

Luminescent or Glowing Seafood

Although not often noticed, many seafoods, (including those commonly stored in our refrigerators), will actually appear to glow when held in complete darkness. Most reports of glowing seafood are from restaurants that have large refrigerated storage rooms with light switches, or from consumers seeking a late night snack in the dark.

What Is The Cause?

When seafood glows it is due to the presence of luminous bacteria. The bacteria *Photobacterium phosphoreum* is probably the most common cause of glowing seafood. Other marine bacteria including *Alteromonas hanedai*, *P. leiognathi*, *Vibrio fischeri*, *B. harveyi*, *V. logei*, and *V. splendidus* also cause glowing or luminescence when they grow on seafood products.

Luminous marine bacteria are common in the marine environment, and on the outer surfaces and in the intestines of marine animals. Some species of *Photobacterium* are also in specialized luminous organs of marine fish.

Most luminous marine bacteria are able to grow at normal refrigerator temperatures (i.e. 4°C). The bacteria *P. phosphoreum* and *V. logei* are even capable of growing near freezing temperatures.

Health Significance

Luminescent seafood suggests that the seafood was held for a time and at a temperature when these bacteria could grow. Since these temperatures include normal refrigeration temperature, it does not mean that the seafood is unsafe or low quality. These organisms are not considered a health concern since there has never been a report of illness from the consumption of luminous marine bacteria.

Controlling Factors

Not all seafood products will support the growth of these bacteria however. This is mainly due to the fact that these seafoods do not contain enough sodium or salt. Seafoods such as cooked crabmeat, cooked shrimp, and simulated seafood products made from surimi have salt added during processing. These products are the most common seafoods associated with luminescence.

A slower growth or reduction of the numbers of these marine bacteria can be obtained simply by refrigerating all seafoods products as close to 0°C (freezing temperature) as possible. Also, minimal growths will be achieved by purchasing fish that have fresh odour and appearance characteristics and by consuming refrigerated seafood products within a day or two.

*For further information
please contact your Fish
Safety Officer (604.707.2458)
or your local Health Authority*

