# Intake of Fish and Shellfish

Learner
Workbook

| Title | Understand how to intake fish/shellfish | |
|---|---|---|
| Level | 2 | |
| Credit value | 3 | |
| **Learning Outcomes** | | **Assessment Criteria** |
| **The learner will:** | | **The learner can:** |
| 1. Know what the requirements are for the intake of fish/shellfish | | 1.1 Describe the facilities required to intake fish/shellfish<br><br>1.2 Outline the labelling and traceability arrangements for the intake of fish/shellfish<br><br>1.3 Outline why it is important to follow organisational intake procedures<br><br>1.4 State why it is important to work within limits of own authority and competence<br><br>1.5 Describe how to carry out and the importance of recording, reporting and communicating. |
| 2. Know how to prepare to intake fish/shellfish | | 2.1 State how to obtain the intake specifications<br><br>2.2 Describe how to interpret the intake specifications<br><br>2.3 Outline how to prepare and maintain work areas used for the intake of fish/shellfish<br><br>2.4 Describe how fish/shellfish are transported to maintain condition and quality<br><br>2.5 State how to assess the condition of vehicles<br><br>2.6 Outline how to assess condition of transportation materials and facilities. |
| 3. Know how to intake fish/shellfish | | 3.1 State the handling methods that maintain the condition of fish/shellfish<br><br>3.2 Describe how to identify fish/shellfish species<br><br>3.3 Outline how to recognise fish/shellfish species by size and quality<br><br>3.4 Describe how to sample batches of fish/shellfish<br><br>3.5 State the inspection methods relating to:<br><br>• temperature<br>• quality<br>• freshness<br>• condition |

| | |
|---|---|
| | • labelling. |
| 4. Know how to finish the intake process | 4.1 State the common quality problems and their likely causes<br><br>4.2 Describe how to deal with non-conforming fish/shellfish that are not fit for use<br><br>4.3 Outline the action to take when the **intake** specification is not met<br><br>4.4 State why it is important to dispose of waste according to specified procedures. |

# Achieving the Unit

The following information will support you with the knowledge requirements to help you achieve this unit.

Whilst the booklet provides a good source of information, it is not exhaustive. We recommend that you research information yourself via the internet or at your local library. Useful sources of information include the Sea Fish Industry Authority (www.seafish.org) and the Seafood Training Academy (www.seafoodacademy.org).

Seafish have published an in company coaching guide to delivering training in fish and shellfish intake operations. There is more information on resources at the end of this workbook

…….Good Luck!

Lee Cooper
Seafish

All the images and photos used in this Learner Workbook have been sourced by Seafish.

## UNIT DETAILS

**Unit Number:** FP.108K

**Unit Qualification Number:**

**Title:** Understand how to intake fish and shellfish
**Level: 2**

**Credit Value: 3**

## UNIT AIMS

This unit supports workforce development for those who are responsible for the receiving of fish and/or shellfish into seafood processing premises. The unit may also be suitable for intake (reception) activities in seafood retail businesses.

The unit is designed for use primarily by operatives and others who carry out these workplace activities. The aim of the unit is to assess knowledge and understanding to recognised National Occupational Standards.

## CONTENTS

## SECTION ONE:

## INTRODUCTION

The intake role within a seafood factory or seafood retailer/fishmonger is a vital one.

Intake is essential for quality and food safety as itis the first opportunity your business has to check the quality and safety of the raw materials that will soon be turned into finished products, or sold to discerning customers.

Every raw material or ingredient brought into your business is likely to have a supply or intake specification. The specification, along with more generic intake policies and procedures will specify a range of conditions that must be met BEFORE you should accept delivery.

Many of these conditions are there to establish the quality of the materials and how they have been handled. Others are needed to ensure that food safety has not been compromised, while others are important for ensuring that what is delivered is what has been ordered, and that all the paperwork is in good order.

