

CURRICULUM VITAE

Dr. Sumeet Gairola, FLS (London), FSPR, FNESA

Associate Professor

Department of Botany & Microbiology
HNB Garhwal University (A Central University),
Srinagar Garhwal -246174, Uttarakhand India
E-mail: sumeetgairola@gmail.com

Mobile No.: 9018257517

ORCID ID: <https://orcid.org/0000-0002-2928-1446>

ResearchGate ID: <https://www.researchgate.net/profile/Sumeet-Gairola>

Scopus ID: <https://www.scopus.com/authid/detail.uri?authorId=33867554400>

Twitter ID: https://twitter.com/Sumeet_Gairola



Research interests

- Ethnomedicinal plants used by indigenous communities of Western Himalaya.
- Systematics of Western Himalayan flora.
- Botanical standardization of Herbal drugs used in Indian Systems of Medicine (ISM).
- Effects of climate change on Western Himalayan flora.
- Ecology and conservation biology of Rare, Endangered, and Threatened (RET) medicinal plants.
- Industrially relevant high-value Medicinal and Aromatic Plants (agro-technology development and technology transfer to farmers).

Academic qualifications

Degree/ Qualification	Subject	University/Board	Year
Doctor of Philosophy (D.Phil.)	Botany Title of the thesis: <i>Phytodiversity, Forest Composition, Growing Stock Variation, and Regeneration Status in the Mandal-Chopta Forest of Garhwal Himalaya.</i> Guide: Prof. C.M. Sharma.	H.N.B. Garhwal University (A Central University), Srinagar Garhwal, Uttarakhand, India	Submitted: 07-04-2010 Viva-Voce: 11-04-2011 Awarded: 16-06-2011
National Eligibility Test (NET) for Lectureship	Life Sciences	CSIR-UGC National Eligibility Test (NET), New Delhi, India.	Twice conducted on 19- 12-2004 and 19-06-2005
Master of Science (M.Sc.)	Botany	Hamdard University, New Delhi, India	2004
Bachelor of Science (B.Sc.)	Botany (Hons.)	Deshbandhu College, University of Delhi, New Delhi, India	2002
Senior School (12 th Class)	English, Hindi, Physics, Chemistry, Biology	C.B.S.E. Board, India, School: Kendriya	1999
Secondary School (10 th Class)	English, Hindi, Social Studies, Mathematics, Science	Vidyalaya Pushp Vihar, Delhi, India	1997

Permanent Position held/ Post PDF Research/ Teaching Experience: > 11 Years

S.No.	Position	Department	University/ Institution	Duration		Pay Level (as per 7 th CPC)
				From	To	
1.	Associate Professor	Department of Botany and Microbiology	HNB Garhwal University, Srinagar Garhwal, Uttarakhand, India	01-09-2023	Continuing	Level-13A
2.	Principal Scientist and Associate Professor (AcSIR*)	Plant Sciences Division	CSIR-Indian Institute of Integrative Medicine, Jammu, J&K, India	26-11-2020	30-08-2023	Level-13
3.	Senior Scientist and Assistant Professor (AcSIR*)	Biodiversity and Applied Botany Division	CSIR-Indian Institute of Integrative Medicine, Jammu, J&K, India	26-11-2016	25-11-2020	Level-12
4.	Scientist and Assistant Professor (AcSIR*)	Plant Biotechnology Division	CSIR-Indian Institute of Integrative Medicine, Jammu, J&K, India	26-11-2012	25-11-2016	Level-11

*Academy of Scientific and Innovative Research (AcSIR), Ghaziabad, Uttar Pradesh.

Temporary Research Position/Experience: ~5 Years

S.No.	Position	Department, University/ Institution	Project Title Guide/ Mentor	Funding Agency	Duration	
					From	To
1.	UGC-Dr. D.S. Kothari Post-Doctoral Fellow	Department of Botany, University of Delhi, Delhi, India	<i>Forest structure and carbon stocks along an elevational gradient in Kedarnath Wildlife Sanctuary of Garhwal Himalaya.</i> Mentor: Prof. P.L. Uniyal	UGC, India	09-01-2012	24-11-2012
2.	Senior Research Fellow (SRF)	Division of Plant Exploration and Germplasm Conservation, National Bureau of Plant Genetic Resources, Delhi, India	<i>Digitisation of national herbarium of cultivated plants (NHCP).</i> Mentor: Dr. E. Roshini Nayar	DST, India	23-11-2011	08-01-2012
3.	Senior Research Fellow (SRF)	Department of Botany, HNB Garhwal University, Srinagar Garhwal, Uttarakhand, India	<i>Forest composition and diversity along a disturbance gradient and socio-economic status of the people at two biodiversity-rich places in Garhwal Himalaya.</i>	DST, India	01-05-2008	30-04-2009
4.	Junior Research Fellow (JRF)		Guide: Prof. C.M. Sharma		01-05-2006	30-04-2008
5.	One-year M.Sc. dissertation project	Department of Botany, Hamdard University, Delhi, India	<i>Effect of balanced fertilization on Nitrogen use efficiency of Spinach-Leafy vegetable with special reference to Potassium application</i> Guide: Dr. Shahid Umar	-	2003	2004

Research projects handled: 18

S.No.	Title of Project (Project code)	Project Category	Funding Agencies	Project grant (Lakh)	Status	PI/Co-PI
1	CSIR-Aroma Mission Phase-3 (HCP-0007)	CSIR-Mission Project (2023-2023)	CSIR	Rs. 1832.80/-	Handed over	Principal Investigator
2	CSIR-Aroma Mission Phase-2 (HCP-007)	CSIR-Mission Project (2020-2023)	CSIR	Rs. 2768.00/-	Completed	Principal Investigator
3	CSIR-Aroma Mission Phase-1 (HCP-0007)	CSIR-Mission Project (2017-2020)	CSIR	Rs. 2327.00/-	Completed	Principal Investigator
4	CSIR-Phytopharmaceutical Mission (HCP-0010)	CSIR-Mission Project (2017-2020)	CSIR	Rs. 988.48/-	Completed	Principal Investigator
5	Evaluation of morphological and genetic diversity of wild <i>Rosa</i> germplasm from Western Himalaya, India (GAP-2132)	Externally funded project (2016-2019)	DST SERB Start-Up Research Grant (Young Scientists)	Rs. 27.56/-	Completed	Principal Investigator
6	Advance Phase Dengue Herbal Product Project (CNP-1313)	Industry-Sponsored Research Project (2018-2020)	Sun Pharmaceuticals India Limited (SPIL), Gurgaon	Rs. 82.60/-	Completed	Principal Investigator
7	Foundational Phase Dengue Herbal Product Project (CNP-1310)	Industry-Sponsored Research Project (2017-2018)	Sun Pharmaceuticals India Limited (SPIL), Gurgaon	Rs. 55.00/-	Completed	Principal Investigator
8	Collection of plant resources from selected ecological niches for novel bioactivities (MLP 1007)	Major Lab Research Project (2016-2018)	CSIR	Rs. 30.00/-	Completed	Principal Investigator
9	Translating ideas from Chemical ecology to discover new agrochemicals (MLP 3014).	Major Lab Research Project (2016-2018)	CSIR	Rs. 30.00/-	Completed	Principal Investigator
10	Development and validation of fermentation-based immunomodulatory AYUSH Kwath formulation (GAP-3105)	Externally funded Research project (2020-2023)	AYUSH	Rs. 69.00/-	Completed	Co-Principal Investigator
11	CSIR-Immunity Mission (HCP-0035)	CSIR-Mission Project (2020-2023)	CSIR	Rs. 180.00/-	Completed	Co-Principal Investigator
12	Evaluation of Indian <i>Cannabis</i> accessions (CNP-1311)	Industry-Sponsored Research Project (2018-2021)	Bombay Hemp Company Private Limited (BOHECO),	Rs. 20.00/-	Completed	Co-Principal Investigator

