

AQUACULTURE III

4. WEEK

Aquaculture: Food Ethics



WEEKLY TOPICS

Week	Topics
1. Week	Aquaculture Science and Aquaculture Engineering
2. Week	Aquaculture: Economic and Environmental
3. Week	Aquaculture: Innovation and Social Transformation
4. Week	Aquaculture: Food Ethics
5. Week	Shellfish Aquaculture and the Environment
6. Week	Advances in aquaculture hatchery technology
7. Week	Recirculating Aquaculture
8. Week	Selection and Breeding Programs in Aquaculture
9. Week	Ecological and Genetic Implications of Aquaculture Activities
10. Week	Aquaculture: Biotechnology
11. Week	Aquaculture nutrition: gut health, probiotics, and prebiotics
12. Week	Mucosal Health in Aquaculture
13. Week	Off-Flavors in Aquaculture
14. Week	Sustainable Aquaculture Techniques





► Ethical Issues in Aquaculture Production

- The ethical issues raised by aquaculture were analyzed. A modification of the Ethical Matrix of the Food Ethics Council for the evaluation of novel foods was used; the Ethical Matrix was changed in order to include the various aquaculture production stages separately.
- The desired characteristics of an ethical evaluation have been also outlined. Ethical evaluation should not be limited to a purely scientific analysis; it should be holistic, comparable to available alternatives, and should have the flexibility to incorporate new data generated in the fast grow

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► Ethical Issues in Aquaculture & Fisheries

- The moral dimensions of fisheries are manifold, but the main ethical issues concern overfishing, interwoven with those of poverty, food security, food safety and ecosystem degradation. Each of these issues could be broken down into a number of related sub issues, for instance: genetic modification of living organisms, introduction of alien species, protection of endangered or emblematic species, discarding practices, cultural sustainability, knowledge sharing, transboundary impacts, food contamination and safety. The ethical approach encourages participation. It proposes that the ethical quality of a proposed measure be assessed through its standing in a free public discourse.
- 7th International Conference on Aquaculture & Fisheries October 19-21, 2017 Rome, Italy


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- **Aquatic food security: insights into challenges and solutions from an analysis of interactions between fisheries, aquaculture, food safety, human health, fish and human welfare, economy and environment**
 - Jennings et al. (2016) stated that fisheries and aquaculture production, imports, exports and equitability of distribution determine the supply of aquatic food to people.
 - Aquatic food security is achieved when a food supply is sufficient, safe, sustainable, shockproof and sound: sufficient, to meet needs and preferences of people; safe, to provide nutritional benefit while posing minimal health risks; sustainable, to provide food now and for future generations; shock-proof, to provide resilience to shocks in production systems and supply chains; and sound, to meet legal and ethical standards for welfare of animals, people and environment.

Jennings, S., Stentiford, G.D., Leocadio, A.M., Jeffery, K.R., Metcalfe, J.D., Katsiadaki, I., Auchterlonie, N.A., Mangi, S.C., Pinnegar, J.K., Ellis, T. and Peeler, E.J., 2016. Aquatic food security: insights into challenges and solutions from an analysis of interactions between fisheries, aquaculture, food safety, human health, fish and human welfare, economy and environment. *Fish and Fisheries*, 17(4), pp.893-938.

<https://onlinelibrary.wiley.com/doi/pdf/10.1111/faf.12152>


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- ▶ Research project
 - ▶ Ethical Seafood? - Fisheries and Aquaculture at the Crossroads (ESea)
 - ▶ This project seeks to contribute to the issue of the ethical status of global fisheries and aquaculture, and thus it is based on the introductory question of how ethical our seafood is, or what it would mean to claim that it is ethical.

<https://www.uib.no/en/svt/37390/ethical-seafood-fisheries-and-aquaculture-crossroads-esea>

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- **Sustainable Aquaculture: Are We Getting There? Ethical Perspectives on Salmon Farming**
 - Aquaculture is the fastest growing animal producing sector in the world and is expected to play an important role in global food supply. Along with this growth, concerns have been raised about the environmental effects of escapees and pollution, fish welfare, and consumer health as well as the use of marine resources for producing fish feed. In this paper we present some of the major challenges salmon farming is facing today. We discuss issues of relevance to how to ensure sustainability, by focusing on animal production systems, breeding approaches, sources for feed ingredients, and genetic engineering strategies. Other crucial issues such as animal welfare, environmental quality, and ethics are elaborated with regard to relevance for the sustainability of aquaculture.

Olesen, I., Myhr, A.I. and Rosendal, G.K., 2011. Sustainable aquaculture: are we getting there? Ethical perspectives on salmon farming. *Journal of agricultural and environmental ethics*, 24(4), pp.381-408.


<https://link.springer.com/article/10.1007/s10806-010-9269-z>

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- ▶ Is it now ethical to eat farmed fish?
 - ▶ The idea of eating caged fish bothers me, but I wonder if it is better for global sustainability
 - ▶ There aren't plenty more fish in the sea. Our fish and seafood consumption is soaring, so in steps aquaculture, sparing the wild catch while fulfilling the protein needs of hungry humanity. From 2011 to 2012 global aquaculture provided 90m tonnes of fish, overtaking 80m tonnes from the wild fisheries.
 - ▶ But in reality 50% of the world's wild caught fish are fed to other animals, including farmed fish. Nearly 5m tonnes of anchovies are plundered each year from the Humboldt Straits off the coasts of Peru and Chile, and one-third of that catch is fed to captive fish.

<https://www.theguardian.com/environment/2014/jun/01/is-it-ethical-to-eat-farmed-fish>

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- **CODE OF ETHICS FOR RESPONSIBLE FISHERIES AND AQUACULTURE**
 - A. Climate change
 - B. Illegal fishing activities:
 - C. Unreported fishing: fishing activities:
 - D. Unregulated fishing: fishing activities:
 - E. Fisheries Management:
 - F. Unfair practices:

http://www.fao.org/fishery/docs/DOCUMENT/OSPESCA/publications/Ospesca_code_of_ethics.pdf

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- References
 - Regional Review On Status And Trends In Aquaculture Development In Europe – 2015, Fao Fisheries And Aquaculture Circular No. 1135/1 Fiaa/C1135/1 (En)
 - The State Of World Fisheries And Aquaculture 2016, Fao. 2016
 - Advances In Aquaculture Hatchery Technology 2013, Woodhead Publishing Series In Food Science, Technology And Nutrition: Number 242
 - Aquaculture: An Introductory Text, 2005, Robert R. Stickney
 - Aquaculture Farming Aquatic Animals And Plants, 2012, John S. Lucas