Without an effective intake system both processing and sales would suffer. Much of modern processing and seafood retail sales depends upon effective stock control and just in time deliveries, and fish and shellfish intake is a key link in this chain.

NOTE: This Learner Workbook and associated unit addresses the intake of fish and shellfish only. The intake of ingredients such as sauces and spices, materials including labels, and packaging are not covered.

## FACILITIES

Critical points in the intake process include:

- Inspection of deliveries;
- Temperature checking;
- Temperature control;
- Raw material testing;
- Supplier documentation;
- Vehicle inspection;
- Pre-acceptance storage.

And no doubt several other points as well.

The key issue here is that to carry out intake correctly, even on the scale of a high street fishmonger's delivery, requires space and facilities to be available.

Space must be available for a delivery to be unloaded and checked before it is accepted into the factory or shop. Ideally this storage space will be temperature controlled, hygienic and spacious. There should be somewhere to check the paperwork – a bench or perhaps even an office.

Intake facilities vary from business to business. How would you describe yours?

ACTIVITY

1. Describe the intake facilities in your business.

2. In what way could they be improved?

## ORGANISATIONAL PROCEDURES

These may be varied, but are likely to include intake specifications, intake records and intake work instructions.

These documents will cover everything from the state of the delivery vehicle to how any raw material testing samples or checks should be carried out.

ACTIVITY

Discuss this with your supervisor if necessary. Please list all of the documents, instructions, policies and procedures that you have to work with during the intake of fish and shellfish. If you can, show with a tick in the correct box if the document is a specification, record or work instruction.

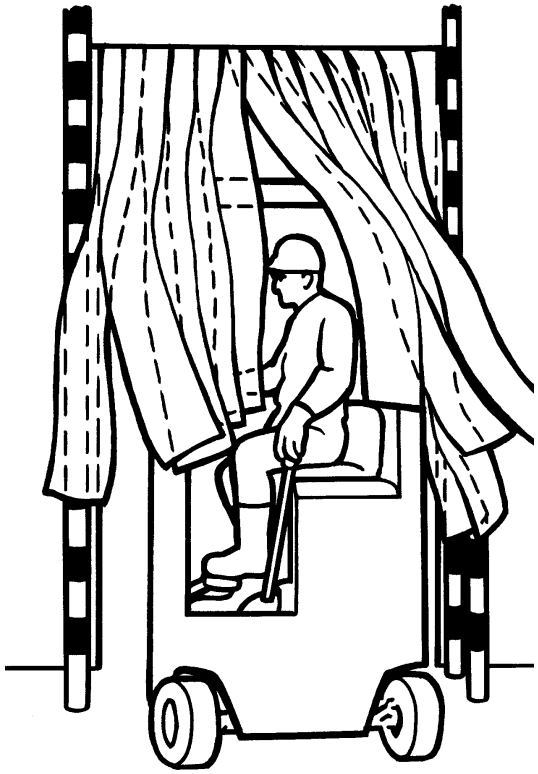
| Document Title | SPECIFICATION | WORK INSTRUCTION | RECORD |
|---|---|---|---|
| | | | |

Which of the documents above relate to traceability and labelling? Underline the appropriate documents.

What is the value of having effective traceability and labelling procedures in place?

Why is it important that you follow your company's procedures on intake?

## SECTION TWO:



INTAKE SPECIFICATIONS

In Section One you listed all of the specifications, records and work instructions required during the intake process, so you will now be familiar with how to obtain the intake specifications during normal working.

Where are the intake specifications usually stored?

_____

Who is responsible for keeping them up to date?

_____

Who will obtain them prior to starting Intake?

_____

Do you fully understand the detail of these specifications? Yes / No

If No, what steps do you need to take to be able to understand them?

_____

_____

_____

PREPARING FOR INTAKE

What preparations are we talking about?

