Causative phytoplankton species

Science, Biology

Dinoflagellates: the Causative Phytoplankton Species Dinoflagellates the Causative Phytoplankton Species Dinoflagellates group consists of a large group of flagellate protists, of which a larger percentage is marine planktons. They are also found in fresh water habitats. Their population is mainly influenced by temperature, salinity and depth of the water. They are the largest group of marine eukaryotic when compared to the diatoms. They often accumulate in shellfish or other fishes, which when ingested by human beings, results into diseases like paralytic shellfish poisoning, Diarrheic shellfish poisoning, Neurotoxic shellfish poisoning and Ciguatera. This paper describes the characteristics of Dinoflagellates (causative Phytoplankton Species), including the symptoms of diseases it causes, and the treatment methods available for those diseases.

Properties of the causative toxic

Dinoflagellate is an important group of microorganisms, and they play significant roles in the ecosystem they are found. For instance, primary production of coral reef ecosystem is promoted by symbiotic Dinoflagellates, and this process is referred to as coral bleaching (Tomás, 1996). In addition, red tides arise from the blooming of the planktonic Dinoflagellates. Dinoflagellates have thecal plates within their cell corticles. The thecal plates are fabricated biologically into various shapes, which are made of high cellulose. Due to the high transparent properties, thecal plates are composed of mechanical properties, which are similar to soft wood cell wall that performs the role of protecting cell covering (Tomás, 1996).

Symptoms of the disease

Dinaflagellates are protozoans, and their carrier agents, shellfish, are

poisonous to the human body: eating such shellfish causes numbness which spreads to the neck and face after five to thirty minutes of consumption. This causes difficulty in swallowing, incoherence or complete loss of speech, and within three to twelve hours after consumption, complete paralysis may occur, and this leads to instant death due to lack of ventillatory support. Other symptoms include diarrhea, amnesia, vomiting, headache, change in the pupil size, alternation of the reflexes and vomiting (Tomás, 1996).

Treatment

The animals affected should be subjected to artificial respiration, while human beings require ventillatory support, which can prevent deaths of up to seventy percent of those severely affected people within duration of twelve hours (Tomás, 1996). As with many of causative toxic diseases, the initials are tips of iceberg. This requires the public to report to public health authorities concerned to prevent further spread of the disease. The most effective way to prevent the spread of this disease is to eliminate contaminated shellfish within a human body, which is vulnerable to the shellfish and other transvectors. This will limit the spread of the disease from one person to another including animals (Tomás, 1996). Fish poisoning can sometimes be treated by the use of Antithistamines and epinephrine, while ciguatera requires intravenous mannitol for treatment (Tomás, 1996). Marine toxin consumption can be prevented by providing guidelines for safe food consumption: (1) since any person who eats shellfish containing the causative toxic may become ill. People with liver problems and weak body immune systems are advised not to eat raw seafood due to their high risk of vibro infection, and (2) sea foods should be kept at temperatures less than

thirty eight degrees: this should be in the refrigerator or ice (Tomás, 1996). In conclusion, Dinoflagellates group forms a bigger percentage of marine planktons. Significant amounts are also found in fresh water habitats. They play important roles such as causing red tides, and producing coral reefs in their ecosystems. Their main carrier agent is shellfish, which when ingested by human beings, results into diseases such as paralytic shellfish poisoning and Diarrheic shellfish poisoning. These diseases can be avoided by refraining from consuming infected shellfishes.

Reference

Tomás C. R. (1996). Identifying marine diatoms and dinoflagellates. Massachusetts: Academic Press.