

- All the windows shall be fitted with fly proofing nets
- All the drainage openings shall be covered with grill/net
- Place rodent traps in the premises of the processing plant as per the rodent trap map
- Check hygiene and health of workers at regular intervals and maintain their health card
- Ensure the quality of the products at different stages by regular checking in the laboratory
- Raw materials of degraded quality should never be taken for processing
- Boxes in which raw materials are brought to the factory should be cleaned and sanitized daily
- Temperature of freezers and chill rooms should be checked regularly
- The maintenance work of freezers and chill rooms should be carried out on time
- Maintain a detailed record of daily production of the factory for traceability of the products
- Never process different varieties of seafood like shrimps, cuttle fish, squids, fishes etc together at same place. Process them separately.
- Never keep the fish materials on the floor of freezer for freezing



- The chemicals used in the processing factory should be stored in a separate room. Dry and wet chemicals are to be kept separately with proper labeling
- Cartons, boxes and plastic materials used for packing the processed seafood should be stacked neatly and stored in clean and dry area.
- Vehicles entering the processing factory should be clean and disinfected. Facility to wash the tyres of the vehicles should be there at the entrance to the factory.

Thus, if we maintain hygienic standards in seafood factories it is possible to produce and export high quality products and to earn much better returns in foreign exchange.



### Network for Fish Quality Management and Sustainable Fishing (NETFISH)

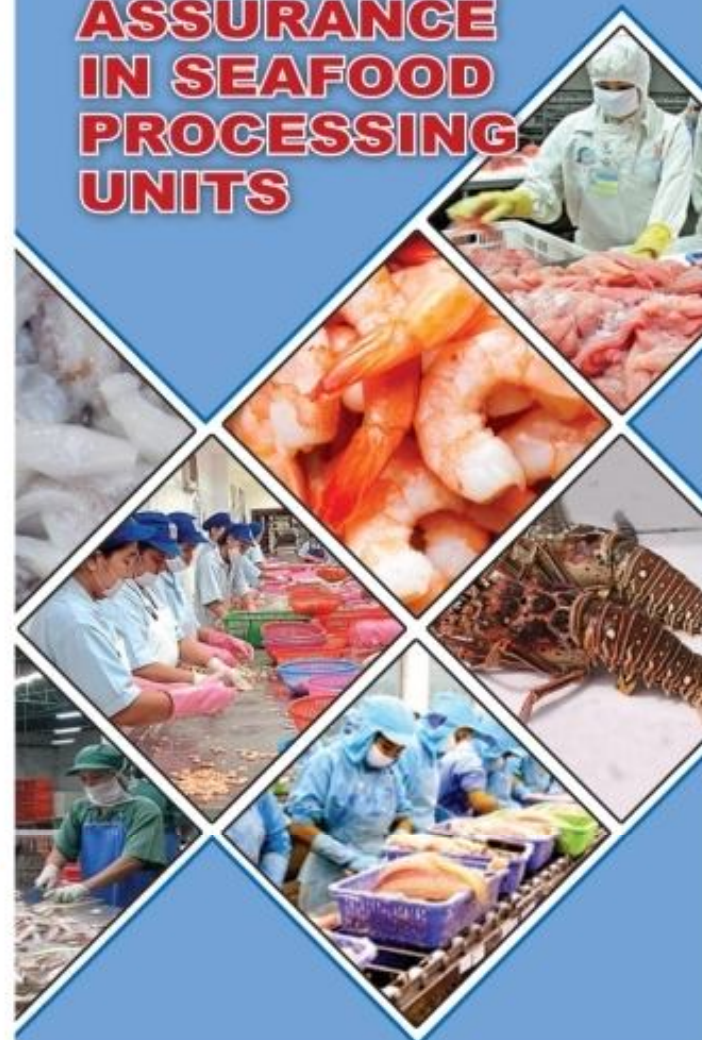
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## HYGIENE & QUALITY ASSURANCE IN SEAFOOD PROCESSING UNITS



NETFISH



MPEDA



Fish & Fishery products are easily and highly perishable commodities. They have to be handled with utmost care to maintain the quality. Seafood factories are the place where the fish materials are finally processed and packed for export. This industry can sustain only if we produce quality seafood by strictly following the right procedures of international quality standards.

### Major Reasons for Rejection of seafood products by importing countries

- presence of filth
- presence of deadly microbes such as Salmonella, Vibrio etc.
- presence of banned antibiotics and pesticides

### Filth problem & its solutions

Filth includes whole insects and fragments, shells, excreta, hairs, feather barbules, nail polish etc. which is left behind in the seafood product during different stages of processing. Lack of proper cleaning and hurry to finish work in production are the main reasons for filth problem. Proper care in pre-processing units itself can minimize the filth problem.

- Perform filth washing using filth washing machines

- Re-examine the products after filth washing to ensure that all filths are removed
- Engage sufficient workers to check & clean filth, while arranging the products for freezing
- Filth can also be removed from processing line by engaging enough workers

### Microbial Contamination

Microbes are not visible to our naked eyes. Microbes like Salmonella, Vibrio, E. coli and Staphylococcus are spread by unhygienic conditions in the processing factory as well as by unhygienic workers.

### To avoid microbial contaminations

- All the workers should maintain personal hygiene
- Workers should follow standard hand washing procedure
- Tables, walls, drainages, freezers, utensils, machineries and other equipments should be cleaned and sanitized daily, before and



after the work. First wash everything using water, then wash with soap/detergent. Then wash with clean water. Then sanitize them using chlorinated water and finally rinse with potable water.



### Other Quality Assurance Measures

- Use enough quantity of good quality ice for fish storage
- Water used in processing factory should be clean and free of microbes
- Water should pass through water treatment plant with required chlorination
- Water tank has to be cleaned and sanitized properly at regular intervals and to be documented
- During peak fishing season/peak harvesting period of cultured shrimp, proper material handling management is required
- Wastes from the processing factory should be collected and disposed off properly
- Never allow the fish and other waste materials to get decayed inside the processing factory
- Effluent treatment plant shall be maintained properly in the processing plant
- All the exit points such as doors shall be fitted with automatic air curtain and blinds to prevent the entry of flies, mosquitoes etc.