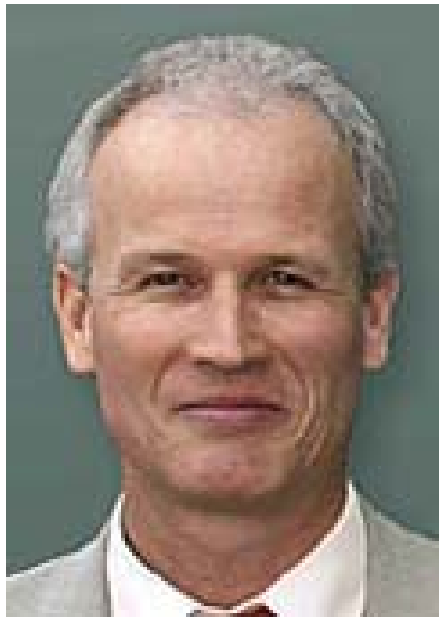
Best Aquaculture Practices Standards Update

Dan Lee

BAP Coordinator



Dan Lee

Best Aquaculture Practices, United Kingdom

- Daniel Lee is an aquaculture specialist with expertise in the design, implementation and management of new projects. He has been GAA's Best Aquaculture Practices standards coordinator since the program's inception. The multilingual aquaculturist works closely with the BAP Standards Oversight Committee and helps guide and coordinate among technical committees.
- Lee also manages aquaculture research projects for the Centre for Applied Marine Sciences at Bangor University in the United Kingdom, where his main interests lie in understanding the environmental impacts of tropical aquaculture operations as well as developing systems with minimal impacts. He published the textbook *Crustacean Farming, Ranching and Culture*

Outline

- Standards development process
- Global Food Safety Initiative
- Harmonisation based on FAO Guidelines?
- BAP standards update
- BAP tackles the fishmeal issue

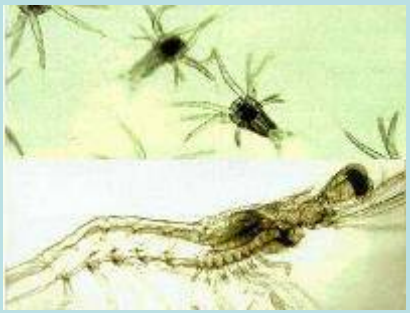
Process of Standards Development

- Standards Oversight Committee
  - 4 NGOs, 4 Industry, 4 Academic/Policy
- Technical committees
- Public comment period
- Regular revisions
- Committed to compliance
  - FAO Guidelines for Aquaculture Certification
  - Global Food Safety Initiative

SOC-approved definition of BAP standards

- *Achievable, science-based and continuously improved global performance standards for the aquaculture supply chain to assure healthful foods produced through environmentally and socially responsible means*

BAP Standards



hatchery

feed mill

processing plant

farm

BAP Standards under development

salmon

mussels

marine fish

Download free copies of standards

www.gaalliance.org/bap/standards.php

GFSi
Global Food Safety Initiative

"Once certified accepted everywhere"

GFSI Vision

"safe food for consumers everywhere"

GFSI Guidance Document

the tool that determines equivalency between food safety systems.

Global Outlook for Aquaculture Leadership
KUALA LUMPUR 2010

GFSI recognised Manufacturing Schemes

1. BRC Global Standard Version 5
2. Dutch HACCP (Option B)
3. FSSC 22000
4. Global Aquaculture Alliance BAP (GAA Seafood Processing Standard)
5. Global Red Meat Standard Version 3
6. International Food Standard Version 5
7. SQF 2000 Level 2
8. Synergy 22000

- **25th May 2010**

  The Global Food Safety Initiative, managed by The Consumer Goods Forum, announced the BAP certification scheme, developed by GAA, had been given full recognition by the GFSI Board of Directors.

