Lecture title: Pesticides

Lecturer Affiliation: University of Mosul / College of Veterinary Medicine / Department of Physiology, Biochemistry and Pharmacology

types of pesticides

Pesticides:- toxic substance or mixture of substance used to kill animals and plants that cause economic damage to crop or ornamental plants or are hazardous to the health of domestic animals and human .

Pesticides are classified as their biological effect in to :-

Insecticides

Herbicides

Rodenticides

Fungicides and other

Essentials of good pesticides

Specific should have high margin of safety for livestock (animals and plants).

It should be easier to handle and easy for application .

It should not show toxicity in case of warm blooded animals .

It should not have flammable or explosive character.

It should have safety and palatability of the food products exposed to insecticides and should not show the residual effects of pesticides .

It should be available easily at affordable cost

Insecticides:-

TYPES OF INSECTICIDES :-

Organophosphate Insecticides (anti Cholinesterase Insecticides) e.g. Dichlorovos , Diazinon , Malathion .

Organophosphorus (O.P) an organic ester of phosphoric acid ,O.P. compound have been used as pesticides and developed as warfare nerve gas agents such as (Sarin , Soman), all O.P. compound are poisonous and dangerous mis uses .

They also are available for household use to control pests in the yard, garden, and home or directly on animals.

Methods of uses :

1- Used on live stock or on building as sprays

2- dips

3- fogs

4- Flea collars

5- as pour on the back of animal for absorption and

circulation through the body

6- give orally to dogs to control (Fleas).

Mechanism of action :-

Its inhibit cholinesterase enzyme irreversibility caused build up of acetyl choline at the myoneural junction become excessive toxicity caused by excess ACH and uncontrolled parasympathetic signs

Clinical signs of poisoning :-

Muscarinic type:- salivation , lacrimation , urination , sweating , diarrhea , vomiting , abdominal cramp, hyper motility in GIT, dyspnea, miosis and cyanosis.

Nicotinic type :- stimulation of skeletal muscles , twitching of face muscles , eyelids and tongue.

Central nervous system type:- vary with species

In domestic animals may exhibit excessive stimulation of C.N.S but rarely convulsion seizures (but see in dogs and cats). Followed by C.N.S depression and death.

Diagnosis :-

Case history

Clinical signs

Aid cholinesterase activity in blood and brain (reduced)

Treatment of O.P. poisoning :-

Atropine sulphate block central and peripheral muscarinic effect .

CHE reactivators (2-PAM) pralidoxime. Treatment with oxime must be instituted as soon as possible with (24-48hr.).

Emesis induced in oral exposure. Contraindication in depressed animal .

Oral administration of mineral oil (to reduced absorption) from GIT.

Activated charcoal (AC) 3-6mglkg in water to adsorb O.P. and elimination in feces.

Removal of poison : dermal exposure ;wash with detergent and water (at room temp.) without irritant the skin .

Barbiturate to treat convulsion .

Supportive therapy :- a- artificial respiration or O2 therapy.

Forced feeding and fluid is very important.

Diphenhydramine 4mglkg orally l8hr. block nicotinic overstimulation in dogs