The preparations may be grouped into the following:

- Access and handling:
  - Is there sufficient clear space?
  - Is the space adequate and safe to work in?
  - Is access to this space clear?
  - Are the required handling facilities / equipment ready?
    - Fork lift;
    - Pallet trucks;

        - Staff.

- Food safety and quality:
    - Are the facilities clean and hygienic?
    - Are there any apparent risks to food safety?
    - Ambient/environmental temperatures correct?
        - Intake space
        - Intake storage.

- Inspection checking/equipment:
    - Temperature probe(s) available and calibrated;
    - Sampling equipment available;
    - Weigh scales available and calibrated.

- Documentation available:
    - Supplier delivery documents;
    - Product descriptions, codes etc;
    - Delivery specification
        - Product type;
        - Temperature;
        - Quantity;
        - Quality.
    - In company labels and batch codes.

- Non conformance:
    - Criteria for non conformance;
    - Space to segregate non conforming product;
    - Labels and codes for non conforming product.

This may seem a comprehensive list, but you may well have other preparations that fall outside of these groups. You may also not agree with our list.

ACTIVITY

Put a tick or cross against each of the bullet points above to indicate if your preparations for intake include each of the items on our list. If we have missed out something important then add it to the list above.

ACTIVITY

Please outline briefly how you prepare for the intake of fish or shellfish. In what order do you do them? Are any of them critical control points (CCP) in the HACCP plan? Hopefully we have left enough space.

| Preparation Stage/Step | Is this a CCP? |
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The list above should include some stages such as clear and clean workspace, obtain documents, check delivery specification etc.  Please use your own words.

# VEHICLE AND DELIVERY INSPECTIONS

What kinds of fish or shellfish are usually delivered?

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What form(s) are they in? (whole, live, H&G, chilled, frozen, fillets etc)

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How are they delivered to your company?

Are the vehicles used to deliver fish or shellfish, owned by: (tick all that apply)

- Your company
- The supplier company
- Independent transport
- Other (please specify) _____

Are the vehicles temperature controlled? Yes / No
If Yes, what are the target temperatures? _____ $^{0}$C

Transport vehicles are part of the quality process.

How?

"The fish processing industry relies on the use of temperature controlled transport for the supply of raw material in the form of bulk fresh or frozen fish and/or shellfish. The quality of the material received at the point of intake, is dependent on the condition of the delivery vehicle. It is therefore essential that the vehicle is checked against the specified standards."

Please describe how you think the delivery vehicles your company uses actually contribute to quality.

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Transport vehicles must be appropriate for the task and should be inspected as part of the intake process to ensure this. What kind of checks are we talking about?

We recommend that the following vehicle checks are made at point of intake.

**1. The vehicle must be appropriate to the task**

It should be designed to carry temperature controlled products and capable of preventing the fish/shellfish from being contaminated. It must be dedicated to the task and not used for the transport of other materials

**2. The inside of the vehicle must be at the required temperature**

For chilled product $0^{o}C$ – $5^{o}C$
For frozen product $-18^{o}C$ or colder
Ambient temperatures may be suitable for live transport, or for well iced local transport

**3. The vehicle must be clean**

It must meet the required standards of cleanliness to minimise the opportunities for bacterial contamination during the journey.

**4. The vehicle must be free from taints**

Fish/shellfish can be tainted by odours resulting from ineffective cleaning, inappropriate cleaning, agent usage, inappropriate paints usage, fuels spillages etc.

**5. The vehicle must be free from signs of pest infestation**

There should be no signs to indicate that pests had accessed the vehicle. For example: droppings and foot prints.

**6. The vehicle must be free from damage**

The vehicle should be free from damage that may impact on the integrity of the vehicle and/or contaminate product with debris of any kind.

**SECTION THREE:**

FISH AND SHELLFISH IDENTIFICATION

Itis important that you can recognise all of the various species and forms that you are likely to encounter during normal intake activities.

Most seafood processing businesses will specialise in a few types of species, while fish merchants and fishmongers/retailers will need to be able to identify a larger number of species.