Benchmarking to GFSI

- Detailed clause by clause appraisal of how the BAP Processing standard addresses all the requirements of the GFSI guidance template
- Detailed Assessment of the procedures for assessing auditor requirements
- Clear separation of roles for standard setting and certification
- Independent, ISO65 compliant certification bodies (CBs)
- CBs need accreditation
- Documentation of procedures
- Formalising/documenting BAP program management
- Guidance from Global Trust Certification

Convergence and harmonisation using GFSI and FAO?

GFSi
Global Food Safety Initiative

GFSI Guidance Document

food safety

Technical Guidelines on Aquaculture Certification

- environmental responsibility
- social responsibility
- animal health and welfare
- traceability

Coming Together

- Less duplication of schemes with less confusion to the consumer.
- Cost reduction.
- Benchmarking to FAO Guidelines
- A consumer facing logo, globally recognised?

Pangasius

- SOC approval and release August 2010
- Significant new section on sludge management
- Diver safety
- Only applicable to ponds
- BAP effluent metrics applied consistently

Salmon: draft v. nearly approved for public release

- Over 10 redrafts
- SOC review in July 2010 requested conversion to usual BAP format
- Reformatted version now needs SOC approval
- Recent consensus on
    - antibiotics
    - Escapes, GM salmon
    - Diver safety
    - Sub-contractors
    - Fishmeal and fish oil conservation

Components of draft salmon standard

Community

1. Property Rights and Regulatory Compliance
2. Community Relations
3. Worker Safety and Employee Relations

Environment

4. Sediment and Water Quality
5. Fishmeal and Fish Oil Conservation
6. Control of Escapes
7. Predator and Wildlife Interactions

Environment

8. Storage and Disposal of Farm Supplies

Animal Welfare and Health

9. Welfare
10. Biosecurity and Disease Management

Food Safety

11. Control of Residues and Contaminants

Traceability

12. Record-Keeping Requirement

Other BAP standards

- Shrimp farms
  - IOM, group certification
- Mussels
- Marine fish
- Molluscs

BAP feed mill standard update

Components

1. Property rights and regulatory compliance
2. Community relations, worker safety and Employee relations
3. Fishmeal and fish oil conservation
4. Storage and disposal of supplies
5. Waste management
6. HACCP process controls, Good manaufacturing practices
7. Traceability requirement

The Fishmeal Issue

Perceived as the greatest obstacle to sustainable aquaculture

Whenever it “takes fish to make fish”

The Fishmeal Issue

- Accusations in *Science* and *Nature*:
  - Aquaculture is not relieving pressure on wild fishery stocks due to dependence on fishmeal.
  - Growth of aquaculture is causing overfishing.
  - Aquaculture is “a contributing factor to the collapse of world fisheries.”

BAP response

Feedmill standard

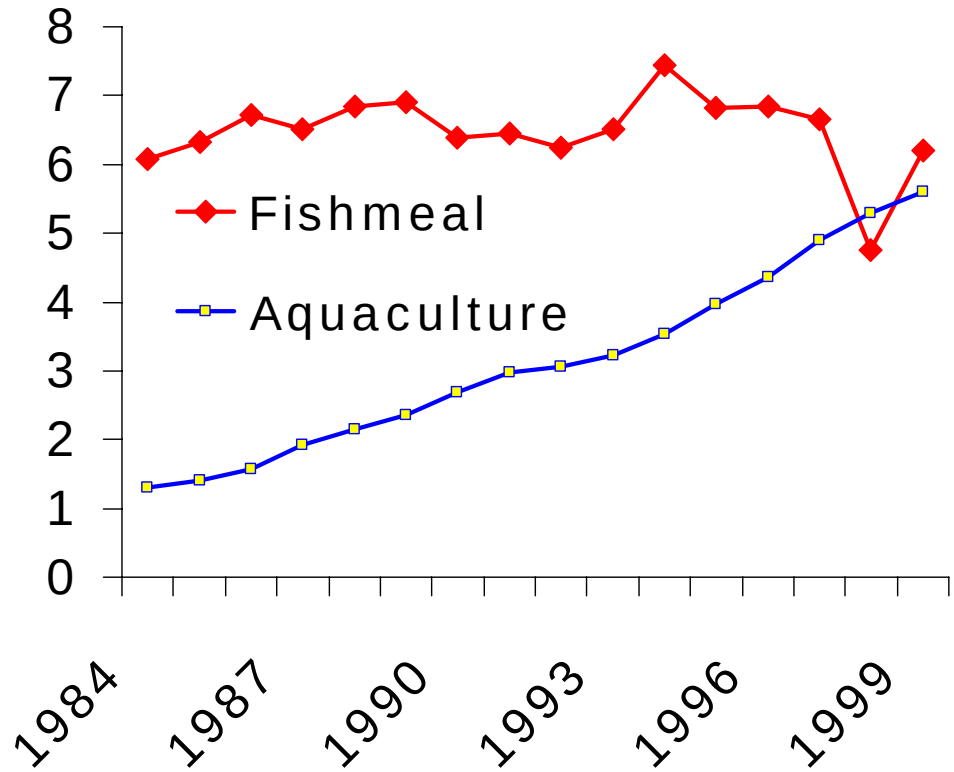
- Sustainable sourcing
- Certified fisheries (MSC or IFFO)
- Disclosure of inclusion data - Feed Fish Inclusion Factor (FFIF)

