

ENVIRONMENTAL HYGIENE AND MANAGEMENT OF THE FISH MARKET

- 1.** maintain a 6 feet distance between each vendor and only serve customers who wear a mask
- 2.** have a person responsible for handling the cash payments or utilize an online platform for easy swipe or barcode payments
- 3.** wear the proper PPEs at all times such as face masks (non-detachable fisherman's hat with face shield), boots, disposable gloves and aprons
- 4.** keep surroundings clean – free from stagnant water (or standing water) that breeds insects (flies) and rodents
- 5.** keep stalls clean and sanitized at all times and discourage eating, drinking and smoking near product
- 6.** do not set up stalls within 50 meters of a bathroom/toilet facility
- 7.** ensure that water and hand-washing stations are not accessible by animals
- 8.** do not allow fish products to be on the ground
- 9.** ensure your garbage bin is kept closed and emptied regularly; keep area free of litter
- 10.** there should be no animals allowed to roam or defecate in the area
- 11.** ensure that the stalls are free from personal belongings (clothes, blankets, etc.) and other items that can cause contamination
- 12.** stalls should be covered to prevent sunburn of product
- 13.** ensure the area is well ventilated, open, unobstructed space
- 14.** all equipment and surfaces used in the cutting and dressing of fish should be kept cleaned and sanitized before use; avoid using wooden cutting boards as knife cuts allow for bacterial growth, survival and a source of potential contamination unless cleaned and sanitized properly
- 15.** sufficient potable water should be available at all times on the stall site; the use of water tanks or drums, if used must be kept cleaned and covered
- 16.** fish waste, which is high in protein can be returned to the sea as food for other fish or can be collected and provided to processors who can use it to sustainably provide potential sources of:
 - a.** fish oil and meal/flour
 - b.** silage – used as a feed for domestic animals/aquaculture, or
 - c.** fertilizer in terrestrial farming

PERSONAL HYGIENE

- 1.** bathe before heading to work (fish mart or out to sea)
- 2.** wear clean clothing, proper PPEs like face masks (non-detachable fisherman's hat with face shield), boots, disposable gloves and aprons
- 3.** maintain 3 feet distance between each other while working, where possible
- 4.** wash your hands regularly - before and after handling fish, after using the toilet, eating, handling money, etc.
- 5.** seaside vendors should wash their hands with potable water and soap; avoid standing water (e.g. water in a bucket) or dirty water; fishermen at sea can use the sea water to wash/rinse their hands
- 6.** use hand sanitizer, if available after washing hands
- 7.** if using reusable gloves (PVC, neoprene and spectra), wash the outside with soap and hot water then, turn inside out and soak in soapy water, rub and rinse then air dry or place in a dryer; whether using a reusable or disposable glove, wash hands after removing gloves.
- 8.** properly cover cuts and wounds, use water-proof bandages
- 9.** keep fingernails manicured and trimmed
- 10.** do not wear jewelry as it may fall into the product and pose a health concern
- 11.** refrain from eating, drinking, chewing gum, spitting, smoking, coughing or sneezing over or near the product; turn away from customer and/or product and proceed to do so with mask on
- 12.** do not handle fish if sick with diarrhea or vomiting
- 13.** avoid touching the face (ears, nose, teeth, etc.); wash hands if you happened to have touched such areas
- 14.** have a person responsible for handling the cash payments or utilize an online platform for easy swipe or barcode payments
- 15.** rinse fish under flowing, potable water



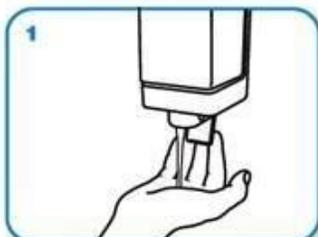
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SAFETY AUTHORITY

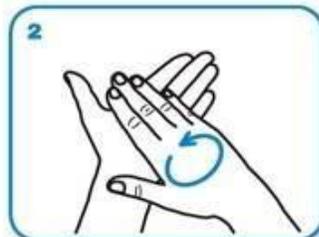
HAND WASHING GUIDE



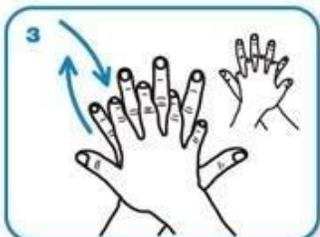
Wet hands with water



apply enough soap to cover all
hand surfaces.



