



B.Sc. Third Year V Semester

Chemistry

Paper XII [Organic + Inorganic]

Organic Chemistry



Rodents

PESTICIDES



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Fungi

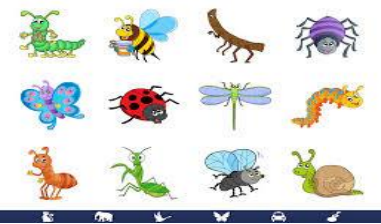




Introduction

PESTICIDES

Pest = Living organism, Cides = kill



- Pesticides are poisons used to kill pest
- We use pesticides to kill of pests that hurts us , animals or plants. Farmers first used them to kill of bugs and weeds because they have big fields. After a while the cities and towns started using them.
- Pests don't have to be just bugs they can be weeds, disease that kill plants and other animals like rats or mice

- **Definitions: Any substance or mixture of substances, intended for preventing, destroying, or mitigating any pest, or intended for use as a plant growth regulator, defoliant or desiccant. (FIFRA).**
- **Chemical compounds which are used to destroy insects, fungi, weeds & responsible for damage of standing crops & stored food grains.**
- **Technically includes bio controls and plants bred for pest resistance.**
- **Any substances / mixtures intended for preventing, destroying , controlling any pest**



Types of Pests



Pests

Animals Pests

Plant Pests



Rodents

Insects

Weeds

Microbes

Fungi

Biting

Sucking





What do Pesticides Look Like ?



- Pesticides come in bottles, boxes and bags
- Some pesticides look either white or yellow dust when it in cans. Pesticides in a bag look like gray or yellow dirt. Other pesticides look like candy in small bags.

Why are pesticides bad ?

WARNING: Pesticides are Dangerous to Your Health!

Stop Endocrine Disrupting Chemicals!



- The main reason pesticides are bad is because they are bad for our health.
- The second reason is because when it rains, the water picks up the pesticides and puts into our rivers and drinking water
- The last reason is that some of the pests like bugs, are not bad for the plants and some even helps plants.

How can pesticides affect us ?



Pesticides can.....

- Cause of variety of cancer
- Cause child development interface
- Cause low birth weights
- Cause birth defects
- Make your skin itch and turn red
- Give you headache
- Make you dizzy, shaky and tired
- Be fatal if put in your mouth

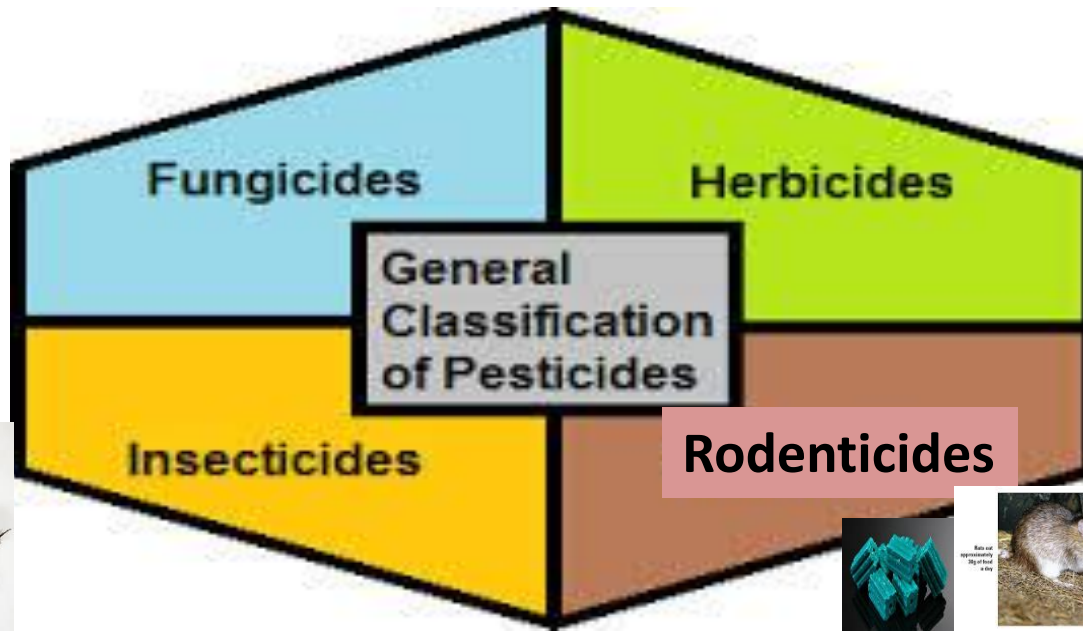


Classification of Pesticides

Pesticides are commonly classified several ways:

