

IV.RESEARCH, INNOVATION AND EXTENSION

1.Thrust area of current research

- Mycology & Plant Pathology
- Ecology and Ecosystem services
- Mushroom Biology
- Biodiversity & Conservation
- Climate Change
- Functional Genomics & Proteomics

2.Promotion of Research and Facilities:

3.Grants for research projects sponsored by the government agencies during the last five years:

RESEARCH PROJECTS (2015-2021)

	Name of Faculties	Projects		
		Completed	Ongoing	Submitted
1	Prof. P. K. Khare	02	02	01
2	Prof. M.L. Khan	01	08	02
3.	Prof. A.Mehta	02	--	--
4.	Prof. D.Vyas	01	--	--
6	Dr. Ashwani Kumar	01	01	02

Summary :

Completed: ; 07

Ongoing: ; 11

Submitted: 05

DETAILS OF RESEARCH PROJECTS

S. N.	Faculty	Project Title	Year	Funding Agency	Grant Rs in Lakhs	Status	Output		
							Publi-	Ph.	Employ

							cations	D.	ment
1.	Prof. M.L.Khan	Monitoring forest structure and dynamics in relation to climate change across different biogeographic zones of India. Co-PI	2020-2025	MoEF & CC	374	Ongoing			
2.	Prof. M.L.Khan	Long-term monitoring of soil processes in forests and grasslands. Co-PI	2020-2025	MoEF & CC	319	Ongoing			
3.	Prof. P. K. Khare	Vegetation Carbon Pool Assessment ISRO-IGBP-NCP project	2014-2017	ISRO	12	Completed	3	1	
4.	Prof. M.L.Khan	Inventory Biodiversity value, status and strategies for conservation of Sacred Groves of Central India, CSIR, Co-PI.	2014-2017	CSIR		Completed	03		03
5.	Prof. M.L. Khan	Mapping and Quantitative Assessment of Plant Resources and its Distribution in Madhya Pradesh, Central India, PI	2017-2021	DBT	212.26	On-going			09
6.	Prof. M.L. Khan	Monitoring spatio-temporal dynamics of Above Ground Biomass in forests ecosystems using Airborne L & S band SAR images., CO-PI	2017-2020	Space Application Centre, Ahmedabad	24.30	On-going			
7.	Prof. M.L. Khan	Effect of <i>Lantana camara</i> on Carbon Sequestration and CO2 Efflux of DImpact		UGC	24	On-going			01

		Factor:ferent Forest Types in Central India (Dr. D.S. Kothari Postdoctoral Fellowship awarded to Bilal Ahmad Wani) Mentor							
8.	Prof. M.L. Khan	Monitoring and Mapping of Forest Communities with special reference to invasive plant species using AVIRIS – NG., CO-PI	2017-19	Space Application Centre, Ahmedabad	11.00	On-going			
9	Prof. M.L. Khan	A study on potential and effects of <i>Gliricidium sepium</i> as an invasive tree (DST-SERB National Post-Doctoral Fellowship awarded to Dr. Devika Bajpai). Mentor	2017-2020	SERB New Delhi	19.20	On-going			01
10.	Prof. M.L. Khan	Assessing the carbon sequestration potential of different Factor:ferent forest types in Central India in response to climate change (DST-SERB National Post-Doctoral Fellowship awarded to Javid Ahmad Dar.) Mentor	2017-2020	SERB New Delhi	19.20	On-going	01		01
11.	Prof. M.L. Khan	A study on reproduction potential of invasive tree <i>Gliricidia sepium</i> in relation to its invasion success (Post-Doctoral Fellowship for Women awarded to Devika Bajpai) Mentor	2015-2019	UGC	28.55	Completed			01
12.	Prof. M.L.	Exploration and conservation of	2014-	GBPIHED	9.96	Comple	02		

	Khan	ecologically and economically important threatened plant species occurred in sacred groves of Assam CO-PI	18			ted			
13.	Prof. Deepak Vyas	Study of Flora and Fauna Runj Forest , Pawai Forest , Hada Forest Panna, Barach Forest Banda PI		WRD Bhopal	14	Completed	3		
14.	Dr. Ashwani Kumar	Phenotypic microarray and molecular identification PGPR of selected bioenergy plants PI	2014-16	UGC	6	Completed	4		

