



FOOD FRAUD

Food fraud refers to the intentional misrepresentation of food, food ingredients, food packaging and/or labels for economic gain. While it may not intend to harm consumers, food fraud activities can pose serious health risks to consumers if unidentified allergens or hazardous materials are added to the food product. Seafood is among the most targeted foods for fraud. The most common types of food fraud include:

- **Dilution:** Diluting a product by mixing in other ingredients and not declaring it on the label. For example, mixing oils extracted from two fish species and not declaring the common name of both species in the list of ingredients.
- **Substitution:** Replacing a product with something of a different character or quality, usually of lesser value. For example, selling skate wings as scallops or selling pollock as cod or haddock.
- **Mislabelling:** Making false claims or misleading statements on labels to make the product appear to be something it is not. This includes providing false product information regarding common name, net quantity, expiration dates, nutritional value, grades, country of origin, composition, quality, health benefits, or method of production. For example, labelling imported lobster from the U.S. as a Product of Canada or labelling farmed salmon as wild.
- **Unapproved enhancement:** Using illegal, unapproved and/or undeclared substances to improve a product.
- **Concealment:** Hiding the low quality (i.e., disease or defect) of a product.
- **Counterfeit:** Intellectual Property Rights infringement.
- **Grey Market Production, Theft or Diversion:** Legitimate product or product destined for disposal is stolen and sold/distributed outside of intended markets.



FACT SHEET

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HOW TO PROTECT PRODUCTS AGAINST FOOD FRAUD?

One approach to protect products against food fraud is conducting a food fraud vulnerability assessment. This risk assessment evaluates the vulnerability of raw materials, ingredients, packaging and input materials to food fraud. It takes into consideration the risk associated with each material based on several factors as well as current mitigation strategies in place that reduce that risk. It also considers the overall impact a food fraud event would have on a business. By assigning scores and calculating the overall risk, a company can determine which items are at high risk of food fraud and if further mitigation strategies may need to be implemented. Below are the steps to follow to complete a vulnerability assessment.

Step 1. Determine the risk (A) associated with each raw material or input material

First, the company must determine the risk associated with each raw material or input material. Several factors should be considered and scored accordingly. For this example, consider a company processing frozen haddock.

RISK FACTOR	SCORING SYSTEM	SCORE	JUSTIFICATION
Nature of the Raw Material – Does the physical form of the food or food ingredient make it easy to adulterate? Liquids and powders are easier to dilute or substitute than solids.	1 – Solid (difficult to adulterate) 3 – Powder (easier to adulterate)	1	Haddock is a solid food that is more difficult to adulterate by dilution but could be substituted.
History of Adulteration – Is the food or food ingredient a frequent target of food fraud?	1 – Rare 4 – Frequent	4	Fish is a frequent target of food fraud, particularly substitution or mislabelling.
Length and Complexity of the Supply Chain – Is the supply chain short and simple or long and complex, allowing for more opportunities for adulteration?	1 – Short, simple supply chain 4 – Long, complex supply chain – more opportunities for adulteration	1	Haddock is received from local fisherman. Supply chain is short and simple, with little opportunity for adulteration.
Likelihood of Detection – What is the likelihood of detecting the adulterant in the material? This will require knowledge of common adulterants and depend on the testing methods used and the frequency.	1 – Highly detectable 3 – Low detection rate	3	Final product is not tested for any adulterants or species identification. However, experienced personnel may be able to properly identify the species visually.
Geographic Origin – Is the material originating from an area where food fraud reports are rare or common?	1 – Reports are rare 3 – Reports are common	2	Reports of fish fraud in Nova Scotia are rare; however, there has been one report of mislabelling in the past year.
Economic Factors – Is there an economic motive to adulterate?	1 – No incentive (cheap commodity) 4 – High incentive (high-value commodity)	4	There is incentive to mislabel or substitute other fish species such as pollock as cod or haddock for economic gain.
Ease of Access to the Raw Material	1 – Limited access 4 – Readily accessible	1	Haddock is securely stored during transport and at the facility.
Total Score:		16	

Based on the assessment, the total risk score (A) for haddock is 16.



