

End Product Testing (EPT)

Seafood is a good source of protein, and shellfish have been shown to have many [health benefits](#). Farmed UK shellfish are one of the most [sustainable forms of food for us to eat](#), with very low impacts and increasingly recognised benefits to the wider environment.

Foodborne risk and steps you need to take

As a Food Business Operator (FBO) you have a legal duty to ensure you are aware of potential food safety risks and that the food you place on the market is safe and fit for consumption. End Product Testing (EPT) ensures harvested shellfish are regularly tested for the presence of microbial contaminants and biotoxins. The frequency of testing and how sampling is undertaken should be based on risks such as:



- the status of the harvesting waters as regards known or suspected algal toxin blooms;
- site classification which is linked to sewage discharges and trends or the presence of *Escherichia coli* (*E.coli*) and norovirus (NoV); and
- changes in the purification (depuration) or handling process.

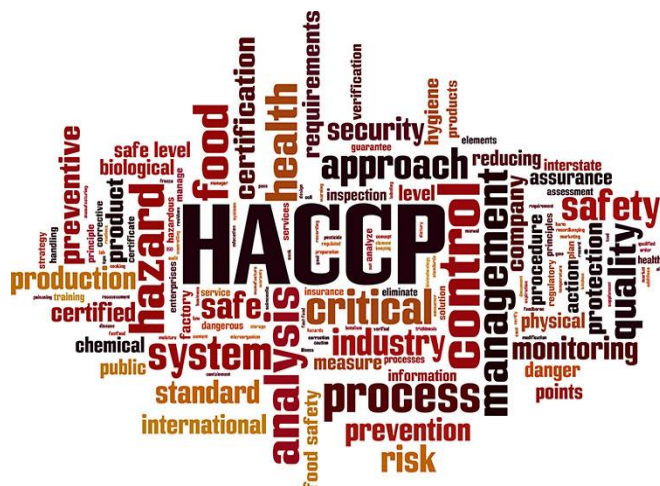
The frequency of sampling may be adapted to the nature and size of the food businesses, provided that the safety of the food will not be endangered. The FBO knows the history of the product better than anyone else and is therefore best

placed to make such decisions.

Risk assessment for EPT needs

Using Hazard Analysis Critical Control Point (HACCP) principles, a risk assessment should be undertaken which is then used to establish appropriate policies and procedures, including the ETP sampling plan. A FBO can either use:

- a system of testing and positive release, which involves holding the animals in a way that will ensure they cannot be contaminated whilst waiting for the lab results; or
- a system of process validation where testing over a period of time is used to give confidence on the safety of the process and the product produced. An FBO that has good HACCP-based procedures in place and can provide historical evidence of the effectiveness of these procedures will likely require less EPT and may not need to depend on positive release to ensure consumer safety.



Hazard Analysis Critical Control Point (© TCI Systems)

Further Seafish guidance on HACCP plans and bivalve purification is available online.

Product standards for live bivalves

1. Less than 230 colony forming units of *E.coli* in 100g of flesh and intra-valvular liquid.
2. 80% of samples of live bivalve molluscs from Class A waters must not exceed 230 *E.coli*/100g of flesh and intravalvular liquid. The remaining 20% of samples must not exceed 700 *E.coli*/100g of flesh and intravalvular liquid.
3. Must not contain *Salmonella* bacteria in 25g of flesh.
4. Be alive, fresh and in good condition.
5. Normal amounts of intra-valvular liquid at sale and adequate response to percussive tap.
6. Must taste fresh, no off-flavours and be free of detritus.
7. Must not contain marine biotoxins in excess of:
 - PSP (Paralytic Shellfish Poison): 800µg saxitoxin/kg
 - ASP (Amnesic Shellfish Poison): 20mg domoic acid/kg
 - DSP (Diarrheic Shellfish Poisoning): 160µm okadaic acid equivalents/kg
 - Yessotoxins: 3.75mg/kg
 - Azaspiracids: 160µg azaspiracid equivalents/kg

The official control monitoring of *E.coli*, biotoxins and phytoplankton trends provide an indication of when increased EPT might be required. EPT helps demonstrate compliance with legal obligations, can add value to the product and may provide additional control over when bivalves are harvested and sold.

Always remember - If there is a risk of shellfish becoming contaminated, you must take appropriate steps to ensure that any placed on the market are safe. Effective End Product Testing to ensure food safety is absolutely essential.

