# CURRICULUM VITAE

### Gowhar Iqbal, B.F.Sc, M.F.Sc

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# EDUCATION

#### Master of Fisheries Science (Fish Biotechnology)

Major: Fish Biotechnology

 Department of Fish Biotechnology, Central Institute of Fisheries Education, Mumbai, India. 400061

Thesis: **Molecular Characterization of Nematode Parasite Infecting Fish of Barvi Reservoir, Maharashtra**

# PUBLICATIONS (PUBLISHED)

**Review Articles**

1. Shahid Gul, **Gowhar Iqbal\*,** Nahida Quyoom, Shakir Ahmad Mir, Aadil Hussain Magloo, Naila M. Bhat and Mohd Ashraf Malik: *Atractosteus spatula*, a first-record exotic alligator gar from Dal Lake in Kashmir, India, poses a potential danger to local fish species. ECOLOGY, ENVIRONMENT AND CONSERVATION, Ref.No. EEC-8640
2. Basins Devarshi Ranjan, Priyanka Verma, Preeti Maurya, **Gowhar Iqbal,** Mayank Bhushan Singh, and Aditya Kumar Upadhyay. Ganges River Dolphin (*Platanista gangetica gangetica*): An Indicator of Ecosystem Health in the River; Uttar Pradesh J. Zool., vol. 44, no. 20, pp. 173-180, 2023; **Article no.UPJOZ.2827**
3. **Iqbal G**, Suman S, Sangeetha S, Quyoom N, Pavan Kumar A and Dar SA. Mini-Review on Molecular Markers for the Identification of Fish Nematode Parasites. International Journal Oceanography & Aquaculture. 2023, 7(3): 000251. https://doi.org/10.23880/ijoac-16000251
4. Gul S, **Iqbal G\*,** Mir SA, Malik MA; Under-Water Organic Farming: Global and Indian Status. International Journal Oceanography & Aquaculture. 2023; 3(2): 1018.
5. **Iqbal, G.,** Quyoom, N., Singh, L.S., Ganpatbhai, A.V.K., Bhat, N.M., Gul, S., Malik, M.A., Mohanty, A., Mir, S.A. and Dar, S.A., Genome Editing Technology in Fishes. Current Journal of Applied Science and Technology 42(23):20-26.
6. **Gowhar Iqbal\***, Shafiya Mushtaq, Ad Viral Kumar Ganpatbhai, Lukram Sushil Singh1and Sangeetha S (2023) Genotoxicity Unveiled: A Mini-review of Mechanisms, Detection, and Implications. Chronicle of Aquatic Science 1(2): 44-50 **ARTICLE ID: CoAS\_V1IS2\_06.**
7. **Gowhar Iqbal\*,** Shafiya Mushtaq, Lukram Sushil Singh and Ad. Viral Kumar Ganpatbhai. Fungal diseases in aquaculture: A review. The Pharma Innovation Journal. 2023; 12(7S): 1959-1962.
8. Jan, S., Gul, S., **Iqbal, G.** and Bhat, F. A. (2023) “Risk Factors in the Natural Habitat of Fish: A Review”, *Asian Journal of Agricultural Extension, Economics & Sociology*, 41(9), pp. 691–698. doi: 10.9734/ajaees/2023/v41i92093.
9. **Iqbal GZ\*,** Ahmad Dar S, Quyoom N, Malik MA, Gul S, Ahmad Mir S, et al. CRISPR/Cas9-Gene Editing Technology. World J Aquac Res Development. 2023; 3(1): 1017.
10. Amrita Mohanty, **Gowhar Iqbal\*,** Lukram Sushil Singh, & Viral Kumar Ganpatbhai. (2023). Broad Aspects of Chemotherapeutic mRNA. <https://doi.org/10.5281/zenodo.8181065>.

