

How to Shuck Bivalves by Hand

Learner
Workbook

Title:	Understand how to shuck bivalves by hand	
Level:	2	
Credit value:	3	
Learning outcomes	Assessment criteria	
<i>The learner will understand:</i>	<i>The learner can:</i>	
1. Know how to prepare to shuck bivalves by hand	1.1 List the personal protective equipment needed when shucking bivalves (Section 1, Page 10) 1.2 List the tools and equipment needed to shuck bivalves (S1, P11) 1.3 State how to obtain and interpret process and quality specifications for shucking bivalves by hand (S2, P25) 1.4 State how to identify different bivalve species (S1, P7) 1.5 Describe how to prepare a workstation for shucking bivalves. (S1, P11)	
2. Know how to shuck bivalves by hand	2.1 Describe how to shuck bivalves to meet a product specification (S2, P17) 2.2 Describe how to assess the quality of bivalves and bivalve meats (S1, P14) 2.3 List common quality problems and causes associated with bivalve shucking (S2, P22) 2.4 State the importance of removing all unwanted body parts from bivalves (S2, P15 and S3 P27) 2.5 Describe how to deal with bivalves and bivalve meats that are not fit	

	<p>for use (S2, P22)</p> <p>2.6 State what action to take when the process specification is not met (S2, P22)</p> <p>2.7 Describe product control and traceability procedures to follow when shucking bivalves (S2, P25)</p> <p>2.8 State company procedures necessary to meet legal and regulatory requirements when shucking bivalves. (S2, P20)</p>
<p>3. Know how to maintain equipment and a workstation to shuck bivalves</p>	<p>3.1 Describe how to sharpen, maintain and store knives (S3, P28)</p> <p>3.2 Describe how to maintain workstations in a condition suitable for shucking (S3, P27)</p> <p>3.3 State how to dispose of waste following company procedures. (S2, P19)</p>
<p>4. Know how to finish shucking operations</p>	<p>4.1 State the limits of own authority and competence (S4, P34)</p> <p>4.2 Describe the importance of working within the limits of own authority and competence(S4, P34)</p> <p>4.3 Describe how to carry out the recording, reporting and communication needed when shucking bivalves (S4, P29)</p> <p>4.4 State the importance of recording, reporting and communicating correctly when shucking bivalves. (S4, P30)</p>

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 has published an in-company coaching guide and training DVD which illustrates some aspects of the bivalve shucking operation for scallops (processing, retail and catering) and oysters (retail). There is more information on resources at the end of this workbook

.....Good Luck!

Lee Cooper
Seafish

All the images used in this Learner Workbook have been sourced by Seafish, who is the default copyright holder.

Unit Details

Unit Number: FP.112K

Unit Qualification Number:

Title: Understand How to Shuck Bivalves by Hand

Level: 2

Credit Value: 3

Unit Aims

This unit supports workforce development for those who shuck bivalves by hand, according to job role, in a processing or related business. 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.

This unit can be applied to shucking operations in processing, retail and catering operations

Contents

Section 1: Introduction, types of bivalves and equipment, essentials of food safety.

Section 2: Bivalve shucking and trimming, different methods, waste minimisation, common problems, quality aspects, labelling and traceability.

Section 3: Clean as you go, avoiding cross contamination, keeping tools sharp, post shucking handling.

Section 4: Recording, reporting and communications.

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

SECTION ONE:

INTRODUCTION

Shucking bivalves by hand in the UK is carried out by a small number of processing companies that shuck scallops, and a vast number of fishmongers, chefs and catering assistants who will shuck scallops, oysters, razor clams and other bivalves.

Bivalves are filter-feeding bivalve molluscs that live on the seabed on sand, gravel, mud or rocky substrates. Some bivalves are permanently or semi-permanently attached to the substrate (e.g. mussels), while others (scallops) move more freely.

Most bivalves are very low in saturated fat. They are a good source of Magnesium and Potassium, and a very good source of Protein, Vitamin B12, Phosphorus and Selenium.

Because bivalves are filter feeders they are affected by the quality of the water in which they grow. Waters with high levels of organic content can promote rapid growth, but may also present significant health risks if that organic content is made up of dangerous bacteria or toxin produced by plankton.

There are strict guidelines and regulations that control the harvesting and handling of live bivalves in the UK.

Inshore shellfish harvesting areas are classified A to C by the level of risk posed by any contamination that may be expected to occur. Prohibited Areas are areas where bivalves may not be harvested for human consumption.