ACTIVITY

List the main species and forms you are likely to encounter during intake operations. Forms include whole, H&G, fillets, frozen, iced, live etc. Wehave included a couple of examples.

| Species | Form |
|---|---|
| Haddock | Usually gutted on ice, occasionally H&G block frozen |
| Brown Crab | Whole, live |
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Fishmongers may well have to deal with 20+ species of fish and shellfish as frozen, chilled, cooked, and live products.

SAMPLING AND QUALITY CHECKING

The starting point for sampling and quality checking is the *production specification*. This specification defines what the finished product should be.

Working back from that we arrive at a *raw materials specification* and for the purposes of intake procedures, this *raw materials specification* is used to determine the procedures for sampling and quality checking.

The purpose of sampling is to collect samples for testing and analysis. The samples are selected in such a way that it is reasonable to assume that they can represent the entire consignment; batch, box, carton etc – whatever is decided is an appropriate batch.

Sampling can vary from taking one fish per box, one box per consignment, six oysters per basket etc. Sampling may mean setting aside a few fish for weighing and a sensory analysis, or it may mean sending off scallop tissues for biotoxin testing.

Whatever tests are to be carried out, it is important that samples are:

- Representative
- Securely stored
- Labeled accurately
- Recorded accurately

ACTIVITY

Look at your organisational sampling procedures (may be referred to as monitoring procedures) and answer the questions as well as possible.

Describe an example of a type of intake sample carried out[1]:

How are the samples taken representative of the batch?

How are the samples stored prior to testing?

What information is placed on the sample labels?

What tests are carried out on these samples?

Are the samples stored or returned to the batch for processing?

**Quality Checking**

After sampling itis time to carry out the quality checks.

Quality is usually defined as ‘conforming to the customers’ requirements’.

In this instance the customer can be the production department that it to process the fish or shellfish, or the customer who will buy that seafood product from your counter later in the day.

Quality will include an assessment of the ‘organoleptic quality[2]’ of the fish or shellfish. It will also include other factors demanded by the customer, as well as a few factors required by regulations or good manufacturing principles.

You will have started to identify the quality checks when you listed the tests above.

Your list may have included some of these:

[1] For example – gutted whole salmon, chilled, delivered from salmon farm
[2] Most importantly, what it will look, taste and smell like when cooked and eaten

Check weights – ranging from weight/size of individual pieces up to overall consignment weight;

Organoleptic checks – appearance, odour, texture and taste;

Temperature – actual temp measurements or perhaps just visual confirmation of sufficient ice;

Packaging - appearance and integrity of packaging;

Labelling and documentation – correct and complete;

Condition - most commonly the oil content of oil rich fish or the impact of spawning on the quality of fish and shellfish.

ACTIVITY

Review the appropriate sampling and testing procedures with your supervisor and summarise the conclusions below.

What are your procedures for measuring intake temperatures?

What are your procedures for measuring intake organoleptic[3] quality?

How do you assess the condition of raw materials?

[3] For more information on how this is done, see this webpage www.seafoodacademy.org/SeafoodQualityAssessment.html

## Fish Quality Assessment

Fish quality assessment training courses are available from Seafish ranging from half day introductory courses to week long advanced courses. Seafish also has a series of short video programmes on quality assessment, and you may well have received some training from your employer.

The basic principles of quality assessment of fresh or frozen seafood or live shellfish are:

### 1. Fresh fish

Use your senses; look, smell, and touch as indicators of freshness, including:

- Eyes should be bright and clear;
- Skin should be bright with a good sheen;
- No dents, discolouration or discoloured slime;
- Gills should be bright blood red;
- Flesh which is smooth, firm and springy to touch;
- A fresh pleasant sea weedy smell should be present.

### 2. Frozen fish

You should check the following:

- Colour should be consistent with no white patches (freezer burn);
- No ice crystals on its surface (thawing and refreezing);
- Flesh should be solid to the touch (not defrosted).

