

A Look at Deceptive Practices- 12-Week Blog Series

As you may or may not be aware, deceptive practices have reached epidemic proportions in the seafood industry. We believe that education is key to creating a reputable industry. And so, over the next 12 weeks, we will be educating on 12 deceptive practices (1 per week) that are commonly used in the seafood industry. We will explain what they are, why they are used, how to identify them and what you can do to make sure that the seafood you buy is top-quality!

Species Substitution

Species substitution, seafood mislabeling – whatever you want to call it – this is one deceptive practice that consumers and industry are more aware of. Recent studies about seafood mislabeling have dominated news headlines. The [Boston Globe](#) investigation uncovered species substitution at many local restaurants. And last year in Canada, a CBC reporter put supermarket fish to the test in the [Something's Fishy](#) report. These are just two studies, but more have been done and most reveal that mislabeled seafood is more common than the average consumer would think. The table aside depicts the results of an investigation of seafood bought at retail stores and restaurants in New York, New Jersey and Connecticut.

So what does species substitution mean exactly? Essentially, it means substituting one species for another – normally a cheaper species is substituted for a more expensive one – as a means to boost profits. For example, the various Sole & Flounder species range in price and quality and are therefore frequently substituted. Often, even the retailer and restaurants selling the fish to end-consumers are unaware that the fish they are selling has been mislabeled.

Claimed fish	Total tested	Wrong species	Incomplete info ¹	Fish was really ...
Red snapper	22	12 ²	1	vermillion snapper, lane snapper, ocean perch
Sole				
Grey	10	1	0	sutchi catfish
Lemon	10	10	0	flounder, Greenland turbot
Halibut	19	1	4	flounder
Catfish	21	3	0	sutchi catfish
Salmon				
Coho	9	0	0	coho salmon
King	8	2	0	coho salmon
Sockeye	11	2	0	coho salmon
Grouper	15	2	0	pollock, tilefish
Cod/scrod	26	0	2	
Tuna				
Bluefin	2	0	0	
Yellowfin	10	1	0	bigeye tuna
Ahi ³	8	0	0	
Chilean sea bass	19	0	0	
Totals	190	34	7	

¹ Includes instances when an employee verbally misidentified the species. ² In nine more samples, the species could not be determined conclusively. ³ The FDA considers it acceptable for various species to be labeled "ahi tuna" as long as that doesn't create confusion in the marketplace.

What does this mean for the end-users? Aside from paying a high price for a lesser quality product, mislabeled fish can impact flavour, texture, portioning, yield and recipe response.

How can you be sure that the fish you buy is what you paid for? For even the most experience seafood purchasers, this can be difficult. Especially when buying frozen fish. The only real way to determine if a species has been substituted is with DNA analysis. In an effort to provide our customers with full transparency, Tradex Foods conducts DNA testing on all SINBAD production out of China. SINBAD is our in-house brand produced under stringent quality standards in Asia. Does your supplier provide full transparency?

Thanks for educating yourself on deceptive practices – at Tradex Foods we believe that furthering education and awareness is the key to eliminating seafood fraud and to creating a long-lasting, reputable and profitable industry. **BUY SMART & EAT MORE SEAFOOD!**

High pressure water injection is used primarily in Salmon fillet processing and is intended to boost the weight of the Salmon by plumping it with water. Plumping is achieved via a large piece of industrial equipment that is equipped with a conveyor belt and an over-head aqua injection arm. This arm is equipped with multiple water-injection tubes, and fitted with stainless steel needles on the ends. As the fillets move along the conveyor belt under the overhead aqua-arm, the needles plunge into the fillet and inject the fish with water.

As in all cases, when the fillet is thawed and cooked, the flesh is significantly compromised, with a “power-washed” effect and large amounts of water simply run down the drain. Interestingly, these products are sold as chemical-free - which fools buyers into assuming that because the product is chemical-free, that there will be no moisture loss when thawed and cooked. This is not the case.

Like most deceptive practices, water injection is used by unscrupulous processors in an effort to fraudulently boost net weight and ultimately profits. Water injection also occurs in the poultry industry. In fact, poultry producers have been utilizing this tactic in North American markets for many years, with the original equipment design originating in North America as well.

Inaccurate Fillet Weight Ranges & Case Counts

What is case-count and fillet-size deception? Each case of frozen fish specifies either a fillet weight range and/or fillet count. When processed and packaged properly, the fillets in each case should be accurate within the stated weight range and/or accurate in fillet count. If the weight range is not accurate, there can be a greater number of smaller-sized fillets or a smaller number of larger-sized fillets per case, even if the net case weight is accurate. In fact, some unscrupulous processors may even top up boxes with small chunks of fish in order to meet the stated net weight.