Scallops harvested from open ocean and unclassified harvesting areas are considered to be wild and there are fewer restrictions that apply.

Many bivalves are harvested from Class B waters and are purified before being sold for consumption, and even some Class A water bivalves are treated in this way even though it is not essential.

Because of our stringent regulations and clear guidance on handling, the UK experiences a low number of food poisoning incidents related to the consumption of bivalves.

TYPES OF BIVALVES (Ref: 1.4)

There are a number of ways in which different species of bivalves can be grouped, for example:

- **Native and non-native** – e.g. native oysters or Pacific oysters;
- **Wild and cultivated** – e.g. mussels can be harvested from the wild, or from beds that are ‘managed’ or from suspended ropes;
- **Eaten raw or eaten cooked** – e.g. oysters are typically eaten raw, while mussels are eaten cooked.
- **Depurated or not** – e.g. oysters from class A waters, scallops harvested in the wild are not depurated. Oysters and mussels from Class B waters must be depurated.

The type of bivalve will have an impact on how it is shucked. Shucking techniques vary from species to species, and in the case of some cultivated species there are differences between cultivation methods that may impact on hand shucking.

Let’s start at the beginning.

What are Bivalves?

Bivalves are shellfish with two shells joined by a hinge, examples include oysters and mussels. Other shellfish such as the gastropods (members of the snail family) have only one shell, examples include limpets and whelks.



A selection of five types of clams, pacific oysters and mussels.

For more information go to www.seafoodacademy.org/shellfish-molluscs.html

Mussels

Mussels that are cultivated on suspended ropes don't touch the seabed and pick up grit and barnacles. Their bluish-black shells are thinner, as they are grown in sheltered waters and the shells don't need to develop tough shells to survive exposure and extreme abrasion.

Mussels grown on the seabed have thicker shells.

The meat content of rope grown mussels is higher as they are not exposed at low tides and so constantly feed. Less of their energy goes into shell production.

Rope grown mussels are available year round although they are not at their best in the summer months. Dredged mussels can be much cheaper, but need more cleaning to remove the sand and grit. Dredging runs from August through to May. The myth of only eating mussels when there is an 'R' in the month is incorrect.

Mussels are not usually hand shucked commercially but sold shell on.

Oysters

There are three main varieties available in the UK– Native, Pacific (or Rock oysters), and Portuguese. The Native oyster (available from September to April) is considered the best, but takes twice as long to grow, making it more expensive. Pacific oysters are available year round.

All oysters should feel heavy for their size and be kept with the round 'cupped' part of the shell facing downwards to retain the moisture.



Native oysters

Despite their modern image as a luxury food, oysters used to be a cheap working class food, and used in a traditional British beef and oyster pie. Oyster shells are strong and tough to open and are usually shucked with an oyster knife.

Scallops

The attractive fan-shaped shells contain translucent off-white meat wrapped with a bright orange roe or coral, which have a different taste and texture. The membrane, grey-brown frill and black thread of intestine are all discarded. Queen scallops have approximately 7cm wide shells (both rounded), They can be sold either in the shell or as



shelled meat – with or without the roe.

King scallops have approximately 15cm wide shells (one rounded, one flat)

The easiest way of harvesting scallops is through dredging, but there is also a strong market for premium quality diver-caught King scallops.

Most scallops are hand shucked and sold as individual ‘meats’.

Clams

There are several varieties of clam; all are round and stone-like except the Razor clam, so called because it resembles a cut-throat razor.



Amande, Hard-shell, Venus and Razor clams are the most common varieties.

Palourdes (or Carpet Shell) are considered the finest clams and command a much higher price. Clams are usually sold in the shell.

Razor clams in the shell should be banded to keep the shells together and preserve the live shellfish for longer.

EQUIPMENT

As scallop shucking is the most common form of commercial bivalve hand shucking we will focus on that type of operation, and include any variations required by the shucking of other bivalves later.

Equipment is made up of personal protective equipment (PPE), your workstation, and the various tools used in hand shucking.

Personal Protective Equipment (Ref: 1.1)

Because the shucking operation requires you to handle a sharp knife and sharp shells you will need some form of cut resistant gloves. You may also wish to wear some form of waterproof glove and an apron to protect you from prolonged exposure to water.

If it is cold then your clothing should be suitably warm, and of course your footwear must be appropriate to a wet environment and potentially slippery floor.

