Curriculum vitae: Dr Gil Ha Yoon

1. Personal details

Full name:	Gil Ha Yoon (Dr.)
Nationality:	Korea (Rep.)
Position:	Assistant Professor, SQU
Present address:	PO BOX 34, PC 123, SQU, Muscat, Sultanate of Oman
Current employer:	Sultan Qaboos University, Sultanate of Oman
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2. Key experience

- 25 years' experience in fish culture to develop new species and systems in field and research.
- Extension and administrative services for marine aquaculture as a national researcher in Korea.
- Former Korean advisor to the Peruvian Government on marine fish culture practices.
- Committee member of marine cage aquaculture evaluation in Korea.
- Monitoring diseases on Salmon Cage farms around Scotland, UK.
- Consultancy of fisheries quality and safety researches on wild fishes, FQCC in Oman.
- Teaching experience of aquaculture and culture systems at Sultan Qaboos University in Oman.
- Consultancy of fish disease monitoring for Blue Waters in Oman.

3. Education

1986 – 1991 B.Sc. Fisheries Science (Aquaculture). Je-ju National University, Korea
Main topics covered were in the hatchery and culture of marine fishes.

1991 – 1994 M.Sc in Fisheries Science. Pukyong National University, Busan, Korea
M.Sc. Thesis "Economical benefits of high density culture of sex reversed all male Nile tilapia, *Oreochromis niloticus.*
Training received in: Fish culture, Management of aquaculture systems; Fish breeding.

1994-1998 Ph.D Institute of Aquaculture, University of Stirling, Stirling, UK
Ph.D. Thesis "Studies on the monogenean, *Entobdella hippoglossi* Muller, 1776 parasitising a commercially important cultured fish, the Atlantic halibut, *Hippoglossus hippoglossus* Linnaeus, 1758."
Training received in: Fish pathology (Fish Vet), New aquaculture species.

4. Career history

2012 – Present: Assistant Professor at Department of Marine Science and Fisheries,
Sultan Qaboos University, Sultanate of Oman

Teaching Subject:
Aquaculture, Aquaculture Engineering, Fish Pathology, Seafood Quality and processing, Aquatic animal health Management, Ichthyology, Marine vertebrate zoology, Biometry.

Research Subject:
1. Development of suitable aquaculture systems for Oman such as Biofloc Aquaculture system, Aquaponics and Recirculating Culture system.
2. Development of Omani marine ornamental fish, bivalve and commercial fish.
3. Screening of aquatic pathogens from commercially important Omani fishes.
4. Finding alterative natural chemicals from Arabian plants for aquaculture.
5. Negative effect of Red tide to fish
6. Development of probiotics from local products.

Consultancy:
1. Monitoring of Fish pathogens at commercial cage fish farm and hatchery (Blue waters) in Oman.
2. How to use processing waste water for aquaculture and hydroponics (Al-Safa chicken company and Al-Masa fish processing company).

Notable Activities:
"Blue Revolution" that is going on in Oman and the prospect of teaching, training and undertaking research that is being invested in the aquaculture of new species. Working within the University there is a fantastic opportunity to work with an enthusiastic, dynamic community of young men who through their education can help shape Oman's future. My main research area is to develop new species in the appropriated culture system suitable in Omani environment such as aquaponic, treated water for aquaculture from waste water, biofloc technology for shrimp and tilapia. Recently I have started to develop reproduction of marine bivalves to enhance local fisheries productivity. Also I focus my research on prevention and treatment of diseases from aquaculture not only diagnosis and treatment but also development of alternative antibiotics and vaccines for fish diseases. Research on physical damage of fish due to natural hazard of red tide has been performing.

2009 – 2012: Expert of Fish quality and safety at Ministry of Fisheries Wealth, Sultanate of Oman.

Notable Activities:
1. Supervising and conducting screening of zoonotic aquatic pathogens from commercially important Omani wild fishes to develop future aquaculture industry and improvement of safety and quality matters on wild fisheries products.
2. Organizing and managing to development of fisheries infra structure.
3. Established laboratory for detection of aquatic pathogens
4. In this period, I found new world record species of gill monogenean from King Soldier Bream, *Argyrops spinifer* and named *'Omanicotyle heterospina*'

2007 – 2009: Research Fellow at University of Stirling, UK

Notable Activities:
1. Conducting a national screening program for the Foods Standard Agency, an independent UK government department, for potential zoonotic parasites (*e.g. Anisakis* sp.) within wild and farmed fish at the cages.
2. Supervised MSc student projects, one of which was awarded a distinction for

research excellence in 2007.
3. Continued to broaden my personal knowledge into a range of fish pathogens, diagnostic methods, chemotherapy and fish culture practices.