- Chemical class -- Increasingly diverse
- Target Organism
- Mode of Action
- Application timing or usage
- In discriminate use of pesticides could leads to **water** and **air** pollution harmful for human being and animals

Mode of Action



Pesticides Chemical



1. Insecticides : Substances or mixture of substances used for killing insects. Powders , Liquids , Emulsion, Suspensions.



a. Natural Insecticides : Nicotine , Rotenone



IS NICOTINE REALLY THAT BAD?



b. Inorganic Insecticides : Lead arsenate, Sulphur, H_2SO_4 Calcium arsenate. NaCN

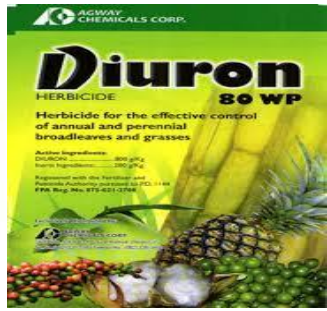


c. Synthetic Organic Insecticides : DDT, BHC, Dinitrophenol



2. Herbicides : Are chemical compounds used to kill /destroying weeds from standing crops or anywhere there is weeds.

2,4-D, 2,4,5-Trichlorophenoxyacetic acid, Diuron.



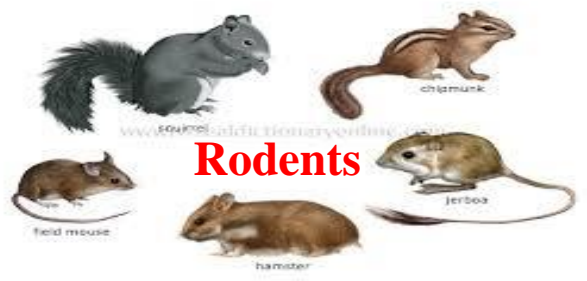
3. Fungicides : Compounds are used to destroy fungi which on standing crops or stored food grains.



Copper sulphate , copper naphthalate , 2,4,6-trinitrophenol



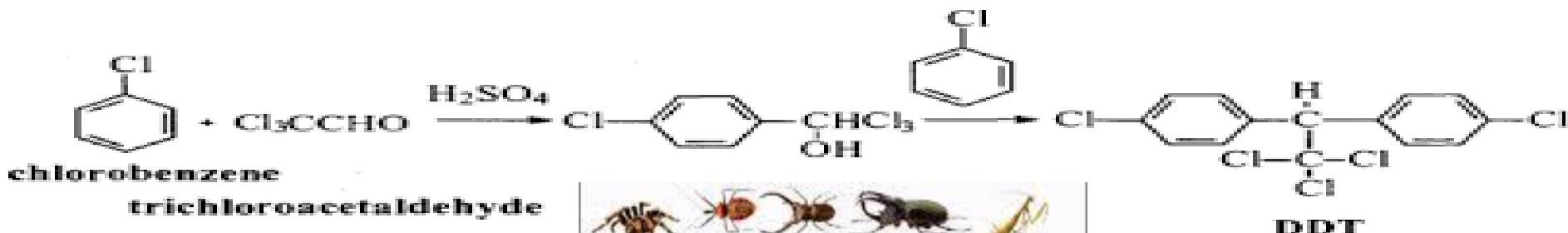
4. Rodenticides : Compounds which are used for killing rats / mouse / rodents. Rats are enemies of farmers, they destroy standing crops, stored foods and spread diseases.



Synthesis & Uses of Pesticides



DDT : 1,1,1-Trichloro – 2,2-bis – 4 – chloro phenyl ethane /p, p dichloro diphenyl trichloro ethane

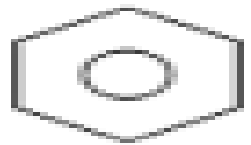


Uses

- Insecticides.
- Control mosquitoes.
- House flies, spiders.
- Mites.
- Aphides.
- Control leaf hoppers and moth.