		Mumbai, Maharashtra				
13	CSIR-Nutraceutical Mission (HCP-0019)	CSIR-Mission Project (2017-2020)	CSIR	Rs. 220.00/-	Completed	Co-Principal Investigator
14	CSIR-Sickle Cell Anemia Mission	CSIR-Mission Project (2017-2020)	CSIR	Rs. 220.00/-	Completed	Co-Principal Investigator
15	J&K Aroma Arogya Gram-JAAG project (RSP-4001)	12th FYP Network Project (2015-2017)	CSIR	Rs. 700.00/-	Completed	Co-Principal Investigator
16	Studying adaptation biology and understanding/ exploiting medicinally important plants for useful bioactives (SIMPLE)	12th FYP Network Project (2012-2017)	CSIR	Rs. 800.00/-	Completed	Co-Principal Investigator
17	Bioprospection of plant resources and other natural products (BioprosPR)	12th FYP Network Project (2012-2017)	CSIR	Rs. 900.00/-	Completed	Co-Principal Investigator
18	Medicinal Chemistry for Stem Cell Biology and Regenerative Medicine	12th FYP Network Project (2012-2017)	CSIR	Rs. 1200.00/-	Completed	Co-Principal Investigator

Summary of Publications and Research Indicators

	Research articles	Review articles	General articles	Book chapters	Book	Technical Brochures/ Catalogues/Reports	Papers at conferences	Total
Published	89	05	06	06	04	16	31	157
Accepted	01	00	00	00	00	00	00	01
Total	90	05	06	06	04	16	31	158

Total Impact Factor of all the publications (JCR 2022): **156.1**

Total NAAS Score of all the publications (NAAS 2023): **454.19**

Average Impact Factor of 10 best publications (JCR 2021): **6.27**

No. of Papers with > 10 NAAS Rating (NAAS 2023): **18**

No. of Papers with > 5 NAAS Rating (NAAS 2023): **48**

Patents filed: **05**

DNA barcode sequences submitted to NCBI database: **123 sequences (17 species)**

Total Citations and h-index:

Source	Scopus	Research Gate	Google Scholar
Total Citations of all publications	1515	3474	3501
h-index	20	29	30

Awards/ Recognitions received

S.No.	Award/ Recognition	Awarding body	Awarded for	Date	Awarded at
1.	SFE – Best Publication Award– 2024 (Subodh Chandra and Mamata Mukherjee Memorial Award)	Society for Ethnopharmacology (SFE)	Best Publication in Ethnopharmacology and Traditional Medicine Research	16 th February 2024 (to be awarded)	11 th International Congress of Society for Ethnopharmacology, India (SFEC 2024), is being organized by CSIR-IITM, Jammu at Jammu, India during February 16-18, 2024
2.	Fellow of National Environmental Sciences Academy Awaed-2023 (FNESA)	National Environmental Sciences Academy (NESAs), India	In recognition of outstanding and remarkable contributions in the field of “Cultivation of Medicinal and Aromatic Plants”	14 th December 2023	GPCC-2023 organized at CSIR-National Botanical Research Institute (NBRI), Lucknow, Uttar Pradesh, India
3.	ESDA Senior Scientist Award 2023 (FESDA)	Environment and Social Development Association (ESDA), Delhi, India	In recognition of outstanding and remarkable contributions in the field of “Cultivation of Medicinal and Aromatic Plants”	6 th November 2023	“World Environment Summit 2023” at Galgotias University, Greater Noida, Uttar Pradesh, India
4.	Fellow of the Linnean Society of London (FLS)	The Linnean Society of London, A Forum for Natural History, London, UK	Elected by The Linnean Society of London in accordance with the Charters and Bye-Laws	19 th October 2023	Elected in a meeting of The Linnean Society of London held on 19-10-2023
5.	Fellow Award-2024 (FSPR)	Society for Plant Research (SPR), India	In recognition of outstanding contributions in the field of “Plants Sciences”	6 th September 2023	National Conference on “Future of Agriculture and Agriculture for Future: Indian Perspective” at SKUAST, Srinagar Kashmir, J&K
6.	SPR-Springer Professor YSRK Sarma Memorial Award – 2023	Springer India and Society for Plant Research (SPR), India	In recognition of outstanding contributions in the field of “Plants Sciences”	4 th September 2023	National Conference on “Future of Agriculture and Agriculture for Future: Indian Perspective” at SKUAST, Srinagar Kashmir, J&K
7.	CSIR Award for S&T Innovations for Rural Development (CAIRD)- 2020	Council of Scientific and Industrial Research (CSIR)	Purple Revolution in J&K: Rural Development through Lavender Cultivation in J&K	26 th September 2021	80th Foundation Day of Council Of Scientific And Industrial Research (CSIR)
8.	Ultra International Team Award	Ultra International Limited, Ghaziabad, India, India	For innovative and meaningful efforts towards promotion of cultivation and processing of aromatic crops for improving the production of essential oils in India and for enhancing the income of large numbers of farmers under CSIR-Aroma Mission	5 th August 2018	International Congress of Essential Oils held in Bengaluru from 3 rd to 5 th August 2018
9.	Scientist of the Year Award 2016	National Environmental	In recognition of outstanding contributions	20 th November	XXIX Annual Conference of National Environmental

		Sciences Academy (NESA), India	in the field of "Biodiversity and Forest Ecology"	2016	Science Academy, held at University Auditorium, Panjab University, Chandigarh, India
10.	Outstanding Performance Award	National Environmental Sciences Academy (NESA), India	In recognition of outstanding contributions in the field of "Biodiversity and Forest Ecology"	20 th November 2016	National Conference on Food Security issues and Environmental Challenges for Indian Agriculture in the Next Decades held on 19-20 November 2016 at University Auditorium, Panjab University, Chandigarh, India
11.	Scientist Assistance Program (SAP) Award	International Union of Forestry Research Organizations (IUFRO)	Designed to offer Scientists from developing countries financial assistance to participate in XXIII IUFRO World Congress, Seoul, South Korea	22 nd to 28 th August 2010	XXIII International Union of Forestry Research Organizations (IUFRO) World Congress held at COEX in Seoul, South Korea.