The hat, hairnet, clean coat, plastic arm covers, beard snood etc are not PPE as they are not there to protect you from injury during shucking. They are there to protect the food from contamination by you.

PPE must be fit for purpose and supplied free of charge by your employer. You have a responsibility to wear it, look after it and when it needs replacing to bring this to the attention of your employer.

While shucking scallops it is perfectly possible to do it effectively using a blunt knife such as a dinner knife, and many shuckers do it this way as it is much safer.

Oysters have much thicker shells than scallops, mussels or many clams and are harder to force open. The short bladed oyster knife is designed to open this type of shell. This type of knife is available with or without a guard.



Workstation (Ref: 1.5)

Workstations for hand shucking usually consist of simple stainless steel benches at a convenient height.

In the case of scallop shucking the table/bench needs to be large enough to accommodate a bag full of bivalves emptied on to it, with space for tubs for shucked scallop meats, the discarded viscera and somewhere for the shells.

It is important to keep the meats and the waste material separate. Why this is important is explained later under food safety.



Some scallop operations use two people to shuck. The first person snaps open the shells using a strong blunt knife, while the second person removes the scallop meat etc from the half shell. This arrangement requires more space, but throughput is usually higher.

As well as the shucking station you will need facilities to rinse, inspect and finally thoroughly wash the scallops before they are packed for dispatch or ready for cooking.

The inspection and washing areas must be physically separate from the shucking areas to avoid cross-contamination – this is essential, and may include different staff carrying out this operation in a scallop processor.

Knives and other tools (Ref: 1.2)

The knives used to shuck scallops come in all sorts and varieties. The one type of knife we would suggest you **DO NOT USE** is a traditional filleting knife. With a sharp point, this type of knife is just too dangerous to use and its sharp blade just isn't necessary to shuck scallops well.

Chefs, fishmongers and many processors use a round ended dinner knife to partially open the shells and then scrape the adductor muscle away from one shell.

A variety of tools are used to remove the meat and viscera from the other shell. Spoons, blunt knives and thin bladed knives with a curve have all been used.

ACTIVITY

What type of knives are used in your company for shucking?

Discuss with your supervisor why this type of knife is used and summarise the reasons here.

Have we missed out any PPE, equipment and tools you use? Please list them here.

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

ESSENTIALS OF FOOD SAFETY

Food safety is an important part of everything we do in the seafood industry, but it is particularly important when shucking bivalves.

General Food Safety

Most bivalve molluscs are filter feeders and they filter their food out of seawater. Unfortunately they can also filter unwanted and even dangerous substances from seawater, which is why they need to be treated carefully to ensure the safety of the consumer.

Are they alive? – most bivalves sold in the UK are sold as live animals and consumers are told to reject any that are not. The usual test is called the ‘percussive test’. Take a live bivalve and if the shell is closed it is probably alive. If the shell is open then tap it on a hard surface. If the bivalve is still alive it should attempt to close the shells and will pass the test.

Some shells which are closed may be ‘duds’. A dud shell is one where the bivalve has died in the sea. The shell is empty even though the shell is closed. The meat disintegrates and the shell is effectively empty. ‘Duds’ are usually spotted by the percussive test as they make an odd dull sound when tapped onto a hard surface.

Some closed empty shells can fill with mud.

Oysters and cockles are more prone to being ‘duds’ as their shells are more likely to remain closed if they die, than, for example, a mussel shell.

An exception to this ‘live bivalve only’ rule are scallops. It is perfectly acceptable to sell dead¹ shucked whole scallops provided they have been carefully looked after and kept chilled or iced. In this way they are similar to fish, after all it is unusual to buy live fish. But, as with fish, if the guts are left in they will deteriorate much quicker than if they had been gutted or shucked.

During shucking it is important to avoid cross contamination. Make sure that the waste materials (shells, viscera, inedible tissues) are kept separate from the edible meats.

¹ You can sell any bivalve as dead for uses such as in pickled cockle meats. But if you sell live bivalves then they must all be alive and ones that die must be discarded.

Once the bivalve has been shucked it should be kept chilled or iced and handled the same as any other highly perishable seafood.

The quality of bivalves (Ref: 2.2)

Live bivalves may be safe to eat, but simply being alive does not mean they are of good quality. Conversely dead scallops doesn't necessarily mean they are unsafe or poor quality.

Once bivalves have been removed from the sea they are starting to run out of time as they will gradually starve. If they dry out, are abused through rough handling or adverse temperature they will die very quickly.

