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**SPC 2402 ENVIROMENTAL CHEMISTRY**

**B.E.D SCIENCE BIOLOG Y AND CHEMISTRY**

**YEAR FOU RSEMESTER TWO,**

**1.Examine the impact of the following pesticide chemical families on the environment**

a. ***Organochlorides:***

Persistence : Organochlorides, like DDT, are known for their long persistence in the environment ,leading to bio accumulation in organisms.

Bio accumulation: This persistence results in higher concentrations of organochlorides in organisms higher up the food chain, affecting predators and potentially causing reproductive issues.

b**. *Carbamates:***

Acute Toxicity: Carbamates, such as carbaryl, are characterized by their acute toxicity, affecting insects and other invertebrates upon exposure.

Water Solubility: Carbamates can be water-soluble, contributing to potential contamination of surface and groundwater.

c. ***Organophates:***

Neurotoxicity: Organophates, like malathion, are neurotoxic, impacting the nervous systems of both target and non-target species.

It'sessentialtoconsiderthesecharacteristicswhenassessingtheenvironmentalimpactofeachpesticidechemicalfamily.

2.**Discuss the impact of pesticide pollution on the soil, water and air**

***P****esticide pollution can have significant impacts on soil, water ,and air:*

***1.Soil Impact****:*

**Reduced Fertility:** Pesticides can degrade soi lquality by affecting essential microorganisms and nutrient cycles, leading to reduced fertility.

**Bioaccumulation:** Some pesticides may accumulate in the soil, impacting plants and organisms in the ecosystem and potentially entering the food chain.

**Disruption of Soil Ecosystems**: Pesticides can disrupt the balance of beneficial insects and organisms in the soil, affecting overall ecosystem health.

2.***Water Impact:***

**Contamination**: Pesticides can leach into water bodies, contaminating both surface and groundwater.

**Aquatic Ecosystem Disruption:** Water pollution from pesticides can harm aquatic organisms ,disrupt food chains, and lead to the development to pesticide-resistant pests.

**Run off:** Surface run off from treated fields can carry pesticides into near by rivers and lakes, posing a threat to aquatic ecosystems.

***3.Air Impact***:

**Air borne Drift :**Pesticides applied as sprays can drift through the air, affecting non-target areas and potentially harming organisms in unintended locations.

**Respiratory Health Issues :** Air borne pesticide residues may pose risks to human health through inhalation, causing respiratory problems and other health issues.

**Contribution to Air Pollution**: Pesticides in the air can contribute to overall air pollution, affecting both local and regional air quality.