**Popular Articles**

1. Uzma Nazir, **Gowhar Iqbal\*,** Shahid Gul and Showkat Ahmad Dar Recirculating Aquaculture system (RAS), Biofloc technology (BFT) and Aquaponic system: an Overview: AgriTech Today Magazine Volume: 01, Issue: 05, Page no. 13-15, August 2023.
2. **Gowhar Iqbal\*,** Shafiya Mushtaq and Shahid Gul; Mendel’s Life and His Contribution: JUST AGRICULTURE Vol. 3 Issue-12, August 2023 (e-ISSN: 2582-8223) Page. No. 237-243.
3. Pinak.K.Bamaniya, **Gowhar Iqbal**, Ishita.J. Bambhaniya: Sewage and its impact on aquatic ecosystems AgriGate Magazine Volume: 03, Issue: 08, Page No. 327-330, July 2023. Article ID: AG-V03-108-41
4. Shahid Gul, Shakir Ahmed Mir, **Gowhar Iqbal**, Adil Hussain Magloo; Kashmir: The Angler’s Paradise JUST AGRICULTURE Vol. 3 Issue-12, August 2023 (e-ISSN: 2582-8223) Page. No. 205-208.
5. **Gowhar Iqbal\*,** Shafiya Mushtaq; Mycotic Disease in Fishes Aqua Star Magazine, August Issue, Page No. 99.
6. Ad Viral Kumar Ganpatbhai, **Gowhar Iqbal\*,** Lukram Sushil Singh; Applications of Biotechnology In Aquaculture Aqua Star Magazine, August Issue, Page No. 85- 86.
7. Shafiya Mushtaq, **Gowhar Iqbal\*,** and Shahid Gul; Digital Image Processing and Its Application in Fisheries AgriTech Today Magazine Volume: 01, Issue: 04, Page No. 85-88, July 2023.
8. **Gowhar Iqbal\*,** Rida Reyaz, Showkat Ahmad Dar; INTEGRATED MULTI- TROPHIC AQUACULTURE (IMTA) AgriGate Magazine Volume: 03, Issue: 07, Page No. 327-330, July 2023.
9. **Gowhar Iqbal\*,** Shahid Gul, Ubaid Qayoom, Showkat Ahmad Dar, Nail M. Bhat, Zahoor Mushtaq and Amrita Mohanty; Surrogate Technology and its Applications in Aquaculture: AgriTech Today Magazine Volume: 01, Issue: 04, Page No. 62-64, July 2023.
10. **Gowhar Iqbal\*,** Showkat Ahmad Dar and Yaqoota Maqbool (2023); Status of whole Genome Sequencing in Fisheries and Aquaculture. Chronicle of Aquatic Science 1(1): 40-44 **ARTICLE ID: CoAS\_V1IS1\_08/42-44.**

**Book Chapters**

1. **Gowhar Iqbal\*** and Ad Viral Kumar Ganpatbhai, Lukram Sushil Singh; Plasmid-Origins of Replication, Copy Number Control and Incompatibility Classes; The book titled ‘’Advances in Biotechnology and Bioscience’’ Volume – 14, Chapter – 3 Page. No. 61-70, **Ref. No.:** LTFAAH-05-0401; **ISBN:** 978-93-5570-772-7.
2. Shakir Ahmad Mir, Shahid Gul, **Gowhar Iqbal,** Uzair Shafiq; "Diffusion and Adoption of Innovations in Agriculture" of published book entitled "Advances in Agricultural Extension’’ Volume – 18, having ISBN 978-93-5570-782-6. **Ref. No.:** AAEXT-18-0804; **ISBN:** 978-93-5570-782-6.
3. **Gowhar Iqbal\*,** Nahida Quyoom, Shahid Gul, Shakir Ahmad Mir, AD Viral Kumar and Lukram Sushil Singh; Nanopore Technology and its Applications" Edited book titled "Recent Trends in Nanochemistry and Nanotechnology" (Volume - 2)". **Ref. No.: RTNN-02-04.**
4. **Gowhar Iqbal\*,** Ad. Viral Kumar Ganpatbhai and Lukram Sushil Singh; Parasitic Disease in Aquaculture and its Management Edited Book titled "Latest Trends in Fisheries and Aquatic Animal Health’’ (Volume - 5)" Volume – 5, Chapter – 3 Page. No. 27-36, **Ref. No.:** LTFAAH-05-04; **ISBN:** 978-93-5570-772-7.
5. Nahida Quyoom and **Gowhar Iqbal\***; Crustacean Immune System and their Responses; The book titled ‘’ Latest trends in Fisheries and Aquatic Animal Health’’ Volume – 05, Chapter – 4 Page. No. 37-51; **ISBN:** 978-93-5570-772-7.
6. **Gowhar Iqbal\*,** Sangeetha S, Amrita Mohanty, Pinak Bamaniya; Cold Water Fisheries Culture The book "Traditional and Recent Aquaculture Practices". **Ref. No.: A250/23.** Volume – 01, Chapter – 11 Page. No. 167-175; **Ref. No.: A250/23.** **ISBN:** 978-93-5570-811-3
7. Shafiya Mushtaq, **Gowhar Iqbal\*,** Ad Viral Kumar Ganpatibhai, Saima Jan and Showkat Ahmad Dar; Aquaponics: A Promising Tool for Sustainable Agriculture Edited book titled "Research and Review in Fisheries & Aquatic Sciences (Volume - 1)". **Ref: RRFAS-01-02.**
8. Bamaniya Pinak, **Gowhar Iqbal\*,** Ishita Bambhaniya; Integrated Multi-Trophic Aquaculture System (IMTA) The book "Traditional and Recent Aquaculture Practices.” Volume – 01, Chapter – 08 Page. No. 107-125; **Ref. No.: A250/23.** **ISBN:** 978-93-5570-811-3
9. Shahid Gul, Shakir Ahmad Mir, Aadil Hussain Magloo, **Gowhar Iqbal,** Uzair Shafiq Khanday and Mohd Ashraf Malik; Aquatic Ecosystems: Benefits, Threats and Solutions; Edited book titled Research Trends in Fisheries and Aquatic Sciences (Volume - 17)". **Ref. No.: RTFAS-17-03.**