### 3. Live Shellfish

Look for the following:

- Molluscs should remain closed or shut rapidly when tapped and have a fresh sea weedy smell;
- Live crustaceans should smell fresh and sea weedy and be quite active when touched.

GOOD HANDLING PROCEDURES

Fish and shellfish are highly perishable commodities. Even frozen materials can lose quality and value if handled incorrectly.

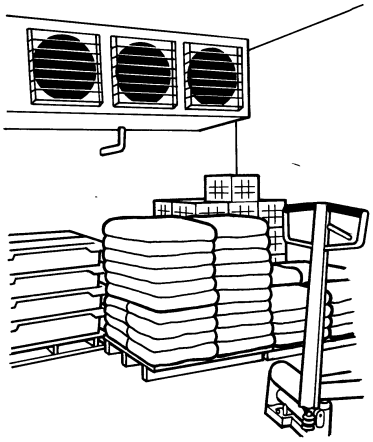
Seafish has a range of technical documents, guides and learning materials on maintaining the quality of fish and shellfish from harvesting through to final consumption, some of which are available via their website.

There are five words though that can be used to summarise the overall approach.

**Quick ◊ Clean ◊ Cool ◊ Careful ◊ Consistent**

**Quick** – don't rush your work, but carry out your step in the chain from harvest to consumption as quickly as possible without compromising quality. Time is money and itis also quality.

**Clean** – Weare dealing with people's food, so cleanliness is essential to good food safety and also good quality. Work hygienically in clean surroundings and avoid compromising the fish and shellfish by exposing them to contamination.



**Cool** – temperature is important so keep fish and shellfish at the correct temperature. This may be ambient temperature for live products, iced or chilled for some products and deep frozen for others. The less time fish and shellfish spend out of the chiller/freezer the better. Changes in the temperature of frozen material can cause significant quality losses EVEN if it always remains frozen. Temperature abuse is one of the main causes of avoidable quality losses in the seafood industry.

**Careful** – Fish and shellfish are delicate, even block frozen fish should be treated with care. Live shellfish, particularly bivalves, react badly to rough handling and temperature abuse.

**Consistent** – Find out exactly what should be done to handle the fish and shellfish to maintain their condition, and minimise any avoidable quality losses while they are in your care. Now that you know what to do, do it. Do it every time, do it consistently and help others to do it as well.

**QUALITY ISSUES**

A key role of the Intake Process is to separate out what should be allowed into the factory/shop from what is suspect, or to be more precise ‘non-conforming’.

For each quality check carried out there should be a condition that separates conformance from non-conformance.

For example:

- Temperature of iced fish must be below $4^0$C. This is checked with a calibrated temperature probe and if temperatures are exceeded the material is non-conforming.
- No signs of pests. A little trickier to carry out as it may require an inspection of the packaging as well as the delivery vehicle, and signs if present may be harder to interpret.
- Torry score of 7.5 is the minimum accepted for frozen haddock fillets.
- Average size of salmon is 4kg, minimum size 3.2kg. Check weighing will answer the questions of average and minimum sizes.
- Less than 20 milligrams of domoic acid per kilogram of edible scallop meat is permitted.

The range of tests and limits is highly varied. The range of actions to be taken when tests show products are borderline or non-conforming are much less varied.

The initial steps are usually the same:

1. Segregate or set aside the non conforming batch;
2. Inform an appropriate person;
3. Record the findings.

The next steps may vary and can include any of the following non-conformance actions:

- Reject the batch;
- Take additional samples to quantify the problem;
- Handle the batch differently:
    - Small fish may be had filleted;
    - Scallops close to the limits may be shucked as roe-off;
    - Impact of temperature abuse may be minimal, but should be assessed through additional quality testing.
- In extreme cases the supplier or transport company may be de-listed;
- Waste that is generated by the non conformance will have to be disposed of.