4. Research Publications and Awards:

AWARDS, HONORS AND RECOGNITIONS (2015-20)

1. Prof. P.K. Khare: Member of expert committee for revision of wildlife protection act 1972 (Ministry of Environment, Forest and Climate Change).
2. Prof. M.L. Khan: Elected as Vice President of National Institute of Ecology, New Delhi (2015-till present).
3. Prof. M.L. Khan: Member of Expert Committee of DBT Task Force (2017-2020)
4. Prof. M.L. Khan: Member of Global Forest Biodiversity Initiatives (USA) (2016 – till present)
5. Prof. M.L. Khan: Member of IUCN Commission on Ecosystem Management (2016 – till present)
6. Prof. M.L. Khan: Executive Council Member of Society for Science of Climate Change and Sustainable Environment (SSCE), Lucknow. (2016 – till present)
7. Prof. M.L. Khan: Editorial Member of the Journal of Climate Change and Sustainable Environment. (2016 – till present)
8. Prof. M.L. Khan: Visited Beijing Forestry University, Beijing, China during 5-9 Sept, 2017 and presented the research paper.
9. Awarded, as co-coordinator GIAN program, MHRD, Govt of India, MHRD, India, 2019

10. Dr. Ashwani Kumar: International Keynote Speaker at SASM 19th Biennial Congress held at Coastland, Umhlanaga, Durban, South Africa, during 17th-20th Jan 2016.
11. Dr. Ashwani Kumar: Chaired a Session in the section "Plant Biotechnology" at International Conference on Current Trends in Biotechnology-2017, organised by Vellore Institute of Technology, Vellore, India, during 8-10 Dec. 2016.
12. Dr. Ashwani Kumar: Session Chair at International Conference on Renewable Energy for Sustainable Environment: Challenges and Remedies. SMVDU, Katra, J&K, during 20-21, 2017
13. Dr. Ashwani Kumar: Awarded Shastri Mobility Programme (SMP), SHASTRI INDO-CANADIAN INSTITUTE, MHRD, 2018-19, for Concordia University, Canada
14. Dr. Ashawani Kumar: Awarded, as co-coordinator GIAN program, MHRD, Govt of India, MHRD, India, 2019
15. Member CEM, International Union of Conservation of Nature and Natural
16. Resource Fellow, International Society of Environmental Botanist, NBRI, Lucknow, India 2020

5. QUALITY IMPROVEMENT PROGRAMMES ATTENDED BY FACULTY

S. No.	Name of the Faculty	Programme	Duration	Organized by
1.	Dr. Poonam Dehariya	Refresher Course, ASC, Dr. H.S.Gour, V.V., Sagar, M.P.	30.11.2015-20.12.2015	UGC
		Short term Course, GIAN, HRDC, Dr. H.S.Gour, V.V., Sagar, m.p.	13-11-2017-18-11-2017	UGC
		Short term Course, HRDC, Dr. H.S.Gour, V.V., Sagar, m.p.	10-02-2020-15-02-2020	UGC
2.	Dr. Amit J. Bishwas	Refresher Course, ASC, Dr. H.S.Gour, V.V., Sagar, M.P.	16.01.2017-05.02.2017	UGC
3.	Dr. Ashwani Kumar	53 rd Orientation Course, ASC, Dr. H.S. Gour, V.V., Sagar, M.P.	18.12.2014-14/01/2015	UGC
		Refresher Course, ASC, Dr. H.S.Gour, V.V., Sagar, M.P	16.01.2017-05.02.2017	UGC

FOREIGN VISITS BY FACULTY (2015-20)

S. No.	Name of Faculty member	Place of Visit	Country	Year	Purpose
1.	Prof. M. L. Khan	Beijing Forestry University, Beijing	China	5 th -9 th Sep. 2017	Present Research Paper
2.	Dr. Ashwani Kumar	Coastland, Umhlanaga, Durban	South Africa	17th-20th Jan 2016.	International Keynote Speaker
3.	Dr. Ashwani Kumar	Concordia University, Montreal	Canada	2018	Research fellow

FOREIGN VISITS BY STUDENTS (2015-20)

S. No.	Name of student	Place of Visit	Country	Year	Purpose
1.	Anamika Dubey	Concordia University, Montreal	Canada	2018	Research fellow

6.Details of Ph.D. Awarded:

