

Project Title: Sustainable Aquaculture: Development of New Quantitative Metrics for Use in Marketing Aquaculture [Progress Report]

Total Funds Committed: \$99,686

Initial Project Schedule: September 1, 2021-August 31, 2022 [Extended to August 31, 2024]

Current Project Year: September 1, 2022-August 31, 2023

Participants: Paul Brown (Purdue University); Jen-Yi Huang (Purdue University); Rob Anex (University of Wisconsin); Brian MacGowen (Purdue University)

Extension Liaison: Herbert Quintero (The Ohio State University)

Project Objectives

1. Develop quantitative metrics from existing aquaculture farms in the NCR and compare these values to other food production systems producing competing protein foods.

Project Summary

Aquaculture production in the NCR has not been increasing. However, changing consumer trends (locally produced, fresh, low environmental impact, support local farmers, decrease imports, etc.) offer an opportunity for increased production of fresh fish and shellfish in the NCR. These trends fall under the broad heading of sustainability. Sustainable food production is a market trend that might create pull through the supply chains. At the same time, there are changing definitions of the term sustainability. Our objectives are to develop quantitative metrics for use in marketing locally grown fish and shellfish. Recently completed research from us indicated aquaculture and aquaponic systems exerted low impacts, and both fit well within the definition of sustainability. Specific objectives addressed in this project will be working with existing fish farms in the NCR to develop sustainability metrics from real world situations. We will strategically target production systems (raceway, pond and recirculating systems) and species (trout, walleye, perch, bass, bluegill, catfish and koi) within the NCR with our analyses. Data developed in this project will be valuable marketing tools for existing farmers and help new producers' sort through their options regarding system and species choices for new operations.

Anticipated Benefits

Development of quantitative metrics from existing aquaculture operations in the NCR should benefit three separate, but related groups; existing producers seeking data that support marketing efforts, new aquaculturists considering new operations, and consumers seeking sustainable foods for their families. Aquaculture production in the US should be increasing, but is stagnant. Data of this nature might be the stimulus for increased domestic production

Project Progress

Two Purdue employees, one post-doctoral research associate and one Ph.D. student, have begun the project. Potential private-sector participants are being identified and data needed for the Life Cycle Assessment model are being summarized into a survey. Matt Smith, initial Extension Liaison, has been replaced with Herbert Quintero, The Ohio State University.

Outreach Overview

Results will be extended into Spring 2024 via YouTube video and oral presentation.

Targeted Audience

Aquaculturists and consumers.

Deliverables (Outputs)

1. A video will be created to explain LCA as it relates to aquaculture.
2. A video will be created to explain the LCA results of our proposed project.
3. Multiple presentations discussing research results will be delivered in at least two NCR states.
4. At least one peer-reviewed article will be submitted to the Journal of Extension.
5. At least one peer-reviewed journal article will be submitted to a scientific journal.

Outcomes/Impacts

The project will be considered successful when data are developed and disseminated, and when a larger percentage of fish farmers and consumers understand these new metrics, and how they help the overall food production system and specifically high protein foods.

Impact Summary

Relevance. — Consumer confusion regarding health and safety of locally produced aquaculture products and the environmental impact of aquaculture.

Response. — The results are still progress.

Results. — The results are still in progress.

Recap. —Project is still in progress.

Publications, Manuscripts, Workshops, and Conferences

See the Appendix for a cumulative output for all NCRAC-Funded activities.