HAZARD ANALYSIS CRITICAL CONTROL POINT (HACCP) FOR SEAFOOD SAFETY AND PREVENTING THE MOVEMENT OF AQUATIC INVASIVE SPECIES

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HACCP:
A system for food safety control
HACCP stands for: Hazard Analysis and Critical Control Points
HACCP is:

- Preventive, not reactive.
- A management tool used to protect the food supply against biological, chemical and physical hazards.
HACCP Inspections Complement Traditional Methods.

HACCP:

- Emphasizes process control.
- Concentrates on the points in the process that are critical to the safety of the product.
- Stresses communication between the regulator and industry.
HACCP Plan - 123.6(b)

Every processor shall have and implement a written HACCP plan whenever a hazard analysis reveals one or more food-safety hazards that are reasonably likely to occur.
A HACCP Plan Shall Be Specific To:

- Each processing location.
- Each species of fish and type of fishery product.
This Regulation Does Not Apply To:

- The harvest or transport of fish or fishery products.
- Practices such as heading, eviscerating or freezing intended solely to prepare a fish for holding on a harvest vessel.
- The operation of a retail establishment.
Seven Principles of HACCP

1. Conduct hazard analysis and identify preventive measures.
2. Identify critical control points (CCPs).
3. Establish critical limits.
4. Monitor each CCP.
Seven Principles of HACCP

5. Establish corrective action to be taken when a critical limit deviation occurs.

6. Establish a record-keeping system.

7. Establish verification procedures.
Aquaculture Practices Exempt From the HACCP Regulation

- Harvesting and boxing unprocessed fish on ice for immediate transportation
- Live fish hauling to various market outlets
- Custom processing the fish directly for the consumer who does not resell it
- Fee fishing operations
Aquaculture Drugs Control Strategies

- On-farm visit
- Supplier’s certification
- Records of drug use
- Drug residue testing
- Quality assurance program
- Control during holding
Michigan Sea Grant Extension Efforts with Seafood HACCP

- Became certified to conduct the training
- Conducted 25 three-day Seafood HACCP courses in the Great Lakes region
- Trained 653 commercial fishers, processors, and aquaculturists
- Over 200 follow-up visits to fish processing facilities
Added Benefits of Seafood HACCP

- Value-added products
The HACCP Approach to Prevent the Spread of Aquatic Invasive Species by Aquaculture and Baitfish Operations
Problems

- Aquatic Invasive Species (AIS) can invade and disrupt baitfish and aquaculture operations
- Baitfish and aquaculture operations have been identified as a pathway for the spread of AIS
  - Close areas to harvest/culture
  - Impose regulations that may be disruptive to the industry
Impacts

- Many states and provinces have banned importation, banned fish and bait harvest from infested waters, or required exotics-free certification.
- Unnecessary, poorly designed, or unenforceable regulations are costly to government and the industry.
How Can Aquaculture Be Characterized by AIS Risk?

- Extremely diverse and complex as is Agriculture
- Characterized by:
  - Production systems
  - Product types
  - Water Source
  - Species
- Each of these components pose different risks for spreading AIS
Product Types

- Food
- Fish for stocking
  - stocking public/private waters
  - stocking aquaculture systems
- Fee Fishing
- Aquarium fish
- Decorative ponds
- Baitfish
Water Sources

- Springs
- Well water
- Surface water
AIS Risks and Aquaculture

- Vast majority of aquaculture poses very little risk for spread of AIS because they:
  - raise fish for the food market (dead fish)
  - use well or spring water
  - don’t harvest fish from infested waters
  - use closed systems

- Higher risk is from:
  - baitfish harvested from AIS infested waters
  - fish for stocking taken from AIS infested waters
  - AIS cultured for live sale
  - AIS grown where they can escape into the wild
  - surface water used or transferred with live fish
Regarding Aquaculture: What do we want?

- Prevent AIS from establishing reproducing populations
- Balance resource protection with potential negative economic impacts
So, how do you allay concerns that aquaculture might spread AIS?

- Must have a policy and procedures in place to deal with concerns
- The procedures must be robust enough to work for a wide variety of aquaculture and baitfish operations
- Must have records that will show that the policies and procedures are being followed
- Must verify that policies and procedures work
But, the procedures should be as unobtrusive as possible.

“We’d like to try out a few procedures on your department before we use them to mess up the entire company.”
HACCP Approach

Hazard Analysis and Critical Control Point

- HACCP is preventive, not reactive
- Concentrates on the points in the process that are critical to the safety of the product
- Stresses communication between the regulator and industry
Seven Principles of HACCP

1. Conduct hazard analysis
2. Identify critical control points (CCP)
3. Establish control measures
4. Monitor each CCP
5. Establish corrective action to be taken when a problem occurs
6. Establish a record-keeping system
7. Verify that the HACCP plan and control measures work
AIS-HACCP
Potential Hazards

1. AIS Fish and other Vertebrates - round goby, ruffe, white perch, Asian carp, amphibians, etc.

Hazards for Seafood Safety
1. Biological
2. Chemical
3. Physical
AIS-HACCP
Potential Hazards

1. AIS **Fish and other Vertebrates** - round goby, ruffe, white perch, Asian carp, amphibians, etc.

2. AIS **Invertebrates** - zebra mussels, spiny and fish hook waterflea, rusty crayfish, etc.

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AIS-HACCP
Potential Hazards

1. AIS **Fish and other Vertebrates** - round goby, ruffe, white perch, Asian carp, amphibians, etc.

2. AIS **Invertebrates** - zebra mussels, spiny and fish hook waterflea, rusty crayfish, etc.

3. AIS **Plants** - Eurasian watermilfoil, hydrilla, water chestnut, giant salvinia, etc.

4. Diseases – WD, BKD, VHS.

**Hazards for Seafood Safety**
1. Biological
2. Chemical
3. Physical
AIS-HACCP
Training Materials

AIS-HACCP
Training Curriculum

Supporting training video (22 min)

From Net to Sale
Controlling Aquatic Nuisance Species with the HACCP Approach for Baitfish and Aquaculture Industries

CD with resources

Sea Grant
Great Lakes Network
Michigan Sea Grant Extension Efforts with AIS-HACCP

- Worked with Minnesota Sea Grant on developing the AIS-HACCP Program
- Worked with baitfish and aquaculture industries in training programs and implementing HACCP plans that are specific to their operations
- Conducted over 40 AIS-HACCP one day training programs in the North Central Region of the U.S.
CONCLUSIONS

- The HACCP approach can work as long as there are commitments from personnel in the field as well as management.
- We think that the HACCP approach can replace more intrusive impacts that may result from unnecessary, ineffective, or unenforceable regulations.
- Control measures and corrective actions must be developed and they must be AIS specific.
- It is in the best interest of the public hatchery manager, fish farmer, bait harvester, resource manager, researcher, and enforcement officer to prevent the spread of AIS.
Thank You.

QUESTIONS, COMMENTS OR REMARKS?

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