Association with professional/ scientific bodies

S.No.	Associations/ Societies	Type of Association	Membership Number	Member Since
1.	Linnean Society of London, London, UK	Fellow (FLS)	-	19-10-2023
2.	Society for Plant Research (SPR), India	Life Member/ Fellow (FSPR)	SPR-LM-328	24-08-2023
3.	International Union of Forest Research Organizations (IUFRO), Vienna, Austria	Associate member	A-785	19-08-2012
4.	National Environmental Science Academy(NESA), India	Life Member/ Fellow (FNESA)	359	20-08-2015
5.	Society for Ethnopharmacology (SFE), India	Member	SFE/21/I-1950	04-01-2021
6.	Environment and Social Development Association (ESDA), New Delhi, India	Patron Member	P-169	29-09-2023

Ph.D. research supervision

S.No.	Name of the Ph.D. Student	Guide	Co-Guide	University/ Institution	Title of the Thesis	Status
1.	Kanwaljeet Singh	Prof. Yash Pal Sharma, University of Jammu, J&K	Dr. Sumeet Gairola	Department of Botany, University of Jammu, Jammu, J&K	Morphological, molecular and biochemical studies on some wild species of <i>Rosa L.</i> from Western Himalaya (India)	Ph.D. Submitted and Awarded 2020
2.	Pankaj Kumar	Dr. Sumeet Gairola	-	Academy of Scientific and Innovative Research (AcSIR), Ghaziabad, U.P.	Botanical and molecular standardization of high-value raw plant drugs from Western Himalaya	Ph.D. Submitted 2021, Awarded 2022
3.	Zohra Batool	Dr. Sumeet Gairola	-	AcSIR	Cross-cultural studies on ethnobotanical plants used by indigenous communities of Ladakh (UT), India	Ph.D. Submitted 2023, Awarded 2024
4.	Javaid Fayaz	Dr. Sumeet Gairola	-	AcSIR	Eco-morphological, molecular and nutraceutical studies on	Ph.D. Submitted 2024

	Lone				wild <i>Cannabis</i> germplasm from Western Himalaya, India	
5.	Ishfaq Ahamd Lone	Dr. Sumeet Gairola	Dr. Prasoon Gupta, CSIR-IIIM, Jammu	AcSIR	Evaluation of Morpho-taxonomic variation and nutraceutical potential of Wild <i>Rosa L.</i> germplasm from Western Himalaya, India	Registered since 2020
6.	Sheetal Bhat	Dr. Sumeet Gairola	D. Prashant Misra, CSIR-IIIM, Jammu	AcSIR	Development of transcriptome resources of multiple genotypes of <i>Cymbopogon</i> spp. for the understanding of essential oil biosynthesis.	Registered since 2021
7.	Bushan Kumar	Dr. Sumeet Gairola, CSIR-IIIM, Jammu	Dr. Kota Srinivas, CSIR-IIIM, Jammu	AcSIR	Morpho- molecular taxonomic studies and chemical variability of genus <i>Artemisia L.</i> in Western and Trans Himalayan region of India	Registered since 2021

Trainee students

- Anil Raina, Project Assistant-II (2017-2019).
- Sushil Kumar, SRF (2013-2017).
- Nikita Sachdev, B.Tech, NIT, Srinagar, Trainee (2016).
- Mridul Prashar, Arni University, Kangra for M.Sc. degree in Plant Biotechnology, Trainee (2015).
- Priya Pandit, Shoolini University, HP for Bachelor of Technology in Biotechnology, Trainee (2014).

Reviewing

Reviewed research papers for many National and International Journals viz., Journal of Ethnopharmacology, Taiwania, Forestry Studies in China, National Academy Science Letters, Journal of Chemical Society of Pakistan, International Journal of Medicinal and Aromatic Plants, Journal of Crop Improvement, Frontier journals, MDPI journals, etc.

Major facilities at CSIR-IIIM managed (2012-2023)

- Internationally recognized Janaki Ammal Herbarium (RRLH) with more than 27,000 herbarium specimens.
- Crude Drug Repository (CDR) and museum with more than 4100 crude drug specimens.
- Net house and experimental field for germplasm maintenance.

Workshops/ Training programs attended

- As an expert Scientist from CSIR-IIIM attended the National Seminar on “Ayurveda and Integrative Medicine and its Contemporary Relevance” & Brainstorming session on “AYUSH & Integrative Medicine – Scope and Challenges” organized by Regional Ayurveda Research Institute for Urinary Disorders (CCRAS) Jammu on 11th and 12th January 2020.
- Co-Chairperson of “Special session on Biological Diversity Act 2002” held on 17th November 2017 at “44th Annual Meeting of Mycological Society of India” & the “National Conference on ‘Fungal Biology: Recent Trends and Future Prospects’” organized by the Department of Botany, University of Jammu.
- As an expert from CSIR-IIIM presented and discussed medicinal plants in India in a Workshop on the theme “Conservation, Development, and Marketing of Medicinal Plants” organized by the State Medicinal Plant Board on 12th & 13th December 2017 at Brigadier Rajendra Singh Auditorium, University of Jammu, Jammu.
- Workshop on Taxonomy, Reproductive Biology, and Conservation (Sponsored by the Ministry of Environment & Forests, Government of India) held on 18th–27th February 2009 at Centre for Environmental Management of Degraded Ecosystems, University of Delhi.

- GIS training program on “Introduction to ArcGIS 9” held on 19th–23rd May 2008 at ESRI India, Delhi.
- EDUSAT-based learning program on basics of RS, GIS, and GPS (from 19th September 2007 to 3rd December 2007) conducted by Indian Institute of Remote Sensing, Dehradun, Uttarakhand.

Training programs/ workshops conducted (> 500)

- As a Nodal Scientist of the CSIR-Aroma Mission Phase-III from CSIR-IIIM, Jammu organized 16 training programs on “Cultivation Processing and Marketing of Medicinal and Aromatic Plants” in 2023.
- As a Nodal Scientist of the CSIR-Aroma Mission Phase-II from CSIR-IIIM, Jammu organized 366 training programs on “Cultivation Processing and Marketing of Medicinal and Aromatic Plants” between 2020-2023.
- As a Co-nodal Scientist of the CSIR-Aroma Mission Phase-I from CSIR-IIIM, Jammu contributed organized 124 training programs on “Cultivation Processing and Marketing of Medicinal and Aromatic Plants” between 2017-2020.
- As a team leader of the project implementation team contributed to the organizing of twelve training programs on “Cultivation Processing and Marketing of Medicinal and Aromatic Plants” organized under the JAAG project between 2016-2017.
- One National Workshop on “CSIR-Aroma Mission: Value Addition of High-Value Aroma Ingredients for Socio-Economic Upliftment & Rural Prosperity” conducted on 8th March 2018 at IIIM, Jammu, J&K where 150 farmers, industry people, students, and other stakeholders participated.
- Taxonomic Workshop on Different Plant Groups jointly organized in association with the Department of Ecology, Environment & Remote Sensing, J&K (DEER), and National Academy of Science (NASI), J&K Chapter on 14th March 2016.
- Awareness cum Training Programme on MAPs for rural prosperity of Ladakh organized on 30th August 2016 at Hotel Grand Dragon, Leh, organized by CSIR-IIIM Jammu.
- Member of National Advisory Committee of National Conference on Food Security issues and Environmental Challenges for Indian Agriculture in the Next Decades” held on at University Auditorium, Panjab University, Chandigarh, India on 19th-20th November 2016.
- DBT sponsored brainstorming session on “New Bioresources for High-Value Foods and Nutraceuticals Products” at CSIR-IIIM Jammu held on 15th September 2015.
- Member of National Advisory Committee of “National Seminar on Recent Advances in Natural Products Chemistry for Drug Discovery” organized by Netaji Subhas Mahavidyalaya, Udaipur, Tripura India held on 28th -29th November 2015.

