

Polycyclic aromatic hydrocarbons in Mussel from Iceland

PAH compounds in mussel from the Icelandic coastline the last two decades

Berglind Ósk Alfreðsdóttir

Master student in food science, MATÍS

Supervisors: Helga Gunnlaugsdóttir & Hrönn Jörundsdóttir

Background: Polycyclic aromatic hydrocarbons (PAH) are a group of hundreds of compounds that are composed of fused aromatic rings formed through combustion of organic matters. They are known to bioaccumulate and persist in the environment. The major source of PAH release to the environment is through human activities but it can also be from natural sources. The health concerns associated with PAHs come from their carcinogenic and mutagenic effects. The major routes of human exposure are through breathing air and eating food that contains PAHs. The monitoring of PAHs is important both for environmental and food safety aspect. Therefore sixteen PAHs have been determined to be priority pollutants by the USA Environmental Protection Agency, these 16 PAHs are commonly used in monitoring projects.

Aim: The aim of the project was to analyze and quantify the priority polycyclic aromatic hydrocarbons in blue mussel from three locations, Úlfsá Skutlusfirði, Brekka in Mjóifjörður and Hvassahraun in Hafnafjörður, Iceland the last two decades.

Method: Analyze and quantification in blue mussel was performed using gas chromatography coupled to mass spectrometry (GC-MS) with the aid of internal and surrogate standards.

Results: These are not the final results. In Hvassahraun and Úlfsá the concentration of PAHs is low and relatively continuous for the period. In Mjóifjörður the concentration is relatively high. There was a big increase in the concentration around the year 2000 that has been continuous since.

Conclusion: The reasons for evaluated PAH concentration in Mjóifjörður are for considerations.