

Multi-class of endocrine disrupting compounds in aquaculture ecosystems and health impacts in exposed biota

ABSTRACT

Fishes are a major protein food source for humans, with a high economic value in the aquaculture industry. Because endocrine disrupting compounds (EDCs) have been introduced into aquatic ecosystems, the exposure of humans and animals that depend on aquatic foods, especially fishes, should be seriously considered. EDCs are emerging pollutants causing global concern because they can disrupt the endocrine system in aquatic organisms, mammals, and humans. These pollutants have been released into the environment through many sources, e.g., wastewater treatment plants, terrestrial run-off (industrial activities, pharmaceuticals, and household waste), and precipitation. The use of pharmaceuticals, pesticides, and fertilizers for maintaining and increasing fish health and growth also contributes to EDC pollution in the water body. Human and animal exposure to EDCs occurs via ingestion of contaminated matrices, especially aquatic foodstuffs. This paper aims to review human EDC exposure via fish consumption. In respect to the trace concentration of EDCs in fish, types of instrument and clean-up method are of great concerns.

Keyword: Aquaculture; Aquatic ecosystem; Emerging pollutant; Endocrine disrupting compounds; Health risk; Waste water treatment plants