Farm standards

- Efficient usage
- FIFO = FFIF x FCR
- Calculate FIFO, satisfy metric standard

GAA and IFFO Worked Together to Provide the Facts about Fishmeal

- Aquaculture is not increasing fishing pressure on fishmeal stocks.
- Fishmeal production is stable at 6.5 million mt per year.
- Aquaculture is displacing use for pigs, chickens, cattle.
- Proper calculation of FIFO ratio



Feed Mill Standard 3. Fishmeal and Fish Oil Conservation

- 3.1: The applicant shall obtain declarations from suppliers on the species and fishery origins of each batch of fishmeal and fish oil.

- 3.2: The applicant shall indicate a feed fish inclusion factor (FFIF) on product labels, packaging, shipping documents or invoices for all feeds produced under the BAP program.

What does FFIF measure?

- The feed fish inclusion factor estimates the combined fishmeal and fish oil concentration of the feed on a dry-weight basis, relative to the wild fish.

- Thus an FFIF of 2 signifies that the feed is twice as concentrated in marine protein and oil as wild fish.

What to include/exclude in the calculation

- Include any meal or oil derived from whole wild-caught fish, squid, krill, mollusks or any other wild marine animals.

- Exclude meal or oil derived from fishery by-products such as trimmings, offal and their derivatives such as squid liver powder, and aquaculture by-products such as shrimp head meal.

Feed Fish Inclusion Factor (FFIF)

Farmer calculates Fish in: Fish Out (FIFO) ratio

$$FIFO = FFIF \times FCR$$

Calculating FIFO

- Salmon diet with
  - 24% fishmeal
  - 16% fish oil
  - FCR 1.25

IFFO / GAA method

FFIF = (24 + 16) / (22 + 5)
= **1.48**

FIFO = 1.48 x 1.25
= **1.85**

WWF/SAD method:

Forage Fish Dependency Ratio – which ever is the larger of :

FFDR (meal) = 1.36, or

FFDR (oil) = 4.00

3. Fishmeal and Fish Oil Conservation

- 3.3: The applicant shall develop and implement a clear, written plan of action defining policies for responsibly sourcing fishmeal and fish oil.
- 3.4: (Future critical standard.) After June 1, 2015, at least 50% of the fishmeal and fish oil derived from reduction fisheries shall come from approved certified sources.
- 3.5: (Future critical standard.) After June 1, 2015, at least 50% of the fishmeal or fish oil derived from fishery by-products such as trimmings and offal shall come from approved certified sources.

Conclusions

- ✓ BAP program satisfies GFSI, ISO65, FAO
- ✓ Development process working
- ✓ Oversight Committee working
- ✓ Delivering consistency
- ✓ Addressing key issues like fishmeal

<u>But</u>

- More standards urgently needed
- Need harmonisation around FAO Guidelines