

Lc 50 and Id 50 - dissertation example

Literature, Russian Literature



LC 50 and LD 50

000009 Meaning of LC 50 and LD 50 LC 50, also known as lethal concentration 50%, is the concentration of a substance in air or water that is able to kill a half the population of inhabitants of the medium. The definition applies to a single injection of the subject substance in the medium.

LD 50, also known as lethal dose 50 %, refers to the amount of a substance, in solid or liquid form, which is able to kill 50 % percent of a target population in a single dose. The dosage defines either single or multiple applications according to predetermined prescriptions. The two terms defines lethal administration of a substance in a habitat (Fingas and Charles, p. 191).

How oil can enter an organism

Oil can enter into plants and animals' bodies through different ways such as " physical exposure, ingestion, absorption and through food chain" (Fingas and Charles, p. 193). Entrance by physical exposure involves the organisms' direct contact with oil, such as movement in the oil that can then enter the organisms' bodies through their external openings. Ingestion is however the case of a direct consumption of oil. Absorption of oil occurs through transfer of volatile components through membranes of plants and some animals while exposure through food chain involves multiple transfers through ingestion (Fingas and Charles, p. 193).

Meaning of avoidance

Avoidance is one of organisms' responses to calamities, such as oil spill, by restraining from affected areas. Aquatic animal are for example able to move to deeper levels to avoid spilled oil on water surface.

Effects of oil spill on the aquatic environment

Oil spill have different degree of effects on plants and animal depending on species and age.

Fish

Effects of oil spill are a factor of component hydrocarbons that have different effects on fish. Susceptibility to the pollution is for example inversely proportional to age of fish. The degree of saltiness of inhabited water, temperature, availability of nutrients and health condition of a type of fish also determines effects of a spill's contamination. Effects in fish may also be either temporary or permanent to alter body functionality (Fingas and Charles, p. 194- 197).

Plankton

Planktons succumb to low levels of hydrocarbon concentration from oil spills but are able to reproduce quickly. Some of the induced effects of oil spill on planktons include impaired potential to feeding and photo responsiveness.

Benthic invertebrates

The organisms are affected by oil that sediments at waterbed but can withstand large concentrations of hydrocarbons. Even though prolonged exposure may cause death of the organisms, they excrete accumulated toxics after some time (Fingas and Charles, p. 198-199).

Marine mammals

Marine animals are affected by spill pollution in different ways depending on species and age (Fingas and Charles, p. 199).

Intertidal fauna and marine plants are however highly susceptible to the pollution because of their relative immobility in their environments (Fingas

and Charles, p. 202).

Financial consequences of the BP oil spill

BP's total financial consequences from the oil spill includes clean up costs and legal liabilities. The total incurred expenses; both cleanup cost and cost of legal liabilities are close to 42 billion dollars. The company however still faces a possible gross negligence liability that could cost it an extra 21 billion dollars in legal settlement. The total expected cleanup cost is therefore currently estimated to reach 63 billion dollars (Crooks and Scannell, p. 1).

Works cited

Crooks, Ed, and Scannell, Kara. "BP agrees \$ 4.5 bn gulf spill settlement." Financial Times. November 15, 2012. Web. November 21, 2012. .

Fingas, Mervin, and Charles, Jennifer. The basics of oil spill cleanup. Boca Raton, FR: CRC PressINC, 2001. Print.