Academic activities at CSIR-IIIM Jammu (2012-2023)

- Faculty in DBT-sponsored Training on Tools and Techniques in Chemical Ecology, DBT Chemical Ecology Network Programme, NCBS, Bangalore held from 27-02-2017 to 17-03-2017.
- Faculty in CSIR-IIIM Skill Development Programme entitled “Current Good Manufacturing Practices (cGMP) of Botanicals/ Herbal Drugs/ Phytopharmaceuticals” (2018-2019).
- Faculty in online CSIR Summer Research Training Programme-2020.
- External examiner for the viva-voce examination of M.Sc. Botany at Baba Ghulam Shah Badshah University (BGSBU), Rajouri, J&K (2019 & 2020).
- Interacted with the students and teachers of Kendriya Vidyalaya Leh under “JIGYASA”- a Student-Scientist connect program on 10th May 2018.
- Courses taught under AcSIR
 - (i) Plant Functioning (Bio-IIIM-3-3009).
 - (ii) Biodiversity & Taxonomy (Bio-IIIM-3-3006).
 - (iii) Basic Biology for Interdisciplinary Sciences (IIIM-BC-004).
- Member of Doctoral Assessment Committee (DAC) member of Ph.D. students of AcSIR
 - (i) Rohini Bhat (Ph.D. Awarded).

- (ii) Sumit Kumar (Ph.D. Awarded).
- (iii) Vilayat Ali (Ph.D. Awarded).
- (iv) Maridul Kundan (Ph.D. Awarded).
- (v) Abhishekh Nautiyal (Ph.D. Awarded).

HNB Garhwal University committees (September 2023 onwards)

- Coordinator, University Placement and Counseling Cell.
- Convener for Value Added Course: Indian Knowledge System as per New Education Policy (15-12-2023).
- Member of the committee to pursue the matter/ issues related to the establishment of the science centre in Srinagar Garhwal with the support of the Uttarakhand Government.

CSIR-IIIM Jammu institutional committees (November 2012 to August 2023)

- Chairman of Institutional Germplasm Identification Committee (2017-2023).
- Chairman of Physical Verification of KRC records committee (2015-2016).
- Member of the following institutional committees.
 - Student Visit Organizing Committees on annual CSIR Foundation Day (2013-2023).
 - Organizing committees of the annual Kissan Mela, Flower Show & Entrepreneurship Programme (2014-2023).
 - Plant purchase committees constituted to procure plant material for various projects (2014-2020).
 - Security Committee (2015-2017).
 - Annual Physical Verification Committees for Stores (2015 & 2017).
 - The team leader of the project implementation team for RSP 4001- J&K Aroma Arogya Gram-(JAAG).
 - Technical & Purchase committees (T&PC) for the procurement of Mobile Distillation Units (Direct Fired), Plant Walk-in Growth Chamber, Glasshouse and Net house, Distillation Units, and Glassware.
 - Member of various selection committees to select suitable candidates for the position of Project Assistant –I, II & III in various projects (2012-2023).
 - Exhibition and Science Model Committees at India International Science Festival (IISF) Outreach Programme held at CSIR-IIIM, Jammu on 18th October 2018 and 25th October 2019.
 - Student and faculty members of Kendriya Vidyalaya schools visit organizing committee for the JIGYASA program on 26-09-2017.
 - A judging committee of National Workshop on Value Addition, Kisan Mela, and Flower Show–2018 on 8th-9th March 2018.
 - Logistics and stall management at New Delhi committee of CSIR-IIIM, Jammu on the occasion of CSIR foundation day on 26th September 2016 at Vigyan Bhawan, New Delhi.

Lectures/ invited talks

- “Cannabis: A wonder herb or dangerous drug (botanical, medical and legal aspects)” at Department of Botany, University of Jammu in “*UGC Supported Orientation Programme and Refresher Courses for Teachers*” on 30th July 2019.
- “Regional Raw Drug Repository Centre, Himalayan Region at CSIR-IIIM, Jammu” before a committee of NMPB visiting CSIR-IIIM for on-the-spot evaluation of the proposed project site on “8th and 9th Feb 2018” on 8th February 2018
- “CSIR-Aroma Mission Activities in the different states of India (Excluding Jammu and Kashmir)” at National Workshop on CSIR- Aroma Mission: Value Addition of High-Value Aroma Ingredients for Socio-Economic Upliftment & Rural Prosperity held in IIIM Jammu on 8th March 2018 on 8th March 2018
- “Cultivation and processing of Lavender” and “Crops of CSIR-IIIM under CSIR-Aroma Mission” at Skill Development Programme on Cultivation, Primary Processing and Marketing of Economically Important

Aromatic Plants, suitable for NER under CSIR-Aroma Mission organized by CIMAP, Lucknow from 27th to 29th March 2018 at Nongstoin, West Khasi Hills, Meghalaya on 27th March 2018.

- “Introduction to history, research and capabilities of CSIR-IIIM” to students from North East in Training program on “Tools and Techniques in Chemical Ecology” sponsored by DBT Chemical Ecology Network Programme, NCBS, Bangalore on 27th February 2017.
- Hands-on training on “The Hydro-distillation of aromatic plant for extraction of essential oil” to the students in the training program on “Tools and Techniques in Chemical Ecology” sponsored by DBT Chemical Ecology Network Programme, NCBS, Bangalore on 28th February 2017.
- “Regional Raw Drug Repository Centre, Himalayan Region at CSIR-IIIM, Jammu” at the evaluation of project proposals meeting at the Committee Room of AYUSH Bhawan, National Medicinal Plants Board, Ministry of AYUSH, New Delhi on 29th June 2017.
- “Evaluation of morphological and genetic diversity of wild *Rosa* germplasm from Western Himalaya, India” at Group Monitoring Workshop (GMW) of Department of Science and Technology, at International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi on 15th September 2017.
- “Biodiversity and Bioprospection from the Himalayas” at Taxonomic Workshop on Different Plant Groups, Jointly organized by DEER & IIIM under the aegis of NASI (J&K Chapter) held at IIIM, Jammu on 14th March 2016.
- “Cross-cultural analysis of ethnobotanical knowledge from the western Himalayas” at Taxonomic Workshop on Different Plant Groups, Jointly organized by DEER & IIIM under the aegis of NASI (J&K Chapter) at IIIM, Jammu on 14th March 2016.
- “Biodiversity & Bioprospection” at Department of Botany, University of Jammu in “*UGC Supported Orientation Programme and Refresher Courses for Teachers*” on 19th December 2015.
- “Biotechnology Parks in Jammu and Kashmir” in an extension workshop entitled “New Business Opportunities for Ex-Servicemen through Medicinal and Aromatic Plants” at IIIM, Jammu on 19th June 2014.