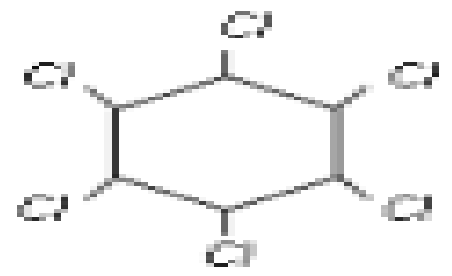


BHC : Benzene hexa chloride , C₆H₆Cl₆ 666 Gammexane



Benzene

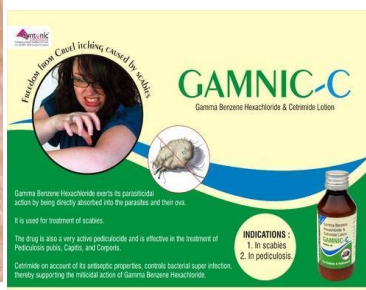
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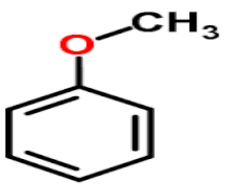
BHC

Uses

- Same as insecticides .
- Also used as agricultural pest.
- Control bedbugs.
- Control scabies.

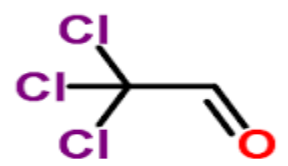


Methoxychlor : 1,1,1 – Trichloro – 2,2 – bis – 4 – methoxy phenyl ethane



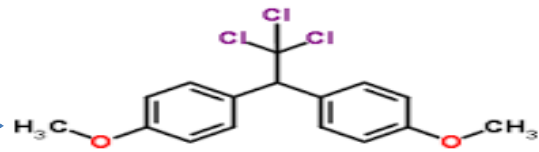
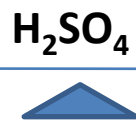
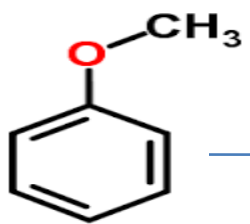
Anisole

+



chloral

+



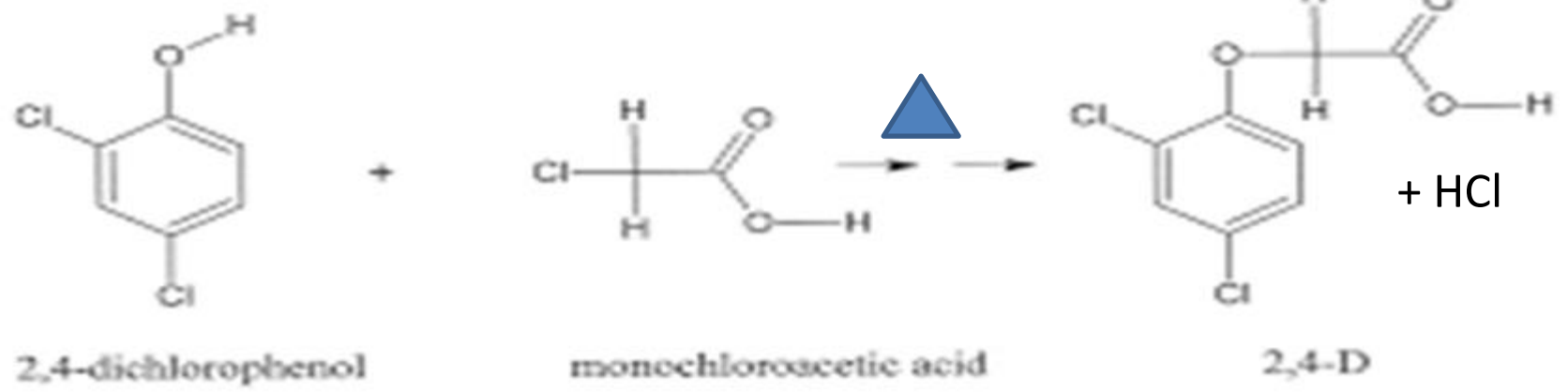
Methoxychlor

Uses

- Insecticides.
- House hold insects & vegetables crops.
- Milk dairies & not toxic effect on milk.