S. No.	Name of Candidates	Name of Guide	Topic	Year of Award
1.	Onkar Salunkhe	Prof. P.K. Khare	Studies on Phytomass and carbon stock in selected Tropical Dry Deciduous Forests of Madhya Pradesh	2016
2.	Imtiyaz Ahmad Sheikh	Prof. D.Vyas	Studies on Antioxidant and Anticonvulsant Activity of some selected Polypore Mushrooms	2016
3.	Ku. Keerti Dehariya	Prof. D.Vyas	Acid Bacteria and its Potential Application as Probiotics	2016
4.	Smt. Vandana Bharti	Prof. Archana Mehta	Studies on Rhizospheric interactions with Special reference to Biocontrol of Vascular Wilt Disease of <i>Cajanus Cajun</i> .	2017
5.	Prakash Kushwaha	Prof. A.N.Rai	Fungal Biodiversity from the Forest Flora of Chhatarpur (M.P.)-A Survey, Collection and Mycotaxonomic Study.	2017
6.	Ku. Neha Awasthi	Prof. A.N. Rai	"Studies of Phytopathogenic Fungi at	2017

			Sagar.”	
7.	Rafiq Ahmad Dar	Prof. A.N. Rai	“Foliicolous Mycoflora of South Kashmir: A Mycotaxonomic Study”	2017
8.	Jaishri Surywanshi	Prof. A.N. Rai	“Foliicolous fungi from the forest flora of Balaghat(M.P.) – A Mycotaxonomic survey and investigation”	2017
9.	Daulatram Gwalwanshi	Dr.Amit Jugnu Bishwas	“Studies on the Wild Medicinal Flora of Balaghat District of Madhya Pradesh”	2018
10.	Ku. Vaishali Gupta	Prof. Archana Mehta	“Characterization of Bacteria for Probiotics and their Biotherapeutic Applications”	2018
11.	Preeti Dubey	Dr. Ashwani Kumar	“Characterization of Lignocellulose degrading enzyme producing Bacteria”	2019
12.	Atul Kumar Pandey	Prof. A.N.Rai	“Microfungi from the forest flora the South Sagar forest division: A mycotaxonomic survey and study”	2020
13.	Jitendra K. Singh	Dr. Ashwani Kumar	Investigating different Pretreatment Methods for hydrolysis of Water Hyacinth	2020
14.	Anurag Dubey	Prof. A.N.Rai	“Phytoparasitic fungi from the forest flora of Jashpur (Chhattisgarh) :A survey collection and mycotaxonomic study”	2021
15.	Ms. Smriti Bhardwaj	Prof. A.N.Rai	“Dried reference fungal collection from the forest flora of Madhya Pradesh a mycotaxonomic evaluation”	2021
16.	Ms. Zeenat Aayub	Prof. Archana Mehta	“Phytochemical characterization of Adiantum capillus-veneris L.(Pteridophyte) and its Anticancer Properties”	2021
17.	Ms. Anamika Dubey	Dr. Ashwani Kumar	“Engineering Rhizosphere Microbiome of Soybean for Improving Plant Performance and Disease Resistance”	2021

7.PUBLICATIONS

BOOKS & BOOK CHAPTERS (2015-2020)

S.No.	Name of Faculty	Books	Book Chapters
1.	Prof. P. K. Khare	--	04
2.	Prof. A. N. Rai	-	--

3.	Prof. (Smt.) A. Mehta	--	--
4.	Prof. D. Vyas	--	08
5.	Prof. M.L. Khan	01	11
6.	Dr. Poonam Dehariya	01	06
6	Dr. A. J. Bishwas	-	1
8.	Dr. Ashwani Kumar	-	5

Summary:

Book Chapters: **35**

Books: **02**

RESEARCH PAPERS/REVIEW ARTICLES (2015-20)

CITATIONS

H-INDEX

I10 INDEX

S. No.	Name of the Faculty	National /International	Citations	H-index	i10 index
1	Prof. P. K. Khare	28	355	10	12
2	Prof. A. N. Rai	29	16	2	0
3	Prof. (Smt.) A. Mehta	32	708	12	14
4	Dr. D. Vyas	30	600	17	22
5	Prof. M.L. Khan	45	3379	38	88
7	Dr. (Smt.) P. Dehariya	10	73	6	2
6	Dr. A. J. Bishwas	03	113	4	2
8	Dr. Ashwani Kumar	43	3318	28	49