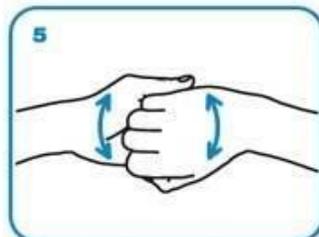
Rub hands palm to palm



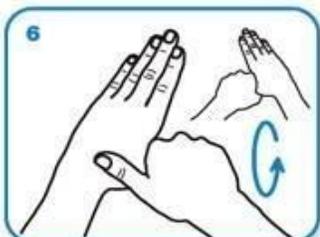
right palm over left dorsum
with interlaced fingers
and vice versa



palm to palm with fingers
interlaced



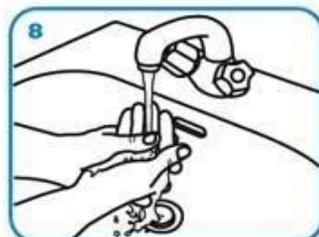
backs of fingers to opposing
palms with fingers interlocked



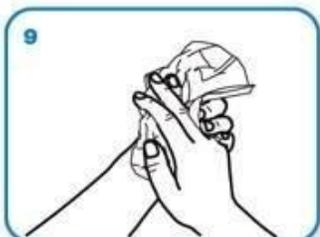
rotational rubbing of left thumb
clasped in right palm
and vice versa



rotational rubbing, backwards
and forwards with clasped
fingers of right hand in left
palm and vice versa.



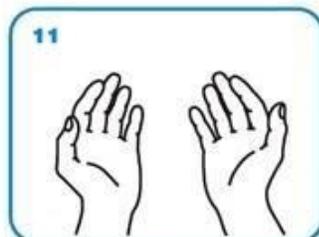
Rinse hands with water



dry thoroughly with a single
use towel



use towel to turn off faucet



...and your hands are safe.

This guide was retrieved on April 23, 2020 from: <https://globalnews.ca/news/2635537/squeaky-clean-here-are-the-6-steps-to-washing-hands-killing-germs/>

In consultation with the Department of Marine Resources

FISHING BOAT HYGIENE

- 1.** maintain 3 feet distance between each other while working, where possible
- 2.** ensure the boat is safe for operation (use on fishing trip)
- 3.** maintain personal hygiene in the boat (clean boat and equipment with clean water and approved detergent)
- 4.** wear clean clothing and proper PPEs like face masks (non-detachable fisherman's hat with face shield), boots, disposable gloves and aprons
- 5.** inspect boats and equipment for cleanliness and/or damages
- 6.** if possible, avoid animals (dogs, cats, etc.), in the fishing boat; if unavoidable, ensure that the animal is away from fish production areas
- 7.** use the boat for fishing purposes only to reduce risks of contamination; ensure that different fish species are well secured/packaged and separated in the cooler to avoid cross contamination and potential food poisoning or allergic reactions
- 8.** use, hot tap water (140-150 degrees Fahrenheit) or a well water (treated with chlorine tablets) source to clean and sanitize boats and equipment; if using a bleach solution (2% - 3oz household bleach/gal water), ensure cleaning and sanitizing is done away from bodies of water to avoid damaging the ecosystem;
- 9.** do not use water that is affected by sewage waste
- 10.** allow the boat to dry properly before using
- 11.** use a disinfectant spray before and after each charter

PROPER ICING AND STORAGE OF FISH

- 1.** ensure that the ice is manufactured, handled, transported, stored and used in a hygienic manner by not exposing to physical, chemical and biological contaminants
- 2.** use fresh, potable water to make ice
- 3.** use clean ice to preserve the freshness, flavor and value of fish after capture and during transport
- 4.** use a clean and sanitized cooler or cooling box/container filled with ice to keep fish cool for long periods
- 5.** use adequate amounts of ice based on the cooling container, the ambient temperature and time of storage
- 6.** use flaked or mechanically crushed ice to cool fish after capture; avoid ice blocks
- 7.** for adequate cooling, pack 1kg of ice with 1kg of fish
- 8.** use thermally insulated, clean, smooth, easy to clean, durable coolers/containers in good repair, made of a non-toxic food grade material that are only used for fish storage
- 9.** arrange 5cm of ice in the bottom of a cooler and leave space to do the same along the sides; pack a layer of fish then a layer of ice and alternate until another 5cm layer is placed on top; close the tightfitting lid; ensure that the cooler has a way to remove melted ice water so it does not remain stagnant
- 10.** upon returning to the dock, ensure ice has not melted; add ice if necessary to keep fish cool
- 11.** handle fish with care to avoid physical damage when removing from ice due to the rigor mortis effect
- 12.** ensure personal and production hygiene during ice manufacture (3ft of physical distancing, wash hands regularly, bathe, wear clean clothing, proper PPEs - face masks, boots, disposable gloves and aprons)