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Step 2. Determine the mitigation strategies currently in place and assign a score (B)

A company may have mitigation strategies currently in place. Each mitigation factor should be given a score. Note that depending on the number of mitigation strategies in place, the scoring system may need to be adjusted.

MITIGATION STRATEGIES	SCORING SYSTEM	SCORE	JUSTIFICATION
Approved Supplier Program – The company has an approved supplier program in place outlining how suppliers are evaluated, approved and monitored.	0 – No approval system 2 – Comprehensive approval system (suppliers are required to have a food safety program or GFSI certification, provide audit results, undergo supplier audit, etc.)	2	Approved Supplier Program is developed, and haddock is received from an approved supplier.
Raw Material Acceptance Specifications/Criteria and Supporting Documentation	0 – No specifications/criteria developed or certificates required 2 – Specifications/criteria developed and supporting documentation (i.e., certificates of analysis, letters of guarantee, etc.) required	2	Specifications are on file for haddock and haddock is inspected upon receipt for acceptance.
Raw Material and Final Product Testing	0 – No testing 2 – Routine testing completed	0	No routine testing of raw material or final product conducted.
Total Score:		4	

Based on the risk assessment, the mitigation score (B) is 4.

Step 3. Determine the impact on business (C)

Next, the company must determine the impact on the business if the final frozen haddock product was found to be adulterated. Depending on the adulterating substance used, it could result in a catastrophic impact resulting in consumer illness or injury. However, as seafood is most often a target of mislabelling or substitution, it would most likely be a major impact (3) on the business and result in a consumer complaint, product recall and/or brand damage.

IMPACT ON BUSINESS (MULTIPLIER)	CATASTROPHIC – 4 (CONSUMER FATALITY, CLOSURE OF COMPANY)
	MAJOR – 3 (PRODUCT RECALL, BRAND DAMAGE)
	MODERATE – 2 (INGREDIENT FREQUENTLY USED, VERY LOW PRODUCT VOLUMES)
	INSIGNIFICANT – 1 (INGREDIENT RARELY USED, VERY LOW PRODUCT VOLUMES)



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Step 4. Determine the overall risk rating

Considering the Risk Factors (A), Mitigation Strategies (B) and the Impact on Business (C), an overall risk rating is assigned and determined as low, medium, high, or extremely high. Where a raw material is identified as having a medium risk or higher, further mitigation strategies must be implemented to reduce the risk, such as additional assurance from the supplier or product testing. Keep in mind that product testing will require knowledge of common adulterants for the product and depend on the availability of the appropriate testing methods. Based on the assessment completed, haddock is at high risk for food adulteration (substitution), and as such, the company could conduct random sampling to verify the species or request that the supplier provide proof of species identification.

IMPACT ON BUSINESS (C)	OVERALL RATING (A-B = 16-4 = 12)					
		21-25	16-20	11-15	6-10	1-5
	CATASTROPHIC – 4	EXTREMELY HIGH				
	MAJOR – 3		HIGH			
	MODERATE – 2			MEDIUM		
INSIGNIFICANT – 1				LOW		
RAW MATERIAL RISK RATING						

Raw material, ingredient, packaging or food	Supplier	Supplier Location	Risk Score (A)	Mitigation Score (B)	Impact Score (C)	Risk Level*	Additional Mitigation Required? (Y/N)	Mitigation Measure
Haddock	XYZ Seafoods	Nova Scotia, Canada	16	4	Major (3)	High	Y	Further proof from supplier of species identification

Steps 1-4 are to be followed for each different raw material or input material. If materials are similar, they may be grouped together. However, care must be taken to ensure that the risks are the same for each material. For example, if the materials are sourced from a different country, supply chain or harvester, different risks may be introduced.

For More Information Contact:

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