SOCIETAL AND FARMER CENTRIC ACHIEVEMENTS

As a Nodal Scientist of the CSIR-Aroma Mission Phase-I, II, and III (2017-2023), organized more than 500 training programs on “Cultivation Processing and Marketing of Medicinal and Aromatic Plants” throughout the country and trained more than 15,000 farmers and extended selected aromatic crops to 10,450 ha area benefiting more than 5000 farmers. I am credited with the successful end-to-end technology transfer on the cultivation of Lavender to the farmers, which has employed > 2500 farmers and young entrepreneurs in the geographically remote regions of J&K. The income of the farmer growing Lavender has increased many folds, and this initiative is globally well known as the “**Purple Revolution**.” For which our group received prestigious awards, viz “CSIR Award for S&T Innovations for Rural Development (CAIRD)- 2020” for “Purple Revolution in J&K,” and “Ultra International Team Award-2018.” Following are some major achievements in societal sector:

A). Promotion of cultivation & processing of aromatic crops and enhancing area of selected aromatic plants

- Under CSIR-Aroma Mission Phase-I & Phase-II, as a Nodal scientist managed the extension of selected aromatic crops to 10450 ha (1850 ha in Phase-I & 9065 ha in Phase-II) area benefiting more than 5000 farmers at various locations throughout the country (2017-2023). The aromatic crops extended were Lavender [RRL-12], Ocimum [RRL-OG-14, RRL-OB-15], Jammu Monarda [IIIM(J) MC-02], Rosagrass [RRL(J)CN-5, IIIM(J)CK-10 Himrosa], Mentha [RRL(J)MT-94, RRL(J)ML-4], Lemongrass [CKP-25, CPK-F2-38 Kalam], Geranium [PG-IIIM-101], *Salvia sclarea*, Rosemary and *Tagetes minuta*.
- A high-value essential oil-bearing Lavender crop was introduced to the farmers of temperate regions of Jammu viz., Doda, Kishtwar, and Rajouri districts. Quality planting material (QPM) of Lavender, i.e., more than 8 lakh rooted plants of Lavender, were provided free of cost to more than 2500 farmers in the Jammu region for >140 acres of land. Farmers have produced more than 800 liters of lavender oil worth Rs. Eighty lakhs between years 2018-2020.

B). Setting up a network of distillation units

- As a Nodal of CSIR-Aroma Mission played an instrumental role in the installation of a total of 61 distillation units of different types and capacities under CSIR-Aroma Mission at different locations across 12 states of India viz., Madhya Pradesh (2), Karnataka (1), Bihar (1), Chhattisgarh (1), Gujarat

(1), Maharashtra (1), Rajasthan (1), Tamil Nadu (1), Telangana (1), Uttar Pradesh (1), UT of Ladakh (2) and UT of Jammu & Kashmir (48).

C). Skill development and product development activities

- As a Nodal Scientist of the CSIR-Aroma Mission Phase-I (20177-2020), Phase-II (2020-2023) and Phase-III (2023) from CSIR-IIIM, Jammu organized 124, 366 and 16 training programs on “Cultivation Processing and Marketing of Medicinal and Aromatic Plants” between 2017 to 2023 in different parts of the country. More than 10,450 farmers and other stakeholders including more than 4000 women were trained in these programs across 15 States viz., Arunachal Pradesh, Assam, Chhattisgarh, Gujarat, Haryana, UT of Jammu & Kashmir and UT of Ladakh, Karnataka, Madhya Pradesh, Meghalaya, Maharashtra, Punjab, Rajasthan, Tamil Nadu, and Uttar Pradesh.
- As a team leader of the project implementation team contributed to the organizing of twelve training programs on “Cultivation Processing and Marketing of Medicinal and Aromatic Plants” organized under the JAAG project between 2016-2017.

LIST OF DNA BARCODE SEQUENCES SUBMITTED TO NCBI

A total of 123 barcode sequences for 17 important medicinal plant species were generated and submitted to the NCBI database. Following are the details for the submitted sequences:

S.No.	Botanical name	Accession/Place of collection	Voucher Specimen No. (RRLH-)	Barcode marker	NCBI Accession No.
1.	<i>Arisaema jacquemontii</i> Blume	Sarthal, Kathua, J&K	24232	rbcl	MZ323236
2.	<i>Arisaema propinquum</i> Schott	Sarthal, Kathua, J&K	24231	ITS	MW828311
3.	<i>Arisaema propinquum</i> Schott	Sarthal, Kathua, J&K	24231	rbcl	MZ323237
4.	<i>Cannabis sativa</i> L.	Parnalla, Bilawar, J&K	23886	ITS	OK161016
5.	<i>Cannabis sativa</i> L.	Sarore, Jammu, J&K	23907	ITS	OK217153
6.	<i>Cannabis sativa</i> L.	Sangam, Anantnag, J&K	25445	ITS	OK176182
7.	<i>Cannabis sativa</i> L.	Matti, Kishtiwari, J&K	25446	ITS	OK177826
8.	<i>Cannabis sativa</i> L.	Manger, Bilawar, J&K	25447	ITS	OK177828
9.	<i>Cannabis sativa</i> L.	Patoli, Jammu, J&K	23835	ITS	OK236544
10.	<i>Cannabis sativa</i> L.	Manali, HP	23967	ITS	OK177842
11.	<i>Cannabis sativa</i> L.	Sangnad, Anantnag, J&K	25444	ITS	OK177843
12.	<i>Cannabis sativa</i> L.	Charsoo, Pulwama, J&K	23854	ITS	OK185034
13.	<i>Cannabis sativa</i> L.	Khiram, Anantnag, J&K	23872	ITS	OK177827
14.	<i>Cannabis sativa</i> L.	Gaumnamsa, Jammu, J&K	23871	ITS	OK206080
15.	<i>Cissampelos pareira</i> L.	Pahari Khurad Village, Mandawara, U.P.	23146	ITS	MZ256954
16.	<i>Cissampelos pareira</i> L.	Pahari Khurad Village, Mandawara, U.P.	23146	matK	MZ889511
17.	<i>Cissampelos pareira</i> L.	Pahari Khurad Village, Mandawara, U.P.	23146	rbcl	MZ889512
18.	<i>Cissampelos pareira</i> L.	Billawar, Kathua, J&K	23421	ITS	MK256956
19.	<i>Cissampelos pareira</i> L.	Billawar, Kathua, J&K	23421	matK	MZ889513
20.	<i>Cissampelos pareira</i> L.	Billawar, Kathua, J&K	23421	rbcl	MZ889514
21.	<i>Cissampelos pareira</i> L.	Ramnagar, Udhampur, J&K	23177	ITS	MK256959
22.	<i>Cissampelos pareira</i> L.	Ramnagar, Udhampur, J&K	23177	matK	MZ889515
23.	<i>Cissampelos pareira</i> L.	Ramnagar, Udhampur, J&K	23177	rbcl	MZ889516
24.	<i>Cocculus hirsutus</i> (L.) W.Theob	Kandoli area, Chhindwara, M.P.	23199	ITS	MK256260
25.	<i>Cocculus hirsutus</i> (L.) W.Theob	Kandoli area, Chhindwara, M.P.	23199	matK	MK351613
26.	<i>Cocculus hirsutus</i> (L.) W.Theob	Kandoli area, Chhindwara, M.P.	23199	rbcl	MK482692
27.	<i>Cocculus hirsutus</i> (L.) W.Theob	Kandoli area, Chhindwara, M.P.	23199	<i>psbA-trnH</i>	MZ970325
28.	<i>Cocculus hirsutus</i> (L.) W.Theob	Pahari Khurad Village, Mandawara, U.P.	23150	ITS	MK256961
29.	<i>Cocculus hirsutus</i> (L.) W.Theob	Pahari Khurad Village, Mandawara, U.P.	23150	matK	MK472715
30.	<i>Cocculus hirsutus</i> (L.) W.Theob	Pahari Khurad Village, Mandawara, U.P.	23150	rbcl	MK472716
31.	<i>Cocculus hirsutus</i> (L.) W.Theob	Pahari Khurad Village, Mandawara, U.P.	23150	<i>psbA-trnH</i>	MZ970326
32.	<i>Cocculus hirsutus</i> (L.) W.Theob	Lalitpur village, Jhansi, U.P.	23202	ITS	MK256957
33.	<i>Cocculus hirsutus</i> (L.) W.Theob	Lalitpur village, Jhansi, U.P.	23202	matK	MK482691
34.	<i>Cocculus hirsutus</i> (L.) W.Theob	Lalitpur village, Jhansi, U.P.	23202	rbcl	MK482693
35.	<i>Cocculus hirsutus</i> (L.) W.Theob	Lalitpur village, Jhansi, U.P.	23202	<i>psbA-trnH</i>	MZ970327
36.	<i>Crepidium acuminatum</i> (D.Don) Szlach.	Chakrata, Uttarakhand	23712	ITS	MW828314
37.	<i>Crepidium acuminatum</i> (D.Don) Szlach.	Chakrata, Uttarakhand	23712	matK	MZ889517
38.	<i>Crepidium acuminatum</i> (D.Don) Szlach.	Chakrata, Uttarakhand	23712	rbcl	MZ889518
39.	<i>Crepidium acuminatum</i> (D.Don) Szlach.	Chakrata, Uttarakhand	23712	<i>psbA-trnH</i>	MZ889519
40.	<i>Fritillaria cirrhosa</i> D.Don	Bhaderwah, J&K	23728	ITS	MW828318
41.	<i>Fritillaria cirrhosa</i> D.Don	Bhaderwah, J&K	23728	rbcl	OK081985
42.	<i>Fritillaria cirrhosa</i> D.Don	Bhaderwah, J&K	23728	<i>psbA-trnH</i>	OK081990
43.	<i>Fritillaria cirrhosa</i> D.Don	Budgam, Kashmir, J&K	23729	ITS	MW832495
44.	<i>Fritillaria cirrhosa</i> D.Don	Budgam, Kashmir, J&K	23729	rbcl	OK081986
45.	<i>Fritillaria cirrhosa</i> D.Don	Budgam, Kashmir, J&K	23729	<i>psbA-trnH</i>	OK081991

