

VIRGINIA SEA GRANT

PROGRAM REPORT 1999-2000



www.virginia.edu/virginia-sea-grant



advances in seafood technology: *seafood safety*

The aquaculture industry in the United States is maturing and under increased scrutiny and regulation. Aquaculture producers must be proactive and take the time to identify all potential risks associated with their operations. An integrated risk management and communication approach is necessary to minimize unintended consequences from aquaculture.

In this project, the preventive paradigm of Hazard Analysis and Critical Control Point (HACCP) was applied as a risk management tool in three different situations to reduce the potential for negative impacts on wild fish stocks and protected resources. HACCP is designed to first identify steps that carry a potential hazard (the Hazard Analysis), and then define precisely how those hazards could be mitigated (establishing the Critical Control Points).

This integrated risk management approach was the common theme in three situations analyzed by Virginia Sea Grant and associated researchers. The first was to control exotic shrimp viruses in ponds at a shrimp production facility to reduce potential negative impacts on wild stocks. The second was to control possible discharge of harmful exotic shrimp viruses from shrimp processing companies into the Gulf of Mexico. The third was to control potential human and animal disease in a marine Recirculating Aquaculture System.

Results indicate that HACCP principles can succeed as a risk management tool in all three situations. Needs were identified at all three facilities for employee training programs as well as written standard operating procedures for personnel, equipment and processes. Overlapping control procedures added the safeguards of record reviews, site evaluations, and periodic testing in conjunction with the new procedures.

Information from this project is providing regulatory agencies, aquaculture producers, scientists, and seafood processing industries a recognized risk management approach to address pathogens in shrimp aquaculture and processing industries.

In addition, the plans can be easily adapted to address other diseases, escapement, water effluents, and other problem areas. It can also be used as a model for aquaculture, seafood processing industries, and environmental interests around the world.

Finally, it has great value in helping to reduce the frequency and use of chemotherapeutics and other chemicals currently in use in aquaculture to control diseases and pathogens, and to help protect our wild fishery stocks from diseases associated with aquaculture.

VA-T-99-1 Sea Grant
Technology Program-
Aquaculture: Application of
Hazard Analysis and Critical
Control Point (HACCP) Principles
as a Risk Management
Approach for Exotic Pathogen
Control in Aquaculture.
Duration: 10.1.999 – 9.30.2001.
Principal investigators: Michael
Jahncke, Michael Schwarz
(Virginia Tech). Associate
investigators: Craig Browdy
(S.C. Dept. of Natural Resources,
David Smith (Clemson
University), and Juan Silva
(Mississippi State University).

An integrated
risk management and
communication
approach is necessary
to minimize unintended
consequences from
aquaculture.



The presence of
bacteria such as
this one can be
reduced or
eliminated
through the use of
HACCP in
processing plants.

Photo copyright Michael R.
Martin, Cedar Eden
Environmental, LLC.
Used with permission.

For further information,
contact Michael Jahncke,
mjahncke@vt.edu or Michael
Schwarz, mschwarz@vt.edu