Paralytic Shellfish Poisoning (PSP)

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.

What is Paralytic Shellfish Poisoning (PSP) and its symptoms?

PSP is an illness that can occur when eating seafood, usually bivalve molluscs, that contain biotoxins. Common symptoms include a tingling of the lips and tongue, progressing to tingling or numbness in the fingers and toes and then the loss of muscle control. In severe cases, PSP can lead to respiratory paralysis, an abnormal heart rhythm and death. The incidence of PSP is, however, extremely rare due to increased education and public health regulation. It is important to note that there has only ever been one case in the UK.

Alexandrium sp.
(© J. Rines)

PSP is caused by a heat stable neurotoxin called saxitoxin. Saxitoxin is one of the most potent natural toxins known to man. Saxitoxin is most often produced by the phytoplanktonic dinoflagellates of the genera *Alexandrium*. The biotoxin can accumulate in the bivalves whilst they feed. It is not removed by the depuration process or destroyed by cooking or other processing. It is, therefore, important to ensure that the animals destined for human consumption do not accumulate the biotoxin.

Paralytic Shellfish Poisoning and Shellfish

It is normal for biotoxin-producing algae to be present in our coastal waters. They are usually at very low concentrations and pose no concern for most people that eat moderate amounts of shellfish. However, when the quantities of algae increase in the marine environment, so too can biotoxin-producing species. The more of these algae the bivalves eat, the more saxitoxin they can accumulate.

Foodborne risk

As a Food Business Operator (FBO) you have a legal duty to ensure the food you place on the market is safe and this includes that it does not contain harmful biotoxins.

Through the official control monitoring, the presence of biotoxin-producing algae in the water is assessed and levels of biotoxin in bivalves is measured. This monitoring helps provide early warning of the possibility of biotoxin contamination. Saxitoxin must not exceed 800µg/kg flesh. When legal regulatory limits are exceeded, the affected areas will be closed, meaning shellfish cannot be harvested until the risk has passed.

End Product Testing (EPT) ensures harvested bivalves are regularly tested for the presence of biotoxins, and the official control monitoring results provide an indication of when increased EPT is required. This 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.**

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