A chef who designs a menu around serving 4 oz fillets won't be pleased to open a box and find fillets ranging between 1 oz and 6 oz, rather than the 4-6 oz stated weight range. The smaller fillets won't be usable and obtaining consistent portion sizes will be difficult, if not impossible.

Another deception to watch for is irregular shaped fillets. In any box, you may get fillets with ragged or curved edges. Again, this is not ideal for the end-user.

How can you quickly check for inaccurate fillet weight ranges and case counts? Well, as long as you have some basic math skills, checking for inaccurate fillet weight ranges and case counts is easy!

Let's say you purchased a 10 lb box of Cod fillets with a stated weight range of 4-6 oz. Assuming the average size fillet is 5 oz, quick math tells you there should be roughly 32 fillets in the box (remember there are 16 ounces per pound). Simply count the number of fillets in your box to see if you were cheated! Also, you can do a quick visual exam for irregularly shaped fillets.

At Tradex Foods, we have Quality Supervisors to ensure that our boxes are packed with accurate sized fillets and case counts. We even mark boxes with the count/box - so a chef can look at it and quickly calculate their portion cost.

Sensory Quality Indicators

Sensory quality indicators are a series of tests and observations used to gauge the freshness and quality of seafood. Perhaps the simplest of quality tests, sensory indicators can be utilized when evaluating freshness in all fish species, in both raw and cooked states. Any chef or buyer is capable of inspecting products for optimal sensory quality indicators.

In the raw state, there are three primary methods of inspection: visual, touch and smell. In the cooked state, the same three indicators can be inspected, as well as a fourth – taste.

Groundfish	Appearance & Texture	Odor & Flavour
Raw	No Gaping	Ocean Air
	Translucent	Clean Seaweed
	Glossy	Slight Sweet
	Bright White	Slight Metallic
	Firm	Briny
	Resilient	Slight Cucumber
	Strongly Moist	Slight Earthy Slight Grassy
Cooked	No Gaping	Slight Sweet
	Bright White	Ocean
	Strongly Tender	Briny
	Flaky	Slight Cucumber
	Strongly Moist	Slight Earthy Slight Brothy
Salmon	Appearance & Texture	Odor & Flavour
Raw	Uniform Colour & Texture	Moderate Ocean Air
	Translucent	Clean Seaweed / Grassy
	Glossy	Slight Sweet
	Bright Red / Pink / Orange	Fresh Oil / Buttery
	Firm	Briny
	Resilient	Cucumber or Melon
	Strongly Moist	
Cooked	Uniform Pink Colour	Slight Sweet
	Strongly Tender	Ocean
	Strong Flaky	Briny
	Strongly Moist	Slight Cucumber / Melon

		Fresh Oil / Buttery Meaty / Brothy Meaty
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The next two tables summarize **poor** sensory quality indicators for both Groundfish and Salmon in the cooked and raw states.

Groundfish	Appearance & Texture	Odor & Flavour
Raw	Gaping	Strongly Sour
	Strongly Opaque	Mod – Strong Fecal
	Cooked Appearance	Putrid
	Strongly Gray	Strongly Rancid
	Strongly Yellow	Strong Vegetable Sulphur
	Strongly Mushy	Strong Pungent
	Strongly Rubbery	Strong Taint
	Strongly Dry	
Cooked	Strong Gaping	Strong Sour
	Strongly Gray	Strong Bitter
	Strongly Yellow	Strong Rancid
	Strongly Tough (or)	Strong Vegetable Sulphur
	Strong Rubbery	Strong Taint
	Desiccated	

Salmon	Appearance & Texture	Odor & Flavour
Raw	Strongly Opaque	Strongly Sour
	Yellow / Brown Fat Line	Mod – Strong Ammonia
	Strongly Mushy (or)	Strong Fermented Fruity
	Strongly Rubbery	Mod – Strong Fecal
	Strongly Dry	Strong Sickly Sweet / Putrid
	Strong Gaping	Strongly Rancid / Painty
		Strong Fermented Vegetables / Sulphur Turnip

		Strong Pungent Strong Taint
Cooked	Strongly Tough (or) Strong Rubbery Desiccated	Strong Sour Strong Bitter Strong Rancid – Painty Strong Fermented Vegetables / Sulphur Turnip Strong Taint Moderate to Strong Ammonia Strong Sickly Sweet / Putrid Fecal

Untrimmed Frill

Frill is the fringed edge of the skin on a fish that runs along the perimeter of the body. Frill is present on all members of the Flatfish family. When cooked, the frill almost always falls off the fillet and can be a hindrance, frustration and waste to many chefs. Furthermore, because the net weight was calculated with the frill on – it boosts the yield and the price of the fish.