2005 – 2007: Post –Doctoral Research Fellow at University of Stirling, UK

Notable Activities:
1. Bioflavonoids as alternative antibiotics for fish chemotherapeutants to control of fish pathogens funded by EU Marie Curie.
   With the recent ban on the use of compounds such as malachite green, dimetradizole and some antibiotics for the control of pathogenic agents in food fish production, I screen a broad range of natural plant extracts and to assess their efficacy in either killing or inhibiting the growth of selected fish pathogens. The works had centered on the control of the protozoan ciliate parasite *Ichthyophthirius multifiliis* ("whitespot"), the parasitic oomycete *Saprolegnia parasitica* and several genera of pathogenic bacteria (*Listonella*, *Edwardsiella*, *Aeromonas* and *Streptococcus*).

2003 – 2003: An Advisor on aquaculture for the Peruvian Government dispatched by KOICA

Notable Activities:
1. An Advisor for the Peruvian Government to select the most suitable aquaculture species, sites and systems for Peru. I was Selected in 2003 by the Korean International Cooperation Agency (KOICA). Site selection and screening potential aquaculture species from freshwater and marine water through whole nation. After my screening Peruvian aquaculture started and now growing very fast.

1998 – 2005: Researcher at the National Fisheries Research & Development Institute (NFRDI), Korea.

Notable Activities:
1. Develop new culture methods for a variety of marine species such as the olive flounder (*Paralichthys olivaceus*), river puffer (*Takifugu obscurus*), black sea bream (*Acanthopagrus schlegeli*) and sea bass (*Lateolabrax japonicus*).
2. Development of marine recirculating aquaculture system and multi layers aquaculture system.
3. Fish disease diagnosis (lab & field) and screening and treatment of aquatic pathogens.
4. Technical extension services for Aquaculture species in Korea
5. High density culture of marine fishes such as seabass, seabream and puffer fish into freshwater recirculating system.
6. Development of culture methods for endangered and exotic fish species, Cage Koi carp culture.
7. Committee member on a national panel that decided what aquaculture species can be introduced into Korea.
8. Elected as a committee member of marine cage aquaculture evaluation in Korea.

1992 – 1997: M.SC at Pukyong National University, KOREA and Ph.D at Institute of Aquaculture, University of Stirling, UK.

M.Sc: Managed University fish farm and supervised BSc students. To find benefits of high density of sex reversed all male tilapia. Management of aquaculture systems.

Ph.D: Find possible threaten of fish pathogens for newly developed commercially important cultured fish, the Atlantic halibut, *Hippoglossus hippoglossus*.

5. List of main research publications

Maryam Al Sawafi, Miyoung Cho, Adil Al Sulaimani & GilhaYoon (2021) Infection status and microhabitat of polyopisthocotylean Monogenea found on the gills of goldlined seabream, *Rhabdosargus sarba*, from Musairah Island, Oman. J. Fish Pathol., 34(1), 55-61.

Balqees Al-Rashdi, Wenresti Gallardo1, Gilha Yoon & Hussein Al-Masroori (2020). Optimal Density of Asian Seabass (*Lates calcarifer*) in Combination with the Omani Abalone (*Haliotis mariae*), Brown Mussel (*Perna perna*) and Seaweed (*Ulva fasciata*) in a Land-based Recirculating Integrated Multi-trophic Aquaculture (IMTA) System. Journal of Agricultural and Marine Sciences. Journal of Agricultural and Marine Sciences 25(2), 13– 21.

Wafaa Al-Rawahi , Myong Ae Park & Gilha Yoon (2019). The Isolation of Koi Herpesvirus from Ornamental Fish Imported into The Sultanate of Oman: Implications for Biosecurity. IOSR Journal of Agriculture and Veterinary Science 12, 17-22.

Buthaina Al Khaziri, Azhar Al Busaidi, Adil Al Sulimani, Najla Al Mandhari & Gilha Yoon (2018). Treatment of bacterial infection responsible for high mortality rates in cultured, juvenile barramundi, Lates calcarifer, using henna, Lawsonia inermis. Journal of Agricultural and Marine Sciences. Journal of Agricultural and Marine Sciences 23, 76– 80.

Gilha Yoon, Hajer Al-Kaabi, Um Kalthoum Al-Kindi, Salem Khoom, Miyoung Cho & Myong Ae Park (2015). The mortality of Haliotis mariae (Haliotidae: Mollusca) in Oman: a case study. Agricultural and Marine Sciences 19(1), 73-77.

Gilha Yoon, Najiya Al-Saadi & Aisha Ambuali (2015). Gill histology of Nile tilapia Oreochromis niloticus following chronic and acute exposure to ammonia. Agricultural and Marine Sciences 19(1), 66-72.

Gilha Yoon, Hisham Al-Adawi & Andrew Shinn (2015). The gill monogenean communities on three commercially important sparid fish in Omani waters. Agricultural and Marine Sciences 19(1), 54-61.

Gil Ha Yoon, Sarah Al-Jufaili, Mark A Freeman, James E Bron, Giuseppe Paladini and Andrew P Shinn (2013). Omanicotyle heterospina n. gen. et n. comb. (Monogenea: Microcotylidae) from the gills of Argyrops spinifer (Forsskål) (Teleostei: Sparidae) from the Sea of Oman. Parasites & Vector 6, 170.