# HONORS AND AWARDS

1. Best M.F.Sc Thesis Award On the occasion of 5th INTERNATIONAL CONFERENCE "Global Insights on Research and Development in Agriculture, Horticulture and Allied Sciences" jointly organized by G.H. Raisoni University, Saikheda (MP), just Agriculture Group & AEEFWS, Chandigarh held on 05-07 Oct 2023 at G.H. Raisoni University, Saikheda (MP). Certificate No. AEEFWS/05/23/1610.
2. Awarded Best Researcher Award for contribution to the field of FISH BIOTECHNOLOGY on the occasion of Teachers’ Day, 5th September 2023, Organized by Chronicle of Aquatic Science. Certificate No. COAS/AW/2023/34.
3. Got Certificate of Appreciation from Director/VC & Joint Director, ICAR-CIFE Mumbai on innovative ideas and Garbage FISH presented as instillation during FISHERISTIC: Future of Fisheries, Imagined Now (CIFEST-ONE23) celebrations organised during 20-22 March 2023 at ICAR-CIFE, Mumbai.
4. Got Second position in Poster Presentation for the Paper entitled “Molecular Characterization of Nematode Parasite Infecting Fish of Barvi Reservoir, Maharashtra” under the theme “Theme III: Biotechnological Interventions for Improving Fisheries Production” from 19-21st July 2023 organised by the College of Fisheries Kishanganj Alumni Association (COFKAA) in collaboration with All India Agricultural Students Association (AIASA)-Fisheries Chapter at College of Fisheries (BASU), Kishanganj Bihar, India during 19-21 July 2023.
5. Awarded Best Popular Article Award having Article id COAS-V11S1-08, entitled “Status of whole Genome Sequencing in Fisheries and Aquaculture” published in volume 1 issue 1, June 2013 in Chronicle of Aquatic Science, a peer-reviewed journal. Certificate No. COAS-AW-02.
6. Awarded ICAR-CIFE Institutional Fellowship to pursue a Doctoral degree in Fisheries Sciences at Central Institute of Fisheries Education, Mumbai, from 2022-2025 with All India Rank 02.
7. Got an Appreciation Certificate from the vice chancellor of SKUAST-K for outstanding performance in the NTA ICAR- JRF/SRF NTA 2020 Exam.
8. Awarded Fellowship sponsored by Indian Council of Agriculture Research, New Delhi, India, to pursue a Masters of Fisheries Sciences in Central Institute of Fisheries Education, Mumbai, from 2018–2020 with All India Rank 41.
9. Achieved the third position (3 Times) in an inter-college quiz competition where students from 05 colleges of SKUAST-K Participated.
10. Got an Appreciation Letter from the vice chancellor of SKUAST-K for outstanding performance at the Third Student Convention held in 2019 at ICAR- CIFE Mumbai.
11. Got 3rd rank (Group) at the Third Student Convention held in 2019 at ICAR- CIFE, Mumbai.

# POSTER/ ORAL PRESENTATIONS

1. Abstract entitled “**Advancing Aquaculture Through Vaccination: From Disease Management to Sustainable Growth**” has been presented for Oral presentation at the 5th International Conference “Global Insights on Research and Development in Agriculture, Horticulture and Allied Sciences” (GIRDAHA 2023) jointly organized by G.H. Raisoni University, Saikheda (MP), just Agriculture Group & AEEFWS, Chandigarh held on 05-07 Oct 2023 at G.H. Raisoni University, Saikheda (MP). Certificate No. GIRDAHA/H/2068.
2. Abstract entitled “Molecular Characterization of Nematode Parasite Infecting Fish of Barvi Reservoir, Maharashtra” has been presented for Poster presentation under the theme “Theme III: Biotechnological Interventions for Improving Fisheries Production” organized by the College of Fisheries Kishanganj Alumni Association (COFKAA) in collaboration with All India Agricultural Students Association (AIASA)-Fisheries Chapter at College of Fisheries (BASU), Kishanganj Bihar, India during 19-21 July 2023.
3. Abstract entitled "Importance of Recombinant DNA Technology in Fisheries and Aquaculture" has been presented for Oral presentation at “International Virtual Conference on Sustainable Blue Planet: Conservation, Augmentation and Remediation (SBPCAR 2023)” organized by SATHYABAMA INSTITUTE OF SCIENCE & TECHNOLOGY (Deemed to be University) Rajiv Gandhi Road, Chennai-600119, Tamilnadu, INDIA from 8th & 9th June 2023.