Once shucked the meats are highly perishable and quality will be lost rapidly unless they are cared for.

It is possible to assess the quality of bivalves. Good quality bivalves will have the following characteristics:

- If alive, their shells will be tightly closed or will close quickly when tapped;
- The shell contents will retain moisture and will have a pleasant smell of the sea, seaweed etc;
- When cooked, the flesh will have a texture and flavour characteristic of the species with no off flavours.

In a processing establishment you will often have to rely on others who have been specifically trained to assess the quality of the raw material.

ACTIVITY

Discuss with your supervisor how bivalve quality is assessed and assured in your company and record the results here.

Bivalve Food Safety

We have previously mentioned that most UK bivalves are harvested from waters that are classified shellfish harvesting areas, and that some bivalves must be purified in Depuration and Dispatch Centres to ensure that food safety is maintained.

All bivalves will come with a registration document² that contains important information about the harvesting area and subsequent handling of the bivalves. This is a critical document that is a part of your company's HACCP Plan and Traceability System. If you have a role in filling in documents during shucking then those documents will also be part of this HACCP Plan, and must be carefully and accurately completed.

It is not the purpose of this Learner Workbook to explain how to complete the documentation. You should have been shown how to do this by your employer. What we can say is that any documents you fill in or records you add to are essential for:

- Traceability – a legal requirement;
- Part of the HACCP Plan – a legal requirement;
- Tracking raw materials and finished product – essential if the company is to make a profit.

Record keeping and communications between you and your supervisor and your colleagues are essential for business success.

There's much more on this topic in Section 4.

Scallop Food Safety (Ref: 2.4)

The safety of most species of bivalves is ensured by:

- The classification of shellfish harvesting waters;
- Bivalve depuration as laid down in law;
- Good general handling and processing practices;
- Following the HACCP Plan.

² Purification and Dispatch Centres get registration documents from fishermen and replace these with Health Marks when they dispatch bivalves to retailers etc.

Scallops are a little different. Like other bivalves they filter feed and can concentrate unwanted substances from seawater in their bodies.

These substances can cause food poisoning, but with care and attention they are easily controlled. More information is available in a Seafish *Scallop Handling and Shucking* Practices training guide (inc. DVD), so we will only cover this topic briefly here.

The poisons or toxins are produced by naturally occurring marine algae.

They can cause:

Paralytic Shellfish Poisoning (PSP)
Amnesic Shellfish Poisoning (ASP)
Diuretic Shellfish Poisoning (DSP)

Seafish have fact sheets for scallop processors and scallop divers, chefs etc on these issues (see Resources at the end of this Workbook for details).

The bulk of any toxins can be found in the gut, viscera and other waste material removed by shucking.

Effective control of these risks consists of:

- Careful and effective shucking;
- Separation of edible meats from waste tissues to avoid re-contamination;
- Effective trimming of any remaining unwanted tissue;
- Effective washing to flush out toxin from edible tissue;
 - FSA in Scotland require a 10 minute wash in water (with occasional agitation) to remove any PSP toxin.

These essential and effective steps are not just the responsibility of management, but of the operatives who shuck, rinse, inspect and trim and finally wash the scallops prior to packing for dispatch.

Raw Material and End Product testing are standard management controls that should be in place, but they are not a substitute for a trained, motivated and competent workforce.

SECTION TWO:

BIVALVE SHUCKING METHODS (Ref:2.1)

Oysters

As a general rule, when oysters are out of the water they should be stored, packed, transported and displayed with the rounded shell down and the flat shell up.

This is to ensure that the liquid (seawater) within the shell doesn't leak out when the shell opens. The liquid keeps the flesh moist and helps the oyster stay alive longer.

The shell needs to open for the oyster to breathe, but should close when picked up to be shucked.

Using an oyster knife (with or without a guard).

1. Place a damp cloth on a firm surface.
2. Place the oyster on a cloth and hold down with your hand with the hinge towards the hand with the knife.
3. Take the oyster knife and place it into the gap between the shells, to one side of the hinge and wiggle it until the knife penetrates between the two shells.
4. Firmly rotate the knife to force open the shells and break the hinge.
5. With the knife blade scrape across the inside of the flat shell so that it comes free.
6. The oyster is still connected by the adductor muscle to the bottom shell. Scrape down the inside of the bottom shell to cut the muscle without damaging the other oyster tissue.
7. For presentation purposes, we turn the oyster flesh over so it looks absolutely perfect.

