
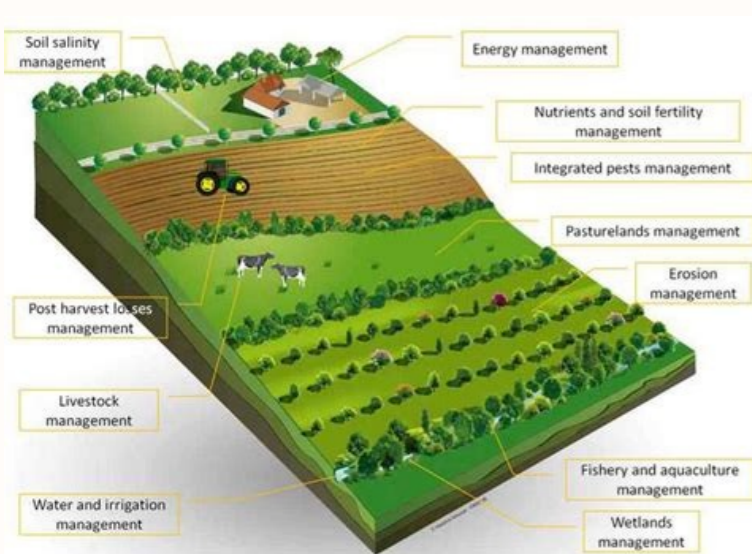
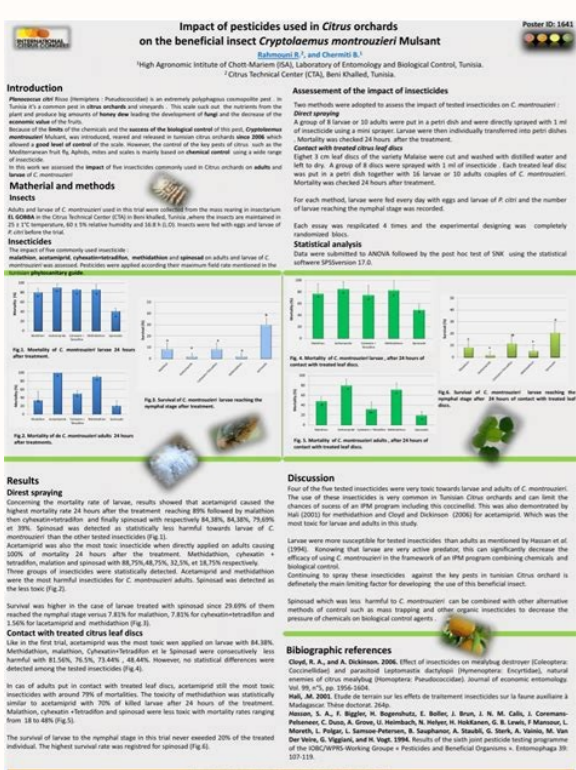


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Hard/Persistent Pesticides

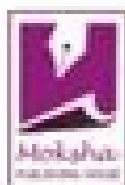
Characteristics:

- Composed of compounds that retain their toxicity for long periods of time. They work their way up the food chain through animals and may accumulate in their fatty tissues and stay indefinitely.

Examples:

DDT and many other chlorinated hydrocarbons.

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Review Article

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CLASSIFICATION OF PESTICIDES: A REVIEW

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ABSTRACT

Pesticides are the natural or synthetic agents designed to kill all types of pests. Pesticides are used in different fields like agriculture, forestry, aquaculture, food industry etc. Due to its gross use these pesticides threaten public health and ecosystem. Classification of pesticides done according to various criteria like its toxicity or hazardous effects, its use or purpose, its chemical composition, its mode of action, how or when it works, its formulations, its source of origin. By giving importance to public health, WHO has done classification of pesticides on the basis of hazardous effects. With the comprehensive knowledge of classification of pesticides, gross use of pesticides can be minimized by using it judiciously and it is helpful to public health & ecosystem.

Keywords: Pesticides, Classification, Toxicity, Ecosystem.

INTRODUCTION

Pesticides are chemical compounds that are used to kill pests, including insects, rodents, fungi and unwanted plants (weeds). Pesticides are mainly used for benefits like crops protection, preservation of food materials and prevention of vector borne diseases. They are also used in different field like agriculture, forestry, aquaculture, food industry, processing, transportation and storage of wood and other biological products.¹ Gross use of pesticides cause damage to public health and ecosystem. Incidence of poisoning, as reported, is 13- fold higher in developing countries than in highly industrialised nations, which consumes 85% of world's pesticide production. Most pesticide related poisoning in developing nations can be attributed to lack of training in their use, poor legislative control and carelessness in providing protection to the body during their application.² Pesticides have different distribution and persistence patterns in the environment, even if all of them are distributed in some way through air, soil and water.³

Pesticides are classified on the basis of various criteria. Most commonly used criteria for classification of pesticides are its mode of entry, its chemical composition and target it kill. But giving importance to public health, World Health Organization (WHO) and Globally Harmonized System (GHS) classified pesticides according to their toxicity or hazardous effects. Without ignoring risk factors of pesticides, we must have to use it for better crop production & food preservation. But by using it judiciously with the help of different classification of pesticides, its gross use, exposure and toxic effects can be minimized.

Review of Literature

Pesticides are natural or synthetic agents which are designed to kill or reduce or repel insects, weeds, rodents, fungi or other

organisms. United Nations Organization for Food and Agriculture (FAO) defines pesticides as any substance or mixture of substances intended for growing, destroying, preventing or controlling any pest, including vectors of human disease or animal disease, unwanted species of plants or animals that cause damage or otherwise interfering in the production, processing, storage, transport or marketing food, agricultural products, wood and wood products or animal feedstuffs or which may be administered to animals for the control of insects, arachnids or other pests in or on their bodies.⁴ Based on code of Federal Regulations (CFR) a pesticide is defined as any substance or mixture of substances intended for use as plant regulator, defoliant, or desiccant.⁵

Classification of Pesticides

Pesticides are classified on the basis of various criteria such as toxicity (hazardous effects), pest organism they kill and pesticide function, chemical composition, mode of entry, mode of action, how or when they work, formulations and sources of origin.

Classification of pesticides on the basis of toxicity

Toxicity of pesticide mainly depends on two factors namely dose and time. Hence, how much of the substance is involved (dose) and how often the exposure to the substance occurs (time) give rise to two different types of toxicity- acute and chronic toxicity.⁶

Acute Toxicity- Acute toxicity refers to how poisonous a pesticide is to a human, animal or plant after a single short-term exposure. A pesticide with a high acute toxicity is deadly even when a very small amount is absorbed. Acute toxicity may be measured as acute oral toxicity, acute dermal toxicity and acute inhalation toxicity.

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