ACTIVITY

For at least three examples, please describe common quality problems you have encountered during fish and shellfish intake activities.

Please explain the likely cause of these problems, how they can be avoided and what are the appropriate actions to take. Please copy this page and staple your two other examples into this workbook.

What was the quality problem?

How do you think it was caused? How often does it happen?

How is the non-conforming fish/shellfish dealt with?

Who is responsible for taking a decision to act?

How can the problem be avoided in the future?

**What documents are completed to record the problem?**

**How is any waste produced disposed of?**

## RECORDING, REPORTING AND COMMUNICATING

Recording, reporting and communicating are essential activities that take place every day while we are at work. They probably take place every hour of our working day, so just what are we recording, reporting and communicating about?

Here are a few of our ideas on general issues.

- Product, processing or packaging specifications;
  - You may be given a written report on a new process specification.
- Targets, schedules or deadlines;
  - You may verbally communicate to your supervisor that a scheduled task has been completed.
- Results, scheduled milestones, routine outcomes;
  - You may record the completion of each check of the metal detector.
- Health and Safety or Food safety issues;
  - This could include you reporting problems to your supervisor, or receiving updates on changes to policy.
- Impending operational problems;
  - Verbal reports on what might go wrong.
- On-going operational problems;
  - Usually verbal reports on whatisbeing done to fix the problem.
- Task Handovers;
  - Informing those taking over from you at the end of your shift.

These are pretty general. Can you list below three different examples of a communication, a report and a record from a typical working day during intake operations?

By way of a definition:

A report is usually one way – you report to someone, or they report to you.
Communications are usually two way – information is exchanged and may be discussed.
Records – a permanent or semi-permanent record of an outcome – almost always written.

| | |
|---|---|
| **Examples of Records made** | |
| | |
| | |
| **Reports – verbal or written** | |
| | |
| | |
| **Communications – what were they about?** | |
| | |
| | |

THE IMPORTANCE OF COMMUNICATION AND REPORTING


What do you think may happen if communications and reporting were absent, delayed or inaccurate?

Think about this for a moment or two before looking at our list.

Perhaps even make your own list to compare to ours.

Communications and reports that are delayed, inaccurate, incomplete or absent may lead to:

- Misunderstandings and confusion;
- Poor working relationships between colleagues and team members;
- Drop in H&S or food safety performance;
- Production problems that may lead to increased waste or increased costs;
- Damage to equipment or machinery;
- Quality losses and perhaps even product recalls;
- Loss of sales / customers due to poor quality, out of specification products etc.

When communications and reports are on time, accurate and fit for purpose, what may be the results?

- A more efficient, effective and pleasant(er) workplace.

EFFECTIVE COMMUNICATION

How is this achieved?

1. Providing information:

- Find somewhere appropriate to communicate – where the noise levels are suitable;
- Be precise and stick to the points;
- Use notes if appropriate;
- Maintain appropriate eye contact;
- Use polite gestures;
- Pay attention to the recipient's body language;
    a. Are they showing an interest?
    b. Have you 'lost them'?
    c. Are they taking notes?
- Ask occasional questions to check their understanding of the messages.

**2.** Receiving Information:

- Listen carefully;
- Indentify the important points;
- Take notes if appropriate;
- Ask questions to confirm your understanding;
    a. Use open questions or paraphrase what is being said;
    b. Avoid closed questions unless you really want a Yes or No as the reply;

- Check all important information with the information provider;
- Show you are paying attention by:
    a. The way you stand;
    b. Making appropriate eye contact;
    c. Asking the right questions.

## EFFECTIVE RECORDING

The main purpose of records are to provide:

- Evidence of what happened during the work period;
    - evidence that certain steps were taken;
    - evidence of any problems, or the absence of problems;
    - a record of key data such as temperatures, quantities, batch numbers etc.
- Confirmation that the people tasked with collecting and writing down data actually did so – thatis why you have to sign and date forms;
- Information for:
    - financial analysis;
    - problem solving and fault diagnosis;
    - traceability.