# TRAININGS/ WORKSHOPS/ WEBINARS

1. Participated in the Hands-on Training on “Training Schedule for NGS Data Analysis with Special Reference to Transcriptomics and Metagenomics” organized by ICAR- Central Institute of Fisheries Education, Mumbai from 16th -20th October.
2. Participated in the Workshop/Hands Training on “Bioinformatics Essentials: Navigating Integrative Omics Data” at ICAR- Central Institute of Fisheries Education, Mumbai, held from 11-15 SEPTEMBER 2023 Program under SCSP Scheme.
3. Participated in the NAHEP Sponsored Workshop on “Techniques in Health Management” organized by ICAR- Central Institute of Fisheries Education, Mumbai on September 7, 2023.
4. Participated in a Webinar on “PROMOTION OF START-UPS AND INNOVATION IN THE FISHERIES SECTOR” on 18.08.2023 organized by Advanced Biotech Innovation Centre-Aquamarine in support of Karnataka Innovation and Technology Society (KITS), Govt. of Karnataka
5. Participated in the sensitization Workshop on “Introduction to Virtual Reality Modules” held on 5-7 July 2023 at ICAR- Central Institute of Fisheries Education, Mumbai. Organized jointly with ICAR-IASRI, New Delhi
6. Attended an online “Workshop in Bioinformatics” program organized by BDG Lifesciences (OPC) Pvt Ltd on 11th June 2023.
7. Participated in the National Workshop on “LUMPY SKIN DISEASE IN INDIA: CURRENT SCENARIO AND FUTURE CHALLENGES” organized by ICAR-NIVEDI, Bengaluru, on 20th January 2023.
8. Participated in the National CME on “Recent advances in cancer research: Diagnostics to Therapeutics” conducted by Central Molecular Laboratory G B Pant Institute of Postgraduate Medical Education and Research (GIPMER), New Delhi and supported by the Government of Biotechnology Government of India on 26th March 2022.
9. Attended a one-month “Exposure Training” program at ICAR- NBFGR, Lucknow, from Nov 11- Dec 10, 2021.
10. Participated in the National Webinar on “Casting into the future of Fisheries and Aquaculture”, organized by the School of Fisheries Centurion University of Technology and Management (CUTM), Odhisa, on 22nd and 23rd June 2021.
11. Participated in the webinar on “Remote Sensing and Fisheries Management” organized by the Division of Fisheries Resource Management, Faculty of Fisheries, Rangil, Ganderbal, SKUAST-K and sponsored by NFDB, SKUAST-K on 23rd October 2021.
12. Hands-on training in Fish Processing for Entrepreneurship Development from 10th to 19th Feb 2020, organized by the Faculty of Fisheries SKUAST-K.

### Molecular Biology:

* + DNA/RNA isolation
	+ cDNA preparation
	+ PCR/qPCR/qRT-PCR
	+ SDS-PAGE
	+ Species Identification at the Molecular Level
	+ Sanger Sequencing, Plasmid Isolation
	+ Complement cell preparation and Transformation,
	+ Gel Elution

### Microbiology:

* + Media preparation
	+ Bacterial culturing
	+ Dilution plating

# TECHNICAL SKILLS

### Instrumentation:

* + - Tissue homogenizer
		- UV Spectrophotometer
		- Bio-Rad qPCR machine
		- Sonicator
		- Nano-drop
		- Fluorescent Microscope

###  Animal Work:

 Fish and Parasite handling

###  Bioinformatics

* Expertise in **GENE Runner,**
* **Snap Gene, MEGA X1, Finch TV** Software
	+ - * + Molecular Docking, Homology Modelling,
				+ Phylogeny Study, Primer Designing

# LEADERSHIP ROLE

1. Class representative for the year (2018 - 2019), Undergraduate degree, College of Fisheries SKUAST-K
2. Helped with check-in procedures for incoming national students.
3. Assisted incoming international students with information on procedures and resources for their successful transition to campus.

# MEMBERSHIP

* 1. Life Membership of Agro Environment Education And Farmer’s Welfare Society (Regd.) Hoshiarpur Punjab, India. Enrolled on Date 05/10/1023.Membership Number: AEEFWS/L/2516.
	2. Membership of All India Agricultural Students Association (AIASA).
	3. Reviewer Board Membership (Membership id: CoAS-RBM-06) of Chronicle of Aquatic Sciences Journal in Fish Biotechnology specialization.
	4. Review Board Member of ACTA SCIENTIFIC VETERINARY SCIENCES Journal.

# REFERENCES

### Dr. Annam Pavan Kumar (M.F.Sc Supervisor)

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### Assistant Professor Dr. Showkat Ahmad Dar

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