This general method applies to both Portuguese and Native oysters although Native oysters are generally considered harder to shuck.

Mussels

An oyster knife is usually too thick to shuck mussels with, so use a knife with a short, thinner blade.

1. Take the mussel in one hand and with your thumbs press the shells sideways until a small gap appears between the shells.
2. Insert the knife and scrape along the inside of one shell to cut the adductor muscle. The mussel shells can now be prised open with no damage to the flesh.
3. With the knife cut away the flesh clinging to the shell rim and then scrape the adductor muscle away from the other shell.

Scallops

Scallops can be sold dead as long as they are kept chilled or iced. Shucking can be carried out using a blunt ended knife.

Version 1: Suitable for fishmongers chefs and others shucking smaller quantities of scallops.

1. Hold the scallop round shell down in the palm of your hand with the hinge away from the hand with the knife.
2. If alive, the shells will be tightly closed. Insert the knife into the scallop and twist gently to force the shells a little apart. Grip tightly with your fingers to stop the shell closing. The knife can now move freely inside the scallop.
3. Scrape along the inside of the flat shell to cut away the adductor muscle where it joins the shell. Open out the shell and twist off the flat shell.
4. Scrape along the inside of the rounded shell to free the adductor muscle from the shell. Place the meat and viscera on a cutting board.
5. Hold the scallop meat (adductor muscle and roe) gently but firmly and pull off as much of the inedible viscera as possible. Using a sharp knife, cut away the rest of the viscera leaving only the edible tissues.
6. Rinse, trim and wash according to guidelines – see later.

Version 2: Typical method for scallop processors.

Person 1.

1. Place the scallop flat shell down on the table. Insert a strong blunt knife between the shells and lever apart until the adductor muscle breaks away from the shell.
2. Remove the flat shell and pass the round shell plus scallop meat and viscera to the next person in the chain.

Person 2.

1. Take the half-shell scallop in the palm of your hand.
2. With a sharp, curved-bladed knife cut the scallop meat out of the shell, separating the edible and non-edible tissues as you go.
3. Place the edible meat in a container ready for rinsing, trimming and washing – see later.

Version 2 is a highly skilled activity and the simple description here, while accurate, does little to explain exactly how it is done.

Seafish have a range of short video sequences that show several different ways in which scallops can be shucked by processors, fishmongers and chefs.

WASTE (Ref: 3.3)

The management of waste from shucking operations is important as it can contribute to the overall costs of the process.

What kinds of waste should we consider?

Waste materials – waste offal and shells which must be disposed of.

Waste water – Shucking operations and cleaning produce volumes of waste water. Systems that separate water from the larger pieces of flesh and keep them out of the drain will reduce the effluent charges. Simple measures such as ‘sweeping’ up waste from the floor before washing down will help.

There are problems with how waste flesh (offal) from shellfish shucking operations must be disposed of. Shell waste from shucking operations has its own unique disposal problems. Discuss these issues with you supervisor or manager.

At the end of the process what do you do to dispose of waste and why is it important?

What do you do?	Why is it important
<p>'Sweep' up solid waste from the floor, before washing down.</p> <p>Separate waste shell from waste tissue/offal.</p>	<hr/>

If the above table doesn't accurately describe how you dispose of waste from bivalve shucking, please describe the procedure below.

COMMON PROBLEMS

There are few problems associated with bivalve shucking once the basic techniques have been mastered.