Trustworthy processors trim the frill off – truly offering 100% net weight and ensuring optimal end-user satisfaction. To test for untrimmed frill, simply cook the fillet. If the fringed edge of your fillet pulls away from the fillet – than you haven't got much bang for your buck!

Poor Freezing Methods

The type of freezing method used by processors can have a significant effect on the quality of the final product. Most value-added processors that produce “individually quick frozen” seafood use a *tunnel freezer* to freeze fillets. Tunnel freezers are a high-tech freezing unit that fillets pass through on a conveyer belt. The temperature inside the tunnel freezer is extremely cold and the fillets retaining the molecular structure and and flavour retention. Tunnel freezers freeze both Salmon and Whitefish.



In the case of Pollock, many processors place processed fillets on trays on tall vertical racks and roll them rooms or cold storage. This process much slower rate. Slow freezing molecular structure of the flesh and creates a condition called *honeycombing*. Slow freezing also alters the flesh colour from white to brownish. Upon thawing, moisture is lost, texture becomes “mushy” and flavour is diminished.

freeze very quickly – maximizing moisture are commonly used to

unscrupulous large trays, lay the into large freezer freezes products at a degrades the

Slow freezing methods are used solely for financial gain, reducing costs by as much as 3 cents per pound. This deceptive practice is utilized primarily with Pollock - but has been known to occur with other “thin fillet” fish such as Sole.

Excessive Soaking & STPP (Sodium Tripolyphosphate)

Sodium tripolyphosphate (STPP) is a food grade phosphate used to aid in preserving frozen protein products – including seafood. Essentially, STPP preserves moisture within the flesh of the fish. Used responsibly, it prevents drying out during extended periods in the freezer and results in a fresher product for the end-consumer. When abused, fish is over-soaked in STPP, resulting in an unnatural level of water within the flesh.

Every country has its own standards for acceptable levels of phosphates in foods. But in recent years, many seafood producers have increased levels of STPP beyond acceptable limits to boost profits at the expense of their customers.

How does excessive soaking impact product quality?

Moisture comes out of the fish when cooked – thereby diluting sauces, disintegrating flesh and ultimately reducing portion sizes. If a breaded and battered product is oversoaked in STPP the moisture will come out of the fish during cooking and pull the batter off – ruining the product completely.

How can I identify seafood products that have been oversoaked in STPP?

This unscrupulous tactic is more difficult to identify than over-glazing because the STPP captures water *inside* the flesh of the fish. Simply thawing the fish does not release the excess water – the fish needs to be cooked to expose the tactic. Therefore, when conducting product quality tests – you must cook the product. Moisture - a milky white substance - will come out of the fish in the saucepan. To see an example of a Pollock fillet that has been over-soaked – check out our [School of Fish](#) video excerpt.

Poor Workmanship

Workmanship can be defined as the actions involved in processing fish in preparation for delivery to market. Heading, gutting, trimming, filleting and portioning are all examples of workmanship.

Poor workmanship violations include:

- jagged cut lines
- inconsistent portion sizing
- rough handling resulting in gaped fillets
- incomplete bone, gut and/or skin removal
- intentionally concealing inedible bits of fish to boost the weight



All of these violations are implemented out of laziness – or in a deceptive attempt to boost profit margins. Buyers then turn around and unknowingly sell poor quality seafood to retail chains and foodservice establishments. A chef who cooks up a delicious looking fillet only to find out that it is gaping now faces sizing and plate presentation problems. Doubtful that he/she will order from you again!

How can you identify poor workmanship?

Well, this deceptive practice is not species specific. Which means you need to be on the lookout for **poor workmanship** on every purchase decision that you make. As always, we suggest conducting randomized testing of even your most trustworthy suppliers product. Do a thorough investigation. Check for jagged cut lines and turn your fish over because more times than not, while the skin side is smooth – the other side can be quite disintegrated. Also, thaw and cook your fillet – many product deficiencies are masked until cooked!

Married Fillets

Married fillets are two thin fish fillets frozen on top of each other to give the appearance of one larger fillet. The joining process can be achieved in two ways:

1. the use of water
2. the use of a food-grade glue

Water adhesion is chemical free, but the fillets are guaranteed to separate when they are cooked. On the other hand, food glue adhesion will potentially hold the fillets together, but the results cannot be guaranteed and are rarely consistent.

In some cases, the buyer may request a married fillet on purpose as a product option. This is common for breaded and battered products. However, married fillets are often sold deceptively and when cooked – the fillets separate and the portions of the flesh can disintegrate. This impacts yields, flavour, portion size, recipe response and plate presentation. Essentially, unscrupulous processors produce married fillets so that they can charge **you** extra money for a poor-quality product!

