Report

Seafood Consumer Expectations and International Benchmarks for Contaminant Monitoring in Exported Australian Seafood

Executive Summary

Chemical contamination in seafood is a critical issue for Australia's seafood industry (exports and imports), with direct implications for trade, regulatory compliance, economic interests, and national reputation. The SafeFish Review of Contaminant Monitoring in Seafood Project, in collaboration with the National Residue Survey (NRS), aims to ensure that Australia's monitoring arrangements remain robust, credible, and responsive to evolving consumer and market expectations[1][2].

This report synthesizes current consumer expectations (domestic and international), reviews international benchmarks, and identifies opportunities to enhance Australia's contaminant monitoring systems.

1. Consumer Expectations: Australia and Overseas

A. Australian Consumers

- Food Safety and Confidence: Lofty expectations for seafood to be free from harmful chemical residues, supported by transparent, science-based monitoring[1].
- Transparency: Desire for clear information about testing protocols, results, and any incidents of contamination.
- Traceability: Increasing demand for traceable supply chains, ensuring contaminants can be traced to source.
- Sustainability: Expectation that contaminant monitoring supports not only food safety but also environmental stewardship.

- **Responsiveness:** Consumers expect rapid response and communication in the event of contamination incidents and to do that should have regular (biennial?) exercises to ensure the response through the supply chain is operational. A manual should be created (if not already in place) where actions and people are tasked with specific roles and they are trained accordingly. The entire seafood chain should be aware of this process, not only to protect consumers but themselves.

- B. International Consumers and Trading Partners
  - **Compliance with Importing Country Standards:** Importers overseas expect Australian seafood to meet or exceed their own countries maximum residue limits (MRLs) and food safety requirements[1][2].
  - **Certification and Accreditation:** Preference for products verified under internationally recognized testing and accreditation systems (e.g., ISO 9001, ISO/IEC 17025). Consistent quality testing standards are fundamental to ensuring the safety, integrity, and marketability of exported Australian seafood. As global seafood trade expands, the lack of harmonized testing protocols and standards across countries often leads to confusion, trade barriers, and diminished consumer confidence. Addressing these inconsistencies is critical for maintaining Australia's reputation and meeting the expectations of both domestic and international consumers.
  - **Market Confidence:** Ongoing confidence in Australia's "clean, green, safe" reputation, underpinned by consistent, high compliance rates and transparent reporting[1].
  - **Rapid Incident Management:** Expectation that Australia can swiftly identify, manage, and communicate any contamination events. (see Responsiveness above)

2. **International Benchmarks and Best Practices**

A. Monitoring Programs

- **Comprehensive Testing:** Leading seafood-exporting countries (e.g., EU, UK, USA, Japan) conduct regular, risk-based testing for a wide range of contaminants, including pesticides, veterinary drugs, heavy metals, and emerging contaminants (e.g., microplastics)[3][4]. Additionally, because of widespread contamination, microplastics are

ingested by many species of wildlife including fish and shellfish. Because microplastics are associated with chemicals from manufacturing and that sorb from the surrounding environment, there is concern regarding physical and chemical toxicity. Evidence regarding microplastic toxicity and epidemiology is emerging [9]. Where are SafeFish and the seafood industry relating to published Standards Australia AS ISO 24187:2025, Principles for the analysis of microplastics present in the environment?

- Representative Sampling: Programs focus on species and regions at greatest risk, with robust sampling plans to ensure representativeness and statistical validity[3].
- Accredited Laboratories: Use of laboratories accredited to international standards (ISO/IEC 17025) for all analyses[1]. Refer 1B (above) Certification and Accreditation.

B. Reporting and Transparency

- Public Reporting: Regular publication of compliance rates and incident summaries, building public trust and supporting market access[3][1].
- International Data Sharing: Participation in global databases (e.g. GEMS/Food Contaminant database) and Codex Alimentarius processes to harmonize standards and share surveillance data[5][2].

C. Regulatory Alignment

- Harmonization with Codex and Importing Country Standards: Continuous review and adjustment of national standards to align with international benchmarks and evolving toxicological evidence[2][4].
- Risk-Based Approach: Emphasis on practical, risk-benefit based sampling and management, ensuring food safety without imposing unnecessary regulatory burdens[5][2].
- Australian States and Territories aligned: To avoid overlays and duplications which bring extra costs which flow onto consumers it is essential that there is the one Standard.

3. Performance of Australia's Current System

- High Compliance Rates: Australian seafood demonstrates consistently high compliance with both domestic and international standards (typically 99–100%)[1].

- Quality Management: The NRS operates under ISO 9001:2015 certification, with contracted laboratories meeting ISO/IEC 17025 requirements[1].

- Proactive Incident Management: SafeFish provides technical support for rapid response to incidents, minimizing trade and reputational impacts[6][7]. When was the last exercise conducted to ensure the system runs smoothly in case of an issue? SCA finds that there is an ignorance in the seafood supply chain about such issues and SCA has a potential solution which may assist in this regard.

- Continuous Improvement: Regular reviews and stakeholder workshops identify emerging risks and guide enhancements to monitoring and testing programs[8][2].

4. Opportunities for Enhancement

Area	Opportunity for Enhancement
Consumer Engagement	Expand public communication on testing results, incident responses, and system improvements. Work with SCA on pro-active incident management.
Traceability	Invest in digital traceability systems to link contaminant data with specific products and supply chains
Emerging Contaminants	Increase research and monitor new risks (e.g., microplastics, novel chemicals)
International Benchmarking	Regularly review and align testing protocols and standards with leading global markets
Data Integration	Develop integrated data platforms for real-time sharing across industry, regulators, and trading partners

Stakeholder Collaboration	Continuing and expanding multi-stakeholder workshops to ensure monitoring reflects evolving risks and expectations

5. Recommendations

1. Enhance Transparency: Publish regular, accessible reports on contaminant monitoring results and incident management outcomes for both domestic and international audiences.
2. Strengthen Traceability: Develop and implement advanced traceability systems to ensure rapid identification and management of contamination sources.
3. Expanded Scope of Monitoring: Increase investment in monitoring emerging contaminants and adapt protocols as new risks are identified.
4. Align with International Best Practice: Maintain ongoing review of global standards and best practices and adjust Australia's systems to remain at the forefront.
5. Engage Consumers: Work with SCA to launch targeted education and engagement campaigns to build consumer confidence and understanding of Australia's monitoring systems.
6. Foster Collaboration: Continue collaborative reviews and stakeholder engagement to ensure monitoring remains fit-for-purpose and supports market access.

6. Conclusion

Australia's contaminant monitoring arrangements for exported seafood are robust and highly regarded internationally, supporting strong market access and consumer confidence. Ongoing enhancement—particularly in transparency, traceability, and responsiveness to emerging risks—will ensure these systems remain world-leading and continue to meet the expectations of consumers, regulators, and trading partners[1][2][3]. Ensuring responsiveness in a crisis is essential hence would like to be aware of the plan for training and exercising which has or will continue to occur and confirmation that a Best Practice Model is available which nominates specific actions and people who would respond.

Key References

- National Residue Survey Seafood Program[1]
- SafeFish Chemical Contaminants Project[2]
- UK/European Contaminant Monitoring Benchmarks[3]
- SafeFish Technical Program and Stakeholder Prioritisation[8]
- SafeFish/FRDC Project Summaries[6][7]
- Smith et al. *Microplastics in Seafood and the Implications for Human Health* [9]

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