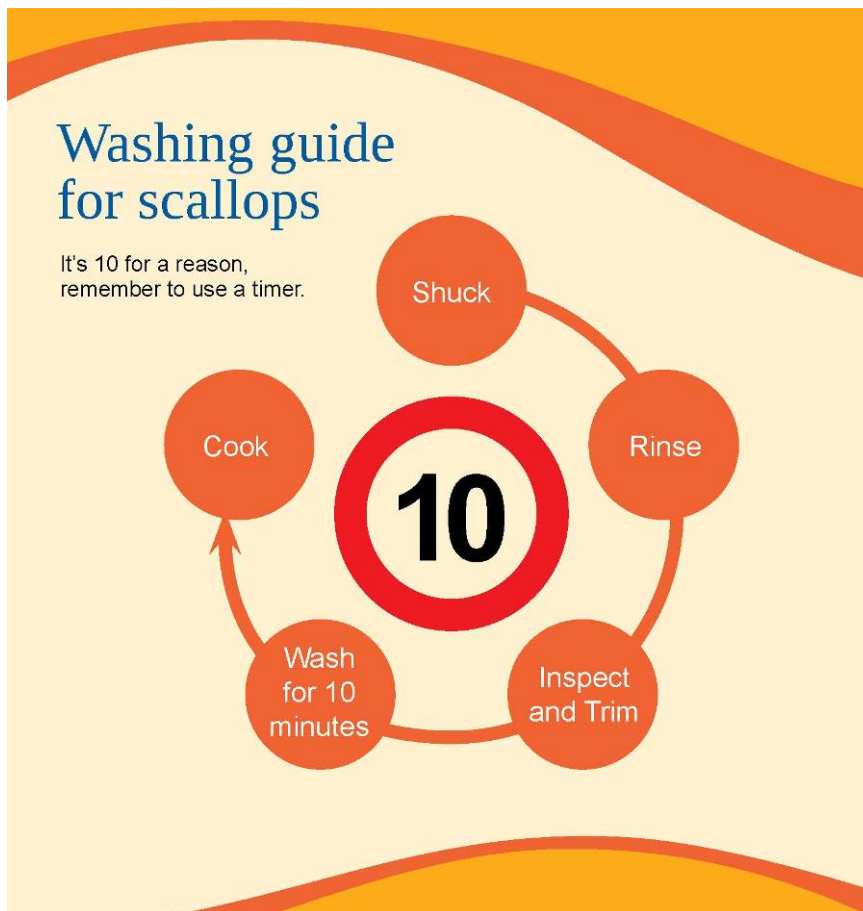
Bits of broken shell in with the meats can cause problems.

H&S is an issue as some considerable force may occasionally be required to force the shells apart. This is why the oyster knife has a short blade and may have a knuckle guard. It is why we recommend only using a blunt knife to scrape away the adductor muscle/shell connection to free the meat from the shell.

There is one food safety issue that all scallop shuckers should be aware of, the problem is with biotoxins and effective shucking is often the solution.

Biotoxins have the potential to cause harm if the scallops are contaminated.

But even contaminated scallops can be safe to eat if they have been:



- Shucked correctly;
- Rinsed;
- Inspected and trimmed to remove all non edible tissue;
- Rinsed in running water for at least 10 mins.

ACTIVITY (Ref:2.8)

Seafish have a training DVD, leaflet and factsheet on scallop shucking and safety. The materials were developed at the request of the UK Food Standards Agency and are available to all scallop shucking businesses in the UK. If your company doesn't have a copy, Email training@seafish.co.uk now.

Insert here the dates these actions were completed:

Seafish training pack started on ___/___/___

Seafish training pack completed by ___/___/___

QUALITY PROBLEMS (Ref: 2.3, 2.5, 2.6)

There are three main quality issues associated with pre-shucked bivalves.

Excessive water – The practice of soaking scallops in water (possibly containing tripolyphosphate) to make them appear plumper and to provide more saleable weight, is a quality problem and has no place in a business producing high quality scallops.

This should not be confused with the impact of prolonged (10 mins or more) washing required to flush out any possible biotoxin residue from the scallop roe. See Seafish guidance (above) on this topic.

The key difference between soaking and washing is that washing uses running water for 10 mins, where as soaking does not.

Solution – do not soak scallops. If water take-up during appropriate washing seems excessive then allow scallops to rest, drip and firm up in a chilled environment prior to packing.

Poor organoleptic quality – bivalves that are out of condition, have been kept out of water too long, or have been too badly stressed during post harvest handling and processing may not have the texture and taste normally associated with good quality product.

The shucking operative is most likely to become aware of this type of problem through the smell of dying bivalves or the numbers of dead bivalves during shucking.

Solution – reject bivalves if appropriate and investigate the cause of the problem.

Badly shucked bivalves – poor yields, damaged flesh (e.g. broken scallop gonads) are often the result of poor shucking techniques, but occasionally can be caused by poor quality animals.

Solution – retrain staff, reduce throughput to a manageable level.

Poorly trimmed – of importance in scallop processing. Inspection and trimming is essential as all of the inedible tissues must be removed during processing. The inedible tissues cannot be eaten not because they are unpleasant to eat, BUT because they are unsafe to eat.

Scallops that are poorly trimmed are also likely to have other quality/safety problems.

Solution – return scallops for further inspection, trimming and washing, or reject scallop. Investigate and correct the failure in production.

Grit - Dredged scallops are most likely to contain grit. During shucking and effective washing all grit should be removed. The presence of grit in scallops ready for packing is a sign of a failure elsewhere in the production process.