PUBLICATIONS PROFILE (2015-2020)

Publication statistics: 2015-2020

Year	Number of papers	Total Impact Factor	Average Impact Factor
2015	28	15.01	0.536
2016	33	15.194	0.526

2017	26	18.481	0.77
2018	26	43.545	1.67
2019	20	59.715	2.98
2020	12	25.215	2.10
2015-2020	145	177.16	8.582
Total Citation: 8101 h-index: 103 i10-index: 174			

LIST OF PUBLICATIONS (2015-2020)

HIGHLY IMPACT FACTOR PUBLICATION:

Steidinger B. S., Khan M. L. (181 authors) (2019). Climatic controls of decomposition drive the global biogeography of forest tree symbioses, *Nature* 569 (7756) 16 May: 404-408. <https://doi.org/10.1038/s41586-019-1128-0>. IF:43.07.

2015

1. **Tripathi S N.** and **Rai A N.** Some additions to the fungus genus *cercospora* Fsres. From central India. ***Journal of Environment and Social Science Research***, 2015 Vol. 4. 35-40. **ISSN: 2454-5953**
2. **Dar R A., Rai A N.,** Reshi M I., Shiekh I A. & **Surywanshi J.** First report of *Helicocerasceltidis* causing foliar disease of *Celtis australis* from Jammu and Kashmir, India, ***Austrian J. Mycol***, 2015; 24,129-136. ISSN 1021-2450
3. **Surywanshi J. and Rai A N.** Antifungal Activity of *Galinsoga parviflora* cav. ***Naveen Anveshan***, 2015; 01, 75-78. **ISSN: 2395-3497**
4. **Shrivastava S., Rai A N. and Verma N.** Two new sp. of the genus *Leptoxylum* Speg. From the forest flora of Madhya Pradesh, ***Journal of The Botanical Society***, 2015, 44, 59-65. **ISSN: 2229-7170.**
5. Dehariya K, Shukla A, Sheikh IA and **Vyas D.** *Trichoderma* and Arbuscular Mycorrhizal fungi based biocontrol of *Fusarium udum* and their growth promotion effect on Pigeon Pea. ***Journal of agricultural Science and Technology***. 2015; 17 :505-517 **ISSN: 2345-3737**
Impact Factor: 0685

6. Vyas A, Putatunda C and **Vyas D**. Partial characterization of Cellulase Production by *Jeotgalibacillus marinus* MTCC 6233. **Biosciences Biotechnology Research Asia**. 2015; 12(Spl. Edn. 2), 325-332 ISSN: 2456-2602
7. **Vyas,D** and Yadav, R,K. Biocontrol of root rot of Pan caused by *Phytophthora parasitica* var piperina **Journal of Botanical SocietyUniversity of Saugor**. 2015; 45: 17-24 ISSN 2229-7170
8. **Vyas, D**. Association of arbuscular mycorrhizal fungi in grasses. **Journal of Botanical SocietyUniversity of Saugor** 2015; 45: 25-33 ISSN 2229-7170
9. **Vyas, D** Mishra, M and shukla, A. Mycorrhizosperic interactions in medicinal plants and phytoprotection against *Fusarium*. **Journal of Botanical SocietyUniversity of Saugor**. 2015; 45: 34-45 ISSN 2229-7170
10. **Vyas,D** Singh, M and Singh, P.K. Arbuscular mycorrhizal fungi: The symbiotic bioengineers. **Journal of Botanical SocietyUniversity of Saugor** 2015 ;45; 71-100 ISSN 2229-7170
11. Gupta,R.K, Sharma,C , Irfan, M and **Vyas, D** (2015) AM colonization in roots of *Camellia sinensis* in different tea garden of Uttarakhand. Journal of Botanical SocietyUniversity of Saugor Vol 45 101-111 ISSN 2229-7170
12. Singh, V, Seikh, I, A Wagay, J.A and **Vyas D** Analysis of antioxidant property of *Pleurotus ostreatus*. **Journal of Botanical Society University of Saugor** 2015; 45 118-128 ISSN 2229-7170
13. **Vyas D**, Dehariya K and Yadav R K (2015) Antagonistic effect of native fungal agents against the *Phytophthora parasitica* var. *Piperina*. Proceedings of NSECSDIE in 21st century: 40-44. ISSN print – 0976-2876
14. **Vyas D** (2015) Response of pesticides on AM fungi associated with some leguminous plants. Proceedings of NSECSDIE in 21st century: 40-44. ISSN print – 0976-2876
15. Singh V, Pandey R and **Vyas D** Antioxidant potentiality of *Pleurotus ostreatus* (MTCC142) cultivated on different agro wastes. **Asian Journal of Plant Science and Research** 2015; 5(6): 22-27 ISSN:2249-7412
16. Sheikh IA, **Vyas D**, Lone R and Singh V. *Ganoderma lucidum* and *Trametes hirsuta* as potent antioxidants in free radical systems *in vitro*. **World J Pharma Pharmaceut Sci**. 2015; 4(5): 1695-1710.ISSN: 2321-3086 IF 0.453
17. Singh V, **Vyas D**, Pandey R and Sheikh IA. *Pleurotus ostreatus* produces antioxidant and anti-arthritic activity in wistar albino rats. **World J Pharma Pharmaceut Sci**. 2015; 4 (5): 1230-1246. ISSN: 2321-3086 IF 0.453
18. Bawri A., Gajurel P. R. and **Khan M. L**. Rediscovery of *Primula polonensis*. **Kew Bulletin**, 2015; 70:56; DOI 10.1007/S12225-015-9605-

