

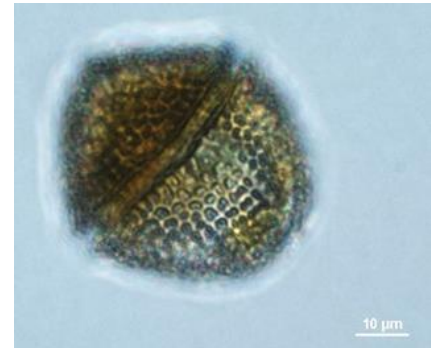
# Yessotoxin and Shellfish

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 Yessotoxin (YTX)

YTX is heat tolerant, lipophilic toxin first discovered in scallops. YTXs were initially associated with diarrhetic shellfish poisoning (DSP) because they are often simultaneously extracted with DSP toxins. However, YTXs are now considered separately because they do not cause diarrhea. There have been no reports of ill effects in humans attributable to YTX.

YTXs are produced by the phytoplanktonic dinoflagellates *Protoceratium reticulatum* and *Lingulodinium polyedrum*. These species cause red tides and may also be bioluminescent. 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.



*Protoceratium reticulatum* (© G. Hannach)



Bioluminescence caused by *Lingulodinium polyedrum* (© B. Jones)

## Yessotoxin 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 yessotoxin they can accumulate.

## Foodborne risk and steps you need to take

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. Yessotoxin must not exceed 3.75mg of yessotoxin equivalents/kg. 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.**