Solution - return scallops for further inspection, trimming and washing, or reject scallop. Investigate and correct the failure in production.

Poor Washing - poorly washed scallops may be unsafe to eat and are symptoms of general failures in quality assurance and a failure in the HACCP Plan. Poorly washed scallops are a symptom of serious failings and must be investigated.

Solution - return scallops for further inspection, trimming and washing, or reject scallop. Investigate and correct the failure in production.



Here is a scallop that was spotted on the seafood counter of a UK supermarket.

This scallop has been correctly shucked and trimmed.

Washing was completely inadequate and black gut material is still evident.

And, the piece of grit on top of the white meat was found

underneath the scallop along with grains of sand. Clearly, this is the result of very poor quality assurance and totally ineffective washing.

LABELLING AND TRACEABILITY (Ref:2.7)

Batching and traceability

Batches are an important factor in traceability. How does your company define a batch for shucking purposes? Ask your supervisor about this and record the results of your discussion below.

A batch of bivalves for shucking is defined as

.....

.....

A batch of shucked bivalves is defined as

.....

Product Control (Ref 2.7, 1.3)

How do you control product before, during and after sucking operations?

This is usually done through a process of movement or registration documents that come with the raw materials, as well as various documents produced internally. The internal documents may be standard operating procedures, records etc.

Please list all the documents that are needed to ensure that shucking is carried out effectively, and batches and traceability are maintained.

Document name	Describe its purpose

What other company procedures do you have to follow to make sure you meet your responsibilities?

This is another opportunity to discuss this with your Supervisor.

We have created a list of typical Standard Operating Procedures (SOPs) for a shellfish company. How many of these are used by your company and how many apply to you? How many do you understand?

Tick the boxes that apply.

Have your supervisor check and discuss any procedures that apply to you, that you don't fully understand.

Procedure	Used by Company	Apply to me	Understood by me
Delivery Vehicle Inspection			
Raw Material Inspection - General Condition			
Raw Material Inspection - Labelling (Traceability)			
Chill/Cold Storage Temperature control			
Chill/Cold Storage Segregation			
Handling - Packing			
Hand washing			
Dress code			
Jewellery controls			
Metal Detection			
Waste Removal & Control			
Chemical control			
Cleaning Schedules			
Hygiene Monitoring			
Packaging condition			
Product temperature			
Despatch Vehicle control			
HACCP			
Pre-employment			
Maintenance (Equipment)			
Return to Work (Sickness Absence)			
Glass and hard plastics Control			
Foreign Body Control			
Weighing Control			
Product Recall and Crisis Management			
Pest Control			
Quarantine Stock Control			
Cleaning Schedules			
Production Temperature Controls			
Dilution rates (Cleaning Chemicals)			
Illness Reporting			
Cooling and Chilling Procedures			
Visitors / Contractors Questionnaire			
Scallop processing – product specification			

Have we missed any? List the five most important procedures here:

- 1.
- 2.
- 3.
- 4.
- 5.

SECTION THREE:

CLEAN AS YOU GO (Ref:3.2)

Clean as you go is critical in bivalve shucking as it can generate considerable waste that can contaminate the finished product.

Broken shell and grit can be a problem if they are carried through with the edible meat. With scallop shucking there is a particular issue around the contents of the gut, and 'clean as you go' is one of the best ways of avoiding contamination from gut contents.

AVOIDING CROSS CONTAMINATION (Ref: 2.4)

Cross contamination from the gut contents of scallops is the main food safety issue connected to the actual process of shucking.

The gut, black sac or hepatopancreas is where most of the biotoxins that occasionally occur in scallops will be found.



You can see the black sac at the bottom centre of this picture.

If this sac is punctured during shucking then the contents may cross contaminate the edible meat and gonad (centre of image) of the scallop.

Keeping waste and edible meat separate and frequent 'clean as you go' are effective means of helping to avoid cross contamination. A quick rinse to remove any surface contamination between shucking and inspection is beneficial too.

KEEPING TOOLS SHARP (Ref: 3.1)

Usually we would expect you to be able to keep your knives nice and sharp. Fish filleting depends on having knives with a keen cutting edge.

With most shucking operations the knives need to be blunt, and sharp knives are almost a liability.

The only sharp knives needed by scallop shuckers are the curved knives used to scoop the scallop out of the bottom shell and cut away the inedible tissues.