6. ISSN: 0075-5974 (print version) ISSN: 1874 - 933X (electronic version).

Impact Factor:0.577

19. Ray P. C., Kumar A., Devi A., **Khan M. L.**, Krishna M. and Brockelman W. Y. Role of habitat characteristics on group density of Western Hoolock Gibbon (*Hoolock hoolock*) in Namdapha National Park of Arunachal Pradesh, Eastern Himalaya, India. ***International Journal of Primatology***, 2015; DOI 10.1007/s10764-015-9834-4. ISSN: 0164-0291.

Impact Factor:1.285

20. Roy P. S., Roy A., Joshi P. K., Kale M. P., Srivastava V. K., Srivastava S. K., Dwevidi R. S., Joshi C., Behera M. D., Meiyappan P., Sharma Y., Jain A. K., Singh J. S., Palchowdhuri Y., Ramachandran R. M., Pinjarla B., Chakravarthi V., Babu N., Gowsalya M. S., Thiruvengadam P., Kotteeswaran M., Priya V., Yelishetty K. M. V. N., Maithani S., Talukdar G., Mondal I., Rajan K. S., Narendra P. S., Biswal S., Chakraborty A., Padalia H., Chavan M., Pardeshi S. N., Chaudhari S. A., Anand A., Vyas A., Reddy M. K., Ramalingam M., Manonmani R., Behera P., Das P., Tripathy P., Matin S., **Khan M. L.**, Tripathi O. P., Deka J., Kumar P. and Kushwaha D. Development of Decadal (1985–1995–2005) Land-Use and Land Cover Database for India. ***Remote Sensing***. 2015; 7: 2401-2430; doi:10.3390/rs70302401. ISSN: 2072-4292.

Impact Factor: 3.18

21. Nath P. C., Arunachalam A. and **Khan M. L.** Effect of seed size and light regime on seed germination and seedling survival in three dominant rainforest tree species of northeast India. ***Journal of Tropical Forestry***, 2015; 31(ii):10-25. ISSN: 0970-1494.
22. Paul A., Bhattacharjee S., Choudhury B. I. and **Khan M. L.** Population structure and regeneration status of *Cyathea gigantea* (Wallich ex Hook. f.) Holttum, a tree fern in Arunachal Pradesh, India. ***Journal of Forest and Environmental Science***, 2015; 31 (3): 164-176. <http://dx.doi.org/10.7747/JFES>. pISSN: 2288-9744, eISSN: 2288-9752.
23. Bawri A., Paul A., Gajurel P. R. and **Khan M. L.** Diversity and Distribution of *Primula* species in Western Arunachal Pradesh, Eastern Himalayan Region, India. ***Journal of Threatened Taxa***, 2015;7(1):6788-6795. ISSN: 0974-7907.
24. **Dehariya P** and Vyas D. Evaluation of different spawn and substrates on growth and yield of *Pleurotus sajor caju*. ***International journal of Recent Scientific Research***. 2015; 6(3): 2908-2911. ISSN 0976-3031
- Impact Factor: 1.13**
25. V.K. Yadav, A.K. Srivastava and **P.K. Khare**. Endangered Indian wetlands-Concept for sustainable development and management: A review. ***Octa Journal of Bioscience*** 2015;3(1): 31-33. ISSN No. 2321-3663.

