hemeoxygenase-1(HO-1) in seedlings of *Vigna radiata* (L.) under salinity stress - International Conference on Biotechnology and Nanotechnology (ICBN 2016), IIS University, India. 2016.

   Lovely Mahawar and Gyan Singh Shekhawat.
9. Participated in the 84th Annual Session of the NASI" on "Desert science- opportunities and challenges, Jai Narain Vyas University, India. 4th - 6th Dec 2014.
10. Participated in the Biotech 2012 conference on Current Advances in Biotechnology and Medicine, Institute of Liver and Bilary sciences, India. 24th - 25th Feb 2012.

Training / Workshops

1. Workshop on Research Methodology and Application of Statistics by SPSS at Jai Narain Vyas University, India. 8th - 9th Feb 2016.
2. Training on Computer Graphics and Networking at Jai Narain Vyas University, India. 10th - 14th Feb 2014.
3. Training on Techniques in Molecular Biology at Animal Biotechnology centre, Jawaharlal Nehru Krishi Vishwavidhyalaya, India. 1st - 30th June 2012.
4. Training on Forest Biotechnology at Tropical Forest Research Institute, India. 2nd - 6th Aug 2010.

Honor/Awards

1. **Dr. R.P.S Dhakarey Memorial Young Researcher Award** in International Conference on Advances and Innovations in Biotechnology for Sustainable Development, AKS University, India. 2019.

2. **Prof. Prasanna Mohanty memorial award for Best Oral Presentation** in International Conference on Molecular Biology of Stress Responses in Phototrophs (MBSR-2016)**,** Indira Gandhi National Tribal University (IGNTU), India. 2016.

3. **Qualified, Council of Scientific and Industrial Research National Eligibility Test (CSIR-NET) three times [**June 2014 (All India Rank 35.s), June 2015 (All India Rank 39.s), June 2016 (All India Rank 35.s)**],** one of the most prestigious national level exam conducted by CSIR, New Delhi, India for the Lectureship/Assistant Professor' in Indian universities and colleges.
4. **Qualified Agricultural Scientist Recruitment Board National Eligibility Test (ASRB-NET) from** Agriculture Biotechnology **twice** [November 2014 (51 %), December 2015 (53 %)], one of the most prestigious exams conducted by Indian Council of Agricultural Research (ICAR), New Delhi, India for Lectureship/Assistant Professor' in agricultural universities across India.
5. **Qualified Graduate Aptitude Test in Engineering (GATE)** from Life Science [January 2015 with 92.75 Percentile] conducted jointly by Indian Institute of Science (IISc) and Indian Institutes of Technologies (IITs), India for Master of Technology or Doctor of Philosophy.

Techniques Known

Plant Biotechnology: Tissue culture (micropropagation, callus culture, cell suspension culture, stem and root culture, synthetic seed preparation, protoplast culture), Hydroponic technique

Molecular Biology: Isolation of genomic and plasmid DNA, isolation of RNA, cDNA preparation, semi-quantitative RT PCR, q-RT PCR.

Microbiology: Culturing of microorganisms (bacteria and fungi) isolated from terrestrial and marine sources, microscopic counting of microbes, staining techniques, identification of microorganisms using 16S/18S rRNA sequencing.

Biochemistry: Estimation of protein, carbohydrate, chlorophyll and carotenoids, evaluation of stress and antioxidants (enzymatic and non enzymatic) parameters, chromatography (TLC), spectrophotometric analysis of enzymes and nucleic acid, metal/ element detection by atomic absorption spectroscopy.

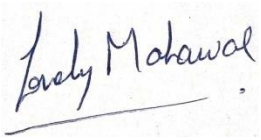
Bioinformatics: Multiple sequence alignment by Clustal W**,** Clustal X**,** Primer designing and genome analysis (18S) using bioinformatics tools.

References

1. **Prof. G. S. Shekhawat**

   Department of Botany
   Jai Narain Vyas University, India
   Email: gyans.shekhawat@gmail.com
   Contact No. +91-9414279665

2. **Dr. Dipjyoti Chakraborty**
   Professor and Head,
   Department of Bioscience and Biotechnology
   Dean (Research & Development)
   Banasthali University, India
   Email: cdipjyoti@banasthali.in
   Contact No. +91- 9351548762



Place: Satna, India

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