How can you identify a married fillet? Unfortunately, in the frozen state it can be difficult to determine if a product is actually two fillets. We recommend testing sample product prior to placing an order. We also recommend continuing to run randomized testing on even your most trustworthy suppliers' product.

Over-Glazing

Over-glazing is practices – and also as water added to protective barrier fish from the unscrupulous weight as fish

Weights and fish be reported net thoroughly audit a abuse laws.



perhaps one of the most common deceptive one of the hardest to detect. Glaze can be defined the fish during the freezing process to form a around the protein. Ultimately, glaze shields the outside air. Water is free - fish is not. Therefore, producers over-glaze fish and disguise water weight.

measures legislation require that the weight of the of glaze. Unfortunately, it is very difficult to product that is frozen, enabling many producers to

What does this mean for a seafood buyer? Essentially, you are paying extra money for water weight and when the fish is thawed, profits simply run down the drain. This results in poor customer satisfaction with end-consumers, retailers and chefs.

How can you make sure that the product you buy is not over-glazed? Check out our educational video [Deceptive Practice Example: Over-glazing](#) - it will take you through the steps required to identify over-glazed product. We recommend requesting samples from any new suppliers to test for over-glazing – as well as other deceptive practices they could be employing. Remember, the industry won't change until buyers demand it!

Inferior Packaging Quality

Believe it or not, the corrugated box and insert liner can both have a significant impact on the quality of frozen seafood. Products are often transported around the world before making their way onto a retail shelf or into a restaurant. The thickness and overall strength of the cardboard is crucial to insulating frozen fish from temperature fluctuations and air penetration, as well as protecting it from rough handling.

The interior plastic liner acts as an additional layer of insulation within the sealed box. Frozen fish fillets can be quite sharp and are a potential hazard to ripping the plastic liner. A severed liner allows air to permeate the fish fillets and ultimately leads to fillet damage and flesh degradation.

Another potential problem is improper box taping. Improper box taping occurs when the packing tape used to seal the box adheres itself to the plastic box liner. When frozen fish shifts within the box, the liner can pull away from the tape and rip open a hole in the liner. Again, this exposes the fillets to the air and potential environmental damage.

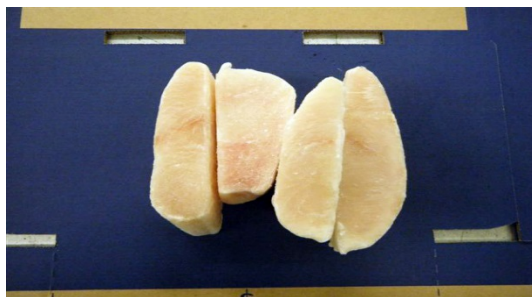
So, how can you make sure that your suppliers aren't skimping on packaging?

- Examine boxes in the freezer
- Given the multiple stages of handling prior to arriving at their final destination, it is reasonable to expect a **minimal** degree of damage to the box
- Look for signs of cardboard failure such as split corners, sagging, moisture damage, peeling and excessive stress
- If the box has sustained excessive damage or failed, it is likely due to inferior corrugated quality
- Open the box and look for rips and tears sustained from sharp fillets or improper box taping

A company that is not investing in top-quality packaging is doing so to cut costs – at your expense. Appearance, taste, recipe response and profitability are all at risk when you accept poor-quality packaging. Instead of merely standing by, expose inferior packaging that jeopardizes product quality, earn credibility with your customers and differentiate yourself from your competition.

Artificial Flesh Color Manipulation

This deceptive practice is exactly how it sounds – processors alter the color of fish to make it appear as though it is better quality. A chemical treatment is applied to the flesh that has a “whitening” effect and is therefore, most commonly used on Halibut.



A large amount of Halibut on the market is caught in Russia and then processed in Asia. Russian Halibut production is reputed for being poorly “bled” fish. This means that blood pools inside the flesh. When the pooled blood is exposed to oxygen it causes oxidation – which turns the flesh, an orange tone. In the industry, this is commonly referred to as “pumpkin”. Deceptive processors in the Asia are known to soak “pumpkin” Halibut fillets in a chemical solution to essentially “bleach” the orange tone out. However – the lightening process only penetrates the surface

layers of the flesh – leaving the deeper layers to remain “pumpkin”. What appears on the surface to be a bright-white flesh – can actually be severely degraded and extremely poor quality. This is of course is done to maximize the profit of unscrupulous processors.

So, how can you make sure that the fish you buy is not artificially whitened? First and foremost – it is crucial that you find a supplier you can trust. Your supplier should offer transparency – and you should demand it. Ask to see an inspection report with photographs documenting the entire production process.