26. **A.J. Bishwas**, Pradeep Tiwari and Daulat Ram Gwalwanshi. Studies on seed biology and ecology of certain medicinal plants of Sagar district; Central India. ***Maddhya Bharti Journal of Science* 2015;59(2):98-101.**
27. **Kumar, A.**, Dames, J. F., Gupta, A., Sharma, S., Gilbert, J. A., & Ahmad, P. Current developments in arbuscular mycorrhizal fungi research and its role in salinity stress alleviation: a biotechnological perspective. ***Critical reviews in Biotechnology* 2015;35(4); 461-474. ISSN Impact Factor: 6.542**
28. **Kumar A**, Sharma S, Mishra S. Evaluating effect of arbuscular mycorrhizal fungal consortia and *Azotobacter chroococcum* in improving biomass yield of *Jatropha curcas*. ***Plant Biosyst - An International Journal Deal with all Aspect of Plant Biology* 2015; 1–9. doi: 10.1080/11263504.2014.1001001. Impact Factor: 1.39**

2016

29. **Dar R A., Rai A N. & Shiekh I A.** First report of white stain of apple caused by *Trichothecium kashmeriana* in India. ***Archives of Phytopathology and Plant Protection*, 2016; 50(3-4), 99-108. ISSN: 0323-5408**
30. **Khushwaha P. Rai A N. & Kumar A.** *Sphaerotheca sagarensis*- First record from central India. ***Madhya Bharti Journal of Science*, 2016; 60 (1), 21-25. ISSN: 0972-7434**
31. **Suryawanshi J, Rai A N. & Dar R A.** *Pseudocercospora lamaticola* - A new species of foliicolous fungi from central India. ***Madhya Bharti Journal of Science*, 2016; 60(1), 26-30. ISSN: 0972-7434**
32. **Thakur R S., Rai A N. & Khushwaha P.** New species of *Botrytis micheli* Ex Fries on medicinally plants *Aristolochia indica* Linn. from central India. ***Madhya Bharti Journal of Science*, 2016; 60(1), 31-34. ISSN: 0972-7434**
33. **Suryawanshi J. Rai A N. & Dar R A.** Fungal biodiversity: collection, conservation and identification of fungi from Balaghat district (MP). ***Journal of The Botanical Society*, 2016; 46, 204-208. ISSN: 2229-7170**
34. **Verma N K. & Rai A N.** *Torula strelitziae*, A novel taxon of dematiaceous hyphomycete from central India. ***Journal of the Botanical Society*, 2016; 46, 57-62. ISSN: 2229-7170**
35. **Tripathi S N. and Rai A N.** Some additions to the *Hyphomycetes* From central India. ***Journal of Environment and Social Science Research*, 2016; Vol. 5. 29-35. ISSN: 2454-5953**