Blunt knives are equally effective for most parts of the scallop shucking operation and are increasingly common in processing companies.

A sharp knife may be used by those that inspect the rinsed scallops to trim off any waste tissue before the scallops are thoroughly washed.

Seafish have a short training video on the care and maintenance of tools, including the sharpening of knives.

Whether blunt or sharp, the important thing is that the knife is used as it is supposed to be, and it is fit for purpose.

POST SHUCKING HANDLING

Scallop meat, in particular the roe, should be handled carefully to ensure it is not damaged during the stages that come after shucking.

The product should be kept cool to avoid quality loss.

The workplace, food contact surfaces etc should be kept clean to avoid contamination and food safety risks.

SECTION 4:

RECORDING, REPORTING AND COMMUNICATING (Ref: 4.3, 4.4)

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 what's being 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?

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;
- Identify 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 – that's 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 it is not important and it doesn't really matter. IT DOES!

It is 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 chiller temperature, the one you actually measured;
- Write down the actual time the metal detector was tested, not the time it was supposed to have been tested:
- And please, do not 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 shucking operation?

Document name	Describe its purpose

LIMITS ON AUTHORITY (Ref: 4.1, 4.2)

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 equipment, services³, raw material or paperwork? 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.

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

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

If yes, how will they change?

³ For example, water at the correct temperature, electricity, adequate lighting, sufficient ice.

SECTION FIVE:

SUMMARY

In this Learner Workbook we have looked at the process of shucking bivalves and concentrated on the shucking of scallops as the main example.

From studying this workbook and discussing bivalve shucking with your supervisor and colleagues you will now be able to answer the key questions raised by Unit 112K, 'Understand how to shuck bivalves by hand'.

- List the personal protective equipment, tools and equipment needed to shuck bivalves needed when shucking bivalves.
 - Remember to distinguish between PPE to protect you, and clothing etc to protect the food from you.
- You will have obtained and interpreted process and quality specifications as part of Section 3.
- You should be able to identify different bivalve species. If not then access shellfish ID information via Seafish's training DVD or look at the various bivalve web pages on www.seafoodacademy.org
- The process of preparing a workstation for shucking bivalves and how to shuck bivalves to meet a product specification have been addressed in Sections 1 and 2.
- The assessment of the quality of bivalves and bivalve meats has been briefly touched on in Section 1. If you need a better understanding of quality assessment then there are a range of courses available from Seafish.
- Common quality problems and causes associated with bivalve shucking tend to be associated with poor handling, poor storage, ineffective shucking and inadequate washing.
- The importance of removing all unwanted body parts from bivalves and how to deal with bivalves and bivalve meats that are not fit for use have been thoroughly addressed. Additional information and training materials are available from Seafish.
- You will have had an opportunity to agree with your supervisor as to what action to take when the process specification is not met

- Product control and traceability procedures to follow when shucking bivalves vary from company to company. We have briefly covered generic examples towards the end of Section 2.
- The company procedures necessary to meet legal and regulatory requirements when shucking bivalves are something you should have discussed with your supervisor.
- Your understanding of how to sharpen, maintain and store knives should be based on in-company training and instruction. A simple knife sharpening video tutorial is available on the Seafood Academy website.
- How to maintain workstations in a condition suitable for shucking was covered in Section 3.
- Disposal of waste following company procedures is in Section 2.
- The limits of your own authority and competence, and the importance of working within set limits is part of Section 4.
- Recording, reporting and communication makes up a large part of Section 4

REVIEW OF KEY POINTS – for scallop shucking

1. Shuck correctly;
2. Rinse briefly;
3. Inspect and trim;
4. Wash for 10 mins with occasional agitation;
5. Inspect and pack.

ADDITIONAL RESOURCES

SHUCKING RELATED

1. Scallop shucking and handling practices – an in-company, text-based training pack for scallop processors.
2. Scallops for Chefs, and Scallops for Scallop Divers – two DVD based training programmes for chefs and harvesters. Contains a variety of material including several demonstrations of alternative shucking techniques.
3. *Seafood and Eat It* – a 6 DVD masterclass on fish and shellfish identification (disc 1), preparation (oyster shucking on disc 5) and quality assessment (disc 6).
4. Scallop fact sheets and responsible sourcing guide – a range of printed leaflets available free of charge from www.seafish.org.

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 eLearning⁴;
 - 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

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

DN37 9TZ

Tel 01472 252300

Email training @seafish.co.uk

See also: www.seafish.org and 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.