Unit – V: Quality Assurance, Management and Certification

5.1 Seafood Quality Assurance and Systems

1. Good Manufacturing Practices (GMPs)

1. Good Manufacturing Practices refer to the essential conditions and procedures required to produce safe seafood products.
2. GMPs ensure that every stage of fish handling, processing, and packaging meets hygienic and safety requirements.
3. The plant building must be well designed with non-absorbent walls, smooth floors, and proper drainage systems.
4. Cleanliness and sanitation must be maintained in all processing areas, with regular cleaning schedules.
5. Proper waste disposal and pest control programs are vital to prevent contamination.
6. Employees should follow hygiene rules such as wearing clean uniforms, gloves, and hair covers.
7. Only potable water and hygienic ice must be used in processing.
8. Equipment and utensils should be regularly cleaned and sterilized.
9. Documentation and record-keeping help in traceability and monitoring of each process.
10. Overall, GMP forms the foundation for higher food safety systems like HACCP and ISO certification.

2. Good Laboratory Practices (GLPs)

1. GLPs ensure the accuracy, reliability, and integrity of laboratory testing and analytical work.
2. They are applied in testing raw materials, processing water, and finished products for quality assurance.
3. Laboratories must be properly designed, ventilated, and equipped with calibrated instruments.
4. Qualified and trained personnel should carry out all laboratory activities.
5. Each test must follow standard procedures and be documented systematically.
6. Samples should be properly labeled and stored to maintain traceability.
7. Quality control samples and proficiency tests help in ensuring consistent results.
8. Safety measures such as use of gloves, goggles, and chemical handling protocols must

be followed.
9. Laboratory waste should be disposed of safely to avoid contamination.
10. GLPs strengthen the credibility of testing results for national and international acceptance.

3. Standard Operating Procedures (SOPs)
1. SOPs are written step-by-step instructions that define how specific operations should be performed.
2. They maintain uniformity and consistency in production and safety practices.
3. Each SOP covers the method, frequency, responsible person, and safety measures.
4. Common SOPs include equipment cleaning, sanitation, temperature monitoring, and packaging.
5. SOPs help in reducing human errors during seafood processing.
6. Training workers to follow SOPs improves efficiency and accountability.
7. Regular review and updating of SOPs are essential to match technological changes.
8. Proper documentation ensures that all actions are traceable.
9. Compliance with SOPs supports GMP and HACCP systems effectively.
10. They form the backbone of routine quality operations in seafood industries.

4. Concept of Hazard Analysis and Critical Control Points (HACCP)
1. HACCP is a preventive food safety system focusing on identifying and controlling hazards.
2. It deals with biological, chemical, and physical hazards that can affect seafood safety.
3. The system is based on seven principles: hazard analysis, CCP identification, critical limits, monitoring, corrective actions, verification, and record keeping.
4. Each step in processing—such as receiving, cooking, freezing, and packing—is analyzed for potential risks.
5. Temperature control and hygiene during processing are considered critical control points.
6. Regular monitoring ensures that all CCPs remain within safe limits.
7. If a deviation occurs, corrective action is taken immediately to prevent unsafe products.
8. Verification confirms that the HACCP plan is working effectively.
9. Documentation provides proof of safety and compliance during audits.

10. HACCP builds customer confidence and is mandatory for seafood exports under international law.

5.2 National and International Standards

5. ISO 9000:2000 Series of Quality Assurance System

1. ISO 9000 is a globally accepted series of quality management standards developed by the International Organization for Standardization.
2. It emphasizes customer satisfaction, documentation, and continuous improvement.
3. The 2000 version promotes a process-oriented approach to quality management.
4. In seafood industries, ISO certification assures uniformity in product quality and safety.
5. It covers every stage of production including sourcing, processing, packing, and dispatch.
6. Internal audits and corrective actions are essential parts of the system.
7. Management involvement and employee participation are encouraged for improvement.
8. ISO certification improves export opportunities and market reputation.
9. It helps integrate other safety systems like HACCP and ISO 22000.
10. Regular reviews ensure that the company continues to meet global food safety requirements.

6. Codex Alimentarius

1. Codex Alimentarius means “Food Code” and is developed by FAO and WHO for global food safety.
2. It sets international standards, guidelines, and codes of practice for all food products.
3. The main goal is to protect consumer health and ensure fair practices in global food trade.
4. It provides clear rules for hygiene, contaminants, additives, and labeling of seafood products.
5. Codex standards are recognized by the World Trade Organization (WTO).
6. They serve as reference points for national food regulations in member countries.
7. For fish and fishery products, Codex offers specific guidelines for handling, processing, and storage.
8. Compliance with Codex standards is essential for seafood export certification.
9. Countries like India adopt Codex principles to harmonize national food safety laws.

10. Following Codex improves product quality, international acceptance, and consumer trust.