36. **Verma N K.** and **Rai A N.** Two noval addition to the fungal genus Memnoniella Hohnel. ***Journal of The Botanical Society*, 2016; Vol. 48. 86-94. ISSN: 2229-7170**
37. **Yadav V R.** and **Rai A N.** novel addition to the fungal species *cladosporium palmicola* form central India. ***Journal of The Botanical Society*, 2016; vol. 47. 108-111. ISSN: 2229-7170**
38. **Tripathi S N.** Mishra A. and **Rai A N.** Study on a new species of *Tripaspermum* (*T. dhamonica* sp. Nov.) in North Sagar Forest Division, M. P. India. ***Journal of The Botanical Society*, 2016; Vol. 48. 179-183. ISSN: 2229-7170.**
39. Vandana Bharti, Archana Mehta, Neha Jain, Siddhartha Singh And Laxmi Ahirwal. In vivo acute toxicity, antibacterial, antiaquatic fungal, anthelmintic activity of lactobacillus plantarum kp894100 And *Lactobacillus acidophilus* Kp942831. ***Asian Journal Of Pharmaceutical And Clinical Research*. 2016; 9(1), 79-83**
40. Pinkee Pandey, **Archana Mehta**, Subhadip Hajra. Antimicrobial Potential of Hydro-Alcoholic Extract of Ruta graveolens Leaves. ***Food and Pharma International*. 2016; 1 (1) 38 - 40**
41. Roshan Kumar, Avinash Upadhyay, Archana Mehta. Listeria Contamination in Chocolate: A Case report, ***Food And Pharma International* 1 (1), 22 – 27**
42. Kirtiman Shukla, Pradeep Mehta, **Archana Mehta**. Phytochemical Analysis and Anti-Stress Adaptogenic Potential of Hydro-Alcoholic Extract of *Ocimum sanctum*. ***Food And Pharma International* 2016;1 (1), 15 - 21**
43. Anand Rajoria, Archana Mehta, Pradeep Mehta, Laxmi Ahirwal. Quantitative Estimation of Chlorophyll and Carotene Content in Triticum aestivum Hexane Extract and Antimicrobial Effect against Salmonella. ***Food And Pharma International* 2016;1 (1), 8-14**
44. **Vyas,D** , Seikh, I.A and Tiwari,G.K. Role of mushroom in maintain mental health with special reference to anti-convusant activity. The ***International Journal of Indian Psychology***. 2016; 4 Dip:18.01.005/20160476.ISSN: **2349-3429**
45. **Vyas, D.** Prof. S.B. Saksena:A doyen of Mycology. ***Journal of Botanical SocietyUniversity of Saugor*.2016; 47 5-13 ISSN 2229-7170**
46. Seikh, I.A, **Vyas,D** and Dar, R.A. Evaluation of parmacotherapeutic potential of Trametes hirsute in experimental rat model. ***Journal of Botanical SocietyUniversity of Saugor*. 2016; 47 59-76 ISSN 2229-7170**
47. Richhariya, P.K. and **Vyas, D.** Occurrence of arbuscular mycorrhizal fungi in grasses growing in Panna national Park (M.P). ***Journal of Botanical SocietyUniversity of Saugor* 2016; 47: 113-117 ISSN 2229-7170**

48. Singh, P.K. and **Vyas, D.** Trichoderma species: the history and evolution of current concepts of Biological control. **Journal of Botanical Society University of Saugor**. 2016; 46: 111-128 ISSN 2229-7170
49. **Vyas, D.** Arbuscular mycorrhizal fungi: A natural Symbiont. **Journal of Botanical Society University of Saugor**. 2016; 46: 162-192 ISSN 2229-7170
50. Saikia P. and **Khan M. L.** Tree species diversity and its population and regeneration status in home gardens of upper Assam, Northeast India. **Journal of Forest and Environmental Science** 2016; 32(2):129-139. ISSN: 2288-9744 (Print), 2288-9752 (Online).
51. Barbhuiya, A., **Khan M. L.** and Dayanandan S. Genetic structure and diversity of natural and domesticated populations of *Citrus medica* in the Eastern Himalayan region of Northeast India. **Ecology and Evolution** 2016; doi: 10.1002/ece3.2174; Online ISSN: 2045-7758.
Impact Factor :2.32
52. Bawri A., Gajurel P. R. and **Khan M. L.** *Primula calderiana* subsp. *bawarii* (Primulaceae): a new subspecies from Arunachal Pradesh, India. **Phytotaxa** 2016; <http://dx.doi.org/10.11646/phytotaxa.00.0.0>. ISSN: 1179-3163.
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South Korea: 03

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South Africa

8. **Kumar, A.**, Dames, J. F., Gupta, A., Sharma, S., Gilbert, J. A., & Ahmad, P. 2015. Current developments in arbuscular mycorrhizal fungi research and its role in salinity stress alleviation: a biotechnological perspective. ***Critical reviews in Biotechnology*** 35(4); 461-474. ISSN
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2015

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2. Kumar, Ashwani, Dames, J. F., Gupta, A., Sharma, S., Gilbert, J. A., & Ahmad, P. 2015. Current developments in arbuscular mycorrhizal fungi research and its role in salinity stress alleviation: a biotechnological perspective. **Critical reviews in Biotechnology** 35(4); 461-474. ISSN Impact Factor: 6.542