Caruana, S., Yoon, G.H., Mackie, J.A. & Shinn, A.P. (2012) The efficacy of selected crude plant extracts and bioflavonoids in controlling infections of Saprolegnia parasitica (Coker) (Saprolegniales; Fungi). Diseases of Aquatic Organisms. Aquaculture, 358-359, 146–154.

Shinn, A.P., Picón-Camacho, S., Bron, J.E., Conway, D., Yoon, G.H., Hunter, R., Guo, F.C. & Taylor, N.G.H. (2012) The anti-protozoal activity of bronopol on the key life-stages of Ichthyophthirius multifiliis Fouquet, 1876 (Ciliophora). Veterinary Parasitology, 186, 229– 236.

Yoon, G.H., Caruana, S., Mackie, J.A., Freeman, M.A. & Shinn, A.P. (2007) The efficacy of selected crude plant extracts and bioflavonoids in controlling infections of *Saprolegnia parasitica* (Coker) (Saprolegniales; Fungi). *Parassitologia*, 49 (2), 383.

Yoon, G.H., Jo, J-Y., Kim, Y. & Kim, I-B. (2002) Growth of sex reversed Nile tilapia, *Oreochromis niloticus* in a closed recirculating culture system. *Fisheries Science Technology*, 5 (1), 59-63.

6. Published books

Park, M.W., Yoon, G. H., Choi, D. L. & Kim, J. W. (2002) The analysis of ecological hazards associated with the introduction of exotic fish species into Korean water bodies. 170p.

Kim, J. W., Park, M. A., Yoon, G. H., Kim,Y. C., Choi, H. S., Choi, D. L., Cho, M. Y., Do, J. W., Kim, M. S. (2004) Diagnostic guide of Korean aquatic animal diseases. 230p.

Kim, J. W., Park, M. A., Yoon, G. H., Kim,Y. C., Choi, H. S., Choi, D. L., Cho, M. Y., Do, J. W., Kim, M. S. (2005) Fish disease guide book, *Hankook Susansinbosa*, 191p.

Mushtaque Ahmed, Mahad Baawain, B. S. Choudri, Gil Ha Yoon, Ahmed Al-Busaidi, Seif Al Adawi & Fauzul Marikar (2014). Wastewater treatment and reuse at A'Saffa poultry farm at Thamrait. Technical Report.

Mahad Baawain, Mushtaque Ahmed, Gil Ha Yoon & B.S. Choudri (2017). Wastewater treatment and reuse at al Marsa fisheries plant at Rusail industrial estate.

Gilha Yoon, Adil Al Sulaimani, Ahmed Al Kiyumi, Amna Al Shezawi, Ebtihal Al Farsi, Hanan Al Balushi, Manal Al Sheriyani, Maryam Al Sawafi, Noor Al Riyami, Sajoud Al Shidi, Sharifa Al Julandani, Suhaila Al Aamri, Tamather Al Hassani (2019). Pathology monitoring and establishing pathogen database at quriyat marine finfish cage farm and hatchery. Bluewaters

7. Participation in conferences and workshops

Gilha Yoon (2021). "Future of Food" Agri-tech Canada and UAE. Canada Arab Business Council 15-16th July 2021.

Sajoud Al Shidi,Nahal Al Zaabi, Hilal Al Mezeini, Adil Al Sulaimani, Andrew Shinn and Gilha Yoon (2018). Inhibitory Effects of Omani Herbs Against Fish Pathogens. The 1st International Conference on Frankincense and Medicinal Plants: Recent Advances in Research and Industry (ICFMP) 30 October - 1 November 2018, Muscat, Oman.

Buthaina Al Khaziri, Azhar Al Busaidi, Adil Al Sulimani, Najla Al Mandhari & Gilha Yoon. (2017). Case study of Mass Mortality on Farmed Barramundi Juvenile, *Lates calcaifer*. The Second GCC Marine Biotechnology Conference: Emerging Opportunities and Future Perspectives. 31 October – 1 November 2017, Muscat, Oman.

Najla Al Mandhari, Hisham Al Adawi, Adil Al Sulimani, & Gilha Yoon. (2017). Parasite fauna of the commercially important marine fish species in Oman. The Second GCC Marine Biotechnology Conference: Emerging Opportunities and Future Perspectives. 31 October – 1 November 2017, Muscat, Oman.

Al Sulaimani A., Al Hadhrami U., Al Balushi S., Al Manthary N. & Yoon G. (2017). Inhibitory Effects of Omani Traditional Herbs On The Growth of 5 Aeromonas species. In: Proceedings at AquaSG'17: Intensification & Disease Management. 3-7 October 2017, Singapore.

Yoon G. (2017). Aquaculture and Related Aquatic Diseases in Oman In the Present and Future. In: Proceedings at AquaSG'17: Intensification & Disease Management. 3-7 October 2017,Singapore.

Declaration

I hereby verify that all the above statements are true.

Gilha Yoon February 2023