MAINTAINING FISH QUALITY

High Quality Fish = High Price
Poor Quality Fish = Poor Price

1. cool fish thoroughly and maintain cool (40 degrees Fahrenheit or below) until time of sale or processing
2. avoid damaging or crushing the fish during storage and transport
3. keep the fish clean and in good, healthy appearance
4. work efficiently to avoid reduction in quality
5. maintain good hygiene practices; wear the proper PPEs (face masks, boots, disposable gloves and aprons)

Quality evaluation of fresh fin fish using sensory evaluation

| Class | Gills | Eyes | Body Appearance | Texture | Quality |
|-------|--|---|--|---|--|
| 5 | <ul style="list-style-type: none"> • Dark red colour • Some thin clear slime • Foul smell | <ul style="list-style-type: none"> • Bright, metallic • Clear pupils • Convex eyes | <ul style="list-style-type: none"> • Natural colour • Iridescent • Firm scales • Little/or no slime | <ul style="list-style-type: none"> • Firm before or in rigor | <ul style="list-style-type: none"> • Excellence |
| 4 | <ul style="list-style-type: none"> • Red colour • Some slime, but still thin and clear • No smell | <ul style="list-style-type: none"> • Bright metallic • Slightly cloudy pupils • Slightly convex eyes | <ul style="list-style-type: none"> • Natural colours • Firm scales • Some slime | <ul style="list-style-type: none"> • Firm | <ul style="list-style-type: none"> • Good |
| 3 | <ul style="list-style-type: none"> • Red –brown colour • Some thick slime • Beery/mousey/warm smell | <ul style="list-style-type: none"> • Dull • Pupils cloudy • Flat • Some blood | <ul style="list-style-type: none"> • Slight red colour • Scale loose • More thick slime | <ul style="list-style-type: none"> • Firm | <ul style="list-style-type: none"> • Average |
| 2 | <ul style="list-style-type: none"> • Brown colour • A lot of slime • Slight off smell | <ul style="list-style-type: none"> • Dull • Pupils cloudy • Slightly concave eyes • bloody | <ul style="list-style-type: none"> • Red/yellow colour • Scales missing • Dry skin • A lot of slime | <ul style="list-style-type: none"> • Soft | <ul style="list-style-type: none"> • Poor |
| 1 | <ul style="list-style-type: none"> • Brown colour • A lot of slime • Bad/ammonia smell | <ul style="list-style-type: none"> • Dull • Pupils cloudy • Concave eyes • With blood | <ul style="list-style-type: none"> • Red/yellow colour • Few scales • Dry skin • A lot of thick yellow slime | <ul style="list-style-type: none"> • Very soft • Mark of finger left if pressed | <ul style="list-style-type: none"> • Very poor |

Retrieved on April 23, 2020 from: [training_manual_on_improved_fish_handling\(1\).pdf](#)

GOOD PRACTICES DURING FISH HANDLING AND TRANSPORT

1. maintain 3 feet distance between each other while working, where possible
2. bathe before heading to work, wear clean clothing and proper PPEs (face masks, (non-detachable fisherman's hat with face shield) boots, disposable gloves and aprons)
3. wash hands regularly - before and after handling fish, after using the toilet, eating, handling money, etc. and use a hand sanitizer after each delivery
4. maintain temperature of the fish by cooling as quickly as possible to avoid contamination from spoilage
5. handle fish carefully to avoid physical damage
6. keep fish caught at different times separate as older fish will spoil quicker
7. separate large from smaller fish as the latter spoil more quickly
8. clean fish coolers/containers for transport after each use
9. use good hygienic practices at all stages of fish handling, processing and transport
10. utilize trucks and boats certified by a BAHFSA authorized officer
11. clean trucks and boats with clean water and an approved detergent
12. measure temperature (40 degrees Fahrenheit or below) of fish before loading to determine if more ice is needed; measure again at its destination to ensure the cold chain has been maintained
13. use a 1:1 ratio to pack fish, i.e., 1kg of fish to 1Kg of ice for adequate cooling
14. use a designated truck or boat for fish transport only, not for transporting other types of goods
15. use trucks or boats that have a separate storage area or compartment for fish
16. the storage compartment should be insulated or lined with a durable, smooth and easy to clean material
17. storage area or container should have a tight fitting, sealable door or lid to maintain a cool temperature during transport
18. the cold storage area or compartment should operate independently of the truck or boat engine