Many of the records we keep are routine, with the same data recorded batch after batch, day after day. The very routine nature of recording may make you assume itis not important and it doesn't really matter. IT DOES!

Itis important to the customer, your bosses and you.

A wise woman once said: "if it's not written down, it didn't happen." We can take that to mean, if you keep careful, accurate and honest records of what you do, as required by your employer, then should a problem arise they will be your best defence, and that of your bosses as well.

This only works though if you write down what actually happens, not what you think should have happened.

So:

- Write down the actual temperature of the delivery, the one you actually measured;
- Write down the actual time the check weigher was tested, not the time it was supposed to have been tested;
- And please, don't fill in records in advance.

Recording what has happened is an important part of any seafood processing or handling operation. Almost everything you or your colleagues do will result in a record somewhere in the company.

Records and the accurate recording of data are essential if the business is to survive and prosper and your job is to be secure. We need to record all kinds of information during our working day. What kind of records do you need to complete during a normal intake operation?

| Document name | Describe its purpose |
|---|---|
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LIMITS ON AUTHORITY

We all have limits on our authority, even the Managing Director. Usually these limits are tested when something goes wrong. Do you know your limits? What you can and cannot do?

What do you do if there is something wrong with the delivery? Describe the limit of your authority in case of a problem.

What do you think are the possible problems that may be caused if you do not stay within the limits of your authority?

List them here and then talk to your supervisor to see if you have listed everything.

As you become more experienced in your job, will the limits of your authority increase? Yes / No

If yes, how will they change?

**Section 5:** Summary, review of key points, additional resources.

This Learner Workbook seeks to introduce the main learning points required to carry out fish and shellfish intake operations effectively. It cannot cover everything as much of what you need to know is specific to your company.

I hope that we have demonstrated that the intake operation is a vital step in ensuring a safe quality product is produced for the consumer.

The intake role is one that starts with the establishment of a series of specifications that provide detail on what is, and what is not acceptable, as raw material.

This intake specification is used to define a process of sampling and testing that identifies what raw materials conform to the specification and what do not.

Through the careful and consistent application of these sampling and testing procedures, those of you responsible for the Intake Process can ensure that conforming deliveries make their way through to the next stage and non-conforming deliveries are identified and dealt with accordingly.

**Key Points**

Follow the established procedures carefully;
Sample and test consistently;
Work hygienically and cleanly;
Maintain temperature and storage conditions during intake;
Work effectively, efficiently and quickly.

## ADDITIONAL RESOURCES

INTAKE RELATED

1. Fish and Shellfish Intake – an in-company training programme for fish and shellfish processors.

2. Fish Quality Assessment – taught courses available from Seafish and other Seafood Training Academy partners.

3. *Seafood and Eat It* – a 6 DVD masterclass on fish and shellfish identification (disc 1) and quality assessment (disc 6).

GENERAL

1. Food Safety training courses from level 1 to level 3:
    a. Available in various languages;
    b. Available as taught courses, open learning programmes and by eLearning[4];
    c. CIEH and REHIS approved.

2. Health and Safety training courses:
    a. Level 1 taught course;
    b. Level 2 as a taught course or open learning module;
    c. CIEH and REHIS approved.

For information on all of these training resources and others, contact Seafish:

Seafish Training
Sea Fish Industry Authority
Humber Seafood Institute
Europarc
Grimsby
DN37 9TZ

Tel 01472 252300
Email training @seafish.co.uk

See also: www.seafish.org and www.seafoodacademy.org

[4] A free to study, level 2 course is available at www.seafoodacademy.org

**For up to date information on resources please visit the Library on the Seafood Training Academy website www.seafoodacademy.org and download the Library Guide for FDQ Learner Workbooks, where you will find links to the above documents and much more.**