46.	<i>Fritillaria cirrhosa</i> D.Don	Padder, Kishtwar, J&K	23736	ITS	MW832496
47.	<i>Fritillaria cirrhosa</i> D.Don	Padder, Kishtwar, J&K	23736	rbcl	OK081987
48.	<i>Fritillaria cirrhosa</i> D.Don	Padder, Kishtwar, J&K	23736	<i>psbA-trnH</i>	OK081992
49.	<i>Fritillaria cirrhosa</i> D.Don	Seoz Dhar, Bhaderwah, J&K	23716	ITS	MW832497
50.	<i>Fritillaria cirrhosa</i> D.Don	Seoz Dhar, Bhaderwah, J&K	23716	rbcl	OK081988
51.	<i>Fritillaria cirrhosa</i> D.Don	Seoz Dhar, Bhaderwah, J&K	23716	<i>psbA-trnH</i>	OK081993
52.	<i>Iris hookeriana</i> Foster	Sarthal Valley, Kathua, J&K	24199	rbcl	OK081989
53.	<i>Iris hookeriana</i> Foster	Sarthal Valley, Kathua, J&K	23716	<i>psbA-trnH</i>	OK081994
54.	<i>Polygonatum cirrhifolium</i> (Wall.) Royle	Chamoli, Uttarakhand	22684	rbcl	OK257842
55.	<i>Polygonatum verticillatum</i> (L.) All.	Seoz Dhar, Bhaderwah, J&K	24893	matK	OK148446
56.	<i>Polygonatum verticillatum</i> (L.) All.	Seoz Dhar, Bhaderwah, J&K	24893	rbcl	OK148447
57.	<i>Polygonatum verticillatum</i> (L.) All.	Seoz Dhar, Bhaderwah, J&K	24893	<i>psbA-trnH</i>	OK148448
58.	<i>Polygonatum verticillatum</i> (L.) All.	Chamoli, Uttarakhand	22678	rbcl	OK257843
59.	<i>Polygonatum verticillatum</i> (L.) All.	Bhaderwah, J&K	23718	ITS	MW828322
60.	<i>Polygonatum verticillatum</i> (L.) All.	Bhaderwah, J&K	23718	matK	OK148449
61.	<i>Polygonatum verticillatum</i> (L.) All.	Bhaderwah, J&K	23718	rbcl	OK148450
62.	<i>Polygonatum verticillatum</i> (L.) All.	Bhaderwah, J&K	23718	<i>psbA-trnH</i>	OK148451
63.	<i>Rosa canina</i> L.	Langanbal, Pehalgam, J&K	23501	matK	OL773685
64.	<i>Rosa canina</i> L.	Langanbal, Pehalgam, J&K	23501	rbcl	OL773686
65.	<i>Rosa moschata</i> Herm.	Rekong Peo, HP	23529	ITS	OK178264
66.	<i>Rosa moschata</i> Herm.	Rekong Peo, HP	23529	matK	OL804180
67.	<i>Rosa moschata</i> Herm.	Rekong Peo, HP	23529	rbcl	OL804185
68.	<i>Rosa moschata</i> Herm.	Pallan, Billawar, Kathua, J&K	23536	ITS	MW866557
69.	<i>Rosa moschata</i> Herm.	Pallan, Billawar, Kathua, J&K	23536	matK	OL804179
70.	<i>Rosa moschata</i> Herm.	Pallan, Billawar, Kathua, J&K	23536	rbcl	OL804183
71.	<i>Rosa moschata</i> Herm.	Bijbehara, Anantnag, J&K	23696	ITS	OK178265
72.	<i>Rosa moschata</i> Herm.	Bijbehara, Anantnag, J&K	23696	matK	OL804178
73.	<i>Rosa moschata</i> Herm.	Bijbehara, Anantnag, J&K	23696	rbcl	OL804182
74.	<i>Rosa moschata</i> Herm.	Sohal, Paddar, J&K	23546	ITS	OK178267
75.	<i>Rosa moschata</i> Herm.	Sohal, Paddar, J&K	23546	matK	OL804181
76.	<i>Rosa moschata</i> Herm.	Sohal, Paddar, J&K	23546	rbcl	OL804184
77.	<i>Rosa webbiana</i> Wall. ex Royle	Dawar, Gurez, J&K	23587	ITS	OK178273
78.	<i>Rosa webbiana</i> Wall. ex Royle	Dawar, Gurez, J&K	23587	matK	OM056521
79.	<i>Rosa webbiana</i> Wall. ex Royle	Dawar, Gurez, J&K	23587	rbcl	OM056522
80.	<i>Rosa webbiana</i> Wall. ex Royle	Pehalgam, J&K	23549	ITS	OK178274
81.	<i>Rosa webbiana</i> Wall. ex Royle	Pehalgam, J&K	23549	rbcl	OM056523
82.	<i>Rosa webbiana</i> Wall. ex Royle	Bandipore, Kashmir, J&K	23565	ITS	OK185033
83.	<i>Rosa webbiana</i> Wall. ex Royle	Bandipore, Kashmir, J&K	23565	matK	OM056520
84.	<i>Rosa webbiana</i> Wall. ex Royle	Bandipore, Kashmir, J&K	23565	rbcl	OM056524
85.	<i>Rosa webbiana</i> Wall. ex Royle	Paddar, Kishtwar, J&K	23579	ITS	OK178278
86.	<i>Rosa webbiana</i> Wall. ex Royle	Paddar, Kishtwar, J&K	23579	matK	OM142127
87.	<i>Rosa webbiana</i> Wall. ex Royle	Paddar, Kishtwar, J&K	23579	rbcl	OM142128
88.	<i>Roscoea alpina</i> Royle	Seoz Dhar, Bhaderwah, J&K	23748	ITS	MW828323
89.	<i>Roscoea alpina</i> Royle	Seoz Dhar, Bhaderwah, J&K	23748	rbcl	OK148452
90.	<i>Roscoea alpina</i> Royle	Seoz Dhar, Bhaderwah, J&K	23748	<i>psbA-trnH</i>	OK148453
91.	<i>Roscoea purpurea</i> Sm.	Seoz Dhar, Bhaderwah, J&K	23726	ITS	MW828329
92.	<i>Roscoea purpurea</i> Sm.	Seoz Dhar, Bhaderwah, J&K	23726	rbcl	OK148454
93.	<i>Tinospora sinensis</i> (Lour.) Merr.	IIIM, Jammu, J&K	23402	ITS	MK256958
94.	<i>Tinospora sinensis</i> (Lour.) Merr.	IIIM, Jammu, J&K	23402	matK	MZ787606
95.	<i>Tinospora sinensis</i> (Lour.) Merr.	IIIM, Jammu, J&K	23402	rbcl	MZ787607
96.	<i>Tinospora sinensis</i> (Lour.) Merr.	IIIM, Jammu, J&K	23402	<i>psbA-trnH</i>	MZ787608
97.	<i>Tinospora sinensis</i> (Lour.) Merr.	Gurah Kalyal, Billawar, J&K	23413	ITS	MK256960
98.	<i>Tinospora sinensis</i> (Lour.) Merr.	Gurah Kalyal, Billawar, J&K	23413	matK	MZ787609
99.	<i>Tinospora sinensis</i> (Lour.) Merr.	Gurah Kalyal, Billawar, J&K	23413	rbcl	MZ787610
100.	<i>Tinospora sinensis</i> (Lour.) Merr.	Gurah Kalyal, Billawar, J&K	23413	<i>psbA-trnH</i>	MZ787611
101.	<i>Tinospora sinensis</i> (Lour.) Merr.	Pallan, Billawar, J&K	23411	ITS	MK256955
102.	<i>Tinospora sinensis</i> (Lour.) Merr.	Pallan, Billawar, J&K	23411	matK	MZ514101
103.	<i>Tinospora sinensis</i> (Lour.) Merr.	Pallan, Billawar, J&K	23411	rbcl	MZ514098
104.	<i>Tinospora sinensis</i> (Lour.) Merr.	Pallan, Billawar, J&K	23411	<i>psbA-trnH</i>	MZ514099
105.	<i>Trillium govanianum</i> Wall. ex D.Don	Chattergalla, Kathua, J&K	24256	ITS	MW832468
106.	<i>Trillium govanianum</i> Wall. ex D.Don	Chattergalla, Kathua, J&K	24256	rbcl	OK148455
107.	<i>Trillium govanianum</i> Wall. ex D.Don	Chattergalla, Kathua, J&K	24256	<i>psbA-trnH</i>	OK148456
108.	<i>Trillium govanianum</i> Wall. ex D.Don	Padder, Kistwar, J&K	23417	ITS	MK256963
109.	<i>Trillium govanianum</i> Wall. ex D.Don	Padder, Kistwar, J&K	23417	matK	MZ707916
110.	<i>Trillium govanianum</i> Wall. ex D.Don	Padder, Kistwar, J&K	23417	rbcl	MZ707919
111.	<i>Trillium govanianum</i> Wall. ex D.Don	Padder, Kistwar, J&K	23417	<i>psbA-trnH</i>	MZ514100
112.	<i>Trillium govanianum</i> Wall. ex D.Don	Tissa, Chamba, H.P.	CDR-4091	ITS	MZ647476
113.	<i>Trillium govanianum</i> Wall. ex D.Don	Tissa, Chamba, H.P.	CDR-4091	matK	MZ707917
114.	<i>Trillium govanianum</i> Wall. ex D.Don	Tissa, Chamba, H.P.	CDR-4091	rbcl	MZ707920
115.	<i>Trillium govanianum</i> Wall. ex D.Don	Tissa, Chamba, H.P.	CDR-4091	<i>psbA-trnH</i>	MZ707922
116.	<i>Trillium govanianum</i> Wall. ex D.Don	Budgam, Kashmir, J&K	24507	ITS	MW828333
117.	<i>Trillium govanianum</i> Wall. ex D.Don	Budgam, Kashmir, J&K	24507	matK	MZ707918
118.	<i>Trillium govanianum</i> Wall. ex D.Don	Budgam, Kashmir, J&K	24507	rbcl	MZ707921
119.	<i>Trillium govanianum</i> Wall. ex D.Don	Budgam, Kashmir, J&K	24507	<i>psbA-trnH</i>	MZ707923
120.	<i>Trillium govanianum</i> Wall. ex D.Don	Anantnag, Kashmir, J&K	24037	ITS	MW828335
121.	<i>Trillium govanianum</i> Wall. ex D.Don	Anantnag, Kashmir, J&K	24037	matK	MZ643945
122.	<i>Trillium govanianum</i> Wall. ex D.Don	Anantnag, Kashmir, J&K	24037	rbcl	MZ643946
123.	<i>Trillium govanianum</i> Wall. ex D.Don	Anantnag, Kashmir, J&K	24037	<i>psbA-trnH</i>	MZ643947