2016

3. Gupta A, Sharma S, Kumar Ashwani, et al. 2016. Enhancing Nutritional Contents of Lentinus sajor-caju Using Residual Biogas Slurry Waste of Detoxified Mahua Cake Mixed with Wheat Straw. **Frontiers in Microbiology** doi: 10.3389/fmicb.2016.01529. Impact Factor: 4.076
4. Kumar Ashwani, Chanderman A, Makolomakwa M, et al. 2016. Microbial production of phytases for combating environmental phosphate pollution and other diverse applications. **Critical Review in Environmental Sciences and Technology** 46:556–591. doi: 10.1080/10643389.2015.1131562. Impact Factor: 5.79

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5. Behera M. D. , Tripathi P., Das P., Srivastava S. K., Roy P. S. , Joshi C., Behera P. R., Deka J., P Kumar, Khan M. L., Tripathi O. P., Dash T. and Krishnamurthy Y. V. N. 2017. Remote sensing based Deforestation analysis in Mahanadi and Brahmaputra River Basin in India since 1985. *Journal of Environmental Management* (in press). ISSN 0301-4797. Impact Factor:4.010.
6. Verma S., Dar J. A., Malasiya D., Khare P. K, Dayanandan S. D. and Khan M. L. 2017. A MODIS-based spatiotemporal assessment and monitoring of agricultural residue burning in Madhya Pradesh, India (2002-2016). *Ecological Indicators* (revised MS submitted). ISSN: 1470-160X. Impact Factor:3.90
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2018

1. Verma S., Dar J. A., Malasiya D., Khare P. K., Selvadurai Dayanandan S. and Khan M. L. A MODIS-based spatiotemporal assessment of agricultural residue burning in Madhya Pradesh, India. **Ecological Indicators**, 2018; <https://doi.org/10.1016/j.ecolind.2018.04.042>. Impact Factor: 4.49
2. Singh J. K., Sharma R. K., Ghosh P., Kumar A. and Khan M. L. Imidazolium Based Ionic Liquids: A Promising Green Solvent for Water

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4. Malla MA, Dubey A, **A Kumar**, Yadav S, Hashem A and Elsayed F. Abd Allah Exploring the human microbiome: The potential future role of next-generation sequencing in disease diagnosis and treatment. *Frontiers Immunology*, 9. (2018).

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6. Malla MA, Dubey A, Yadav S, **A Kumar**, Hashem, Abd_Allah EF. Understanding and designing the strategies for the microbemediated remediation of environmental contaminants using omics approaches. *Front. Microbiol.* 9. (2018). **IF: 4.259**
7. Chowdhary K, **A Kumar**, Jangir M, Pathak R, Sharma S. Ocimum sp.: Source of biorational pesticides. *Industrial Crops & Products*, 122, 686-701. (2018). **IF: 4.191**

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1. Steidinger B. S., **Khan M. L.** (181 authors) (2019). Climatic controls of decomposition drive the global biogeography of forest tree symbioses, *Nature* 569 (7756) 16 May: 404-408. <https://doi.org/10.1038/s41586-019-1128-0>. **IF: 43.07**
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2020

1. Constantin Z. **Khan M. L.** (et al.) 2020. Phenological responses of temperate and boreal trees to warming depend on ambient spring temperatures, leaf habit and geographic range; *Proceedings of National Academy of Science*. <https://doi.org/10.1073/pnas.1920816117>

Impact Factor:9.5

8. Extension Activities

COLLABORATION WITH INTERNATIONAL & NATIONAL LEVEL

Prof.M.L. Khan

International Level: 01

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National Level: 02

- Central University of Jharkhand, Ranchi
- Tezpur University, Tezpur, Assam

Dr. Ashwani Kumar

International Level: 03

1. Dr. Esther Menendez

- [Universidad de Salamanca, Spain](#)

2. Prof. Alexis Noguera

- University of Zulia, Maracaibo, Venezuela

3. Dr. Clíssia BD Silva

- University of São Paulo

ACTIVITIES

- Collaborative work is going on conservational aspects between Botanic Garden of the department and International organization i.e. Botanic Garden Conservation International (BGCI) Kew, (U.K.).

- *Ex-situ* conservation activities are being carried out in the garden as per suggestions and guidance received from BGCI (Kew) and IUCN (Switzerland).
- Educational awareness and message conveying programme, regarding Biodiversity conservation, are being carried out for college teachers and school level students.
- It is acting as a living repository where large number of rare and endangered plant species are being cultivated and preserved. It is also providing scientific teaching material to other institutions.