LIST OF PUBLICATIONS

Research articles (in chronological order)

1. F Fayaz, K Singh, **Sumeet Gairola***, Z Ahmed, BA Shah. 2023. A comprehensive review on phytochemistry and pharmacology of *Rosa* species (Rosaceae). *Current Topics in Medicinal Chemistry*. 23: (In Press) (ISSN: 1568-0266) Bentham Science [DOI: 10.2174/0115680266274385231023075011] (IF 2022: **3.4**) (NAAS Rating: **9.40**)
2. BA Lone, M Tabassum, A Bhushan, D Rani, U Dhiman, A Ahmad, HA Mir, PN Gupta, DM Mondhe, **Sumeet Gairola**, P Gupta. 2023. Trilliumosides K and L, two novel steroidal saponins from rhizomes of *Trillium govatanum*, as potent anti-cancer agents targeting apoptosis in A-549 cancer cell line. *Frontiers in Chemistry*, 11: 1306271. (ISSN: 2296-2646) Frontiers [DOI: 10.3389/fchem.2023.1306271] (IF 2022: **5.5**) (NAAS Rating: **11.50**)
3. S Bhat, A Sharma, P Sharma, K Singh, M Kundan, M Fayaz, MA Wajid, **Sumeet Gairola***, P Misra. 2023. Development and analysis of de novo transcriptome assemblies of multiple genotypes of *Cymbopogon* spp. reveal candidate genes involved in the biosynthesis of aromatic monoterpenes. *International Journal of Biological Macromolecules*. 253 (8): 127508 (ISSN: 0141-8130) Elsevier [DOI: 10.1016/j.ijbiomac.2023.127508] (IF 2022: **8.2**) (NAAS Rating: **14.20**)
4. J Sharma, K Singh, **Sumeet Gairola***. 2023. Plants used in female reproductive healthcare by the Gujjar tribe of the sub-Himalayan region of Uttarakhand, India. *Journal of Herbal Medicine*, 42: 100786. (ISSN: 2210-8033) Elsevier [DOI:10.1016/j.hermed.2023.100786] (IF 2022: **2.4**)
5. A Bhushan, D Rani, BA Lone, M Tabassum, AP Gupta, DM Mondhe, **Sumeet Gairola**, PN Gupta, P Gupta. 2023. Costunosides A-C: cytotoxic sesquiterpene lactones from the rhizomes of *Aucklandia costus* Falc., *Natural Product Research*, (ISSN: 1478-6419) [DOI: 10.1080/14786419.2023.2275743] (IF 2022: **2.2**) (NAAS Rating: **8.20**)
6. C Kumar, G Chandan, M Kushwaha, A Kumar, S Kaur, A Kumar, G Yadav, **Sumeet Gairola**, R Vishwakarma, N Satti, M Verma. 2023. Discovery of Anti-NLRP3 inflammasome, Immunomodulatory Phytochemicals from the Extract of *Habenaria intermedia* D. Don: an Unexplored Plant Species. *ACS Omega*. 8(34): 31112 (ISSN: 2470-1343) [DOI: 10.1021/acsomega.3c03071] ACS Publications (IF 2022: **4.1**) (NAAS Rating: **10.10**)
7. P Kumar, K Singh, JF Lone, B Kumar, **Sumeet Gairola***. 2023. Histo-Anatomical characterization of aerial and root crude samples of *Withania somnifera* (L.) Dunal. *Indian Journal of Natural Products and Resources*, 14(2): 292-299. (ISSN: 0976-0512) [DOI: 10.506042/ijnpr.v14i2.4214] CSIR-NISCRP (IF 2022: **0.8**)
8. P Sharma, MA Wajid, M Fayaz, S Bhat, AK Nautiyal, S Jeet, AK Yadav, D Singh, R Shankar, **Sumeet Gairola**, P Misra. 2023. Morphological, phytochemical, and transcriptome analyses provide insights into the biosynthesis of monoterpenes in *Monarda citriodora*. *Planta*, 258: 49 (ISSN: 0032-0935), Springer [DOI: 10.1007/s00425-023-04207-y] (IF 2022: **4.2**) (NAAS Rating: **10.30**)
9. JF Lone, B Kumar, K Singh, IA Wani, **Sumeet Gairola***. 2023. Pollen morphology and variability among the wild *Cannabis sativa* L. from the Western Himalaya, India. *Flora*, 152342 (ISSN: 0367-2530), Elsevier [DOI: 10.1016/j.flora.2023.152342] (IF 2022: **1.9**) (NAAS Rating: **7.90**)
10. M Fayaz, M Kundan, U Gani, P Sharma, MA Wajid, K Katoch, V Babu, **Sumeet Gairola**, P Misra. 2023. Identification of Lipxygenase gene repertoire of *Cannabis sativa* and functional characterization of CsLOX13 gene. *Plant Science*, 334, 111780 (ISSN: 0168-9452), Elsevier [DOI: 10.1016/j.plantsci.2023.111780] (IF 2022: **5.2**) (NAAS Rating: **11.20**)
11. Z Batool, K Singh, **Sumeet Gairola***. 2023. Medicinal plants traditionally used in the health care practices by the indigenous communities of the Trans-Himalayan region of Ladakh, India. *Journal of Ethnopharmacology*, 116837 (ISSN: 0378-8741), Elsevier [DOI: 10.1016/j.jep.2023.116837] (IF 2022: **5.4**) (NAAS Rating: **11.40**)
12. A Bhushan, D Rani, M Tabassum, S Kumar, PN Gupta, **Sumeet Gairola**, AP Gupta, Prasoon Gupta. 2023. HPLC-PDA method for quantification of bioactive compounds in crude extract and fractions of *Aucklandia costus* Falc. and cytotoxicity studies against cancer cells. *Molecules*, 28(12): 4815. (ISSN: 1420-3049) [DOI: 10.3390/molecules28124815] (IF 2022: **4.6**) (NAAS Rating: **10.60**)
13. K Singh, YP Sharma, **Sumeet Gairola***. 2023. Distribution status and ethnomedicinal importance of genus *Rosa* L. (Rosaceae) in India. *Ethnobotany Research and Applications*, 25:1-22. (ISSN: 1547-3465).

14. P Kumar, K Singh, A Bhushan, AP Gupta, V Babu, P Gupta, **Sumeet Gairola***. 2023. Botanical, Chemical, and DNA Barcode-Based Authentication of Herbal Ayurvedic Medicines from the Menispermaceae. *Revista Brasileira de Farmacognosia*, 33, 300-309 (ISSN: 1981-528X) [DOI: 10.1007/s43450-023-00369-8] (IF 2022: **1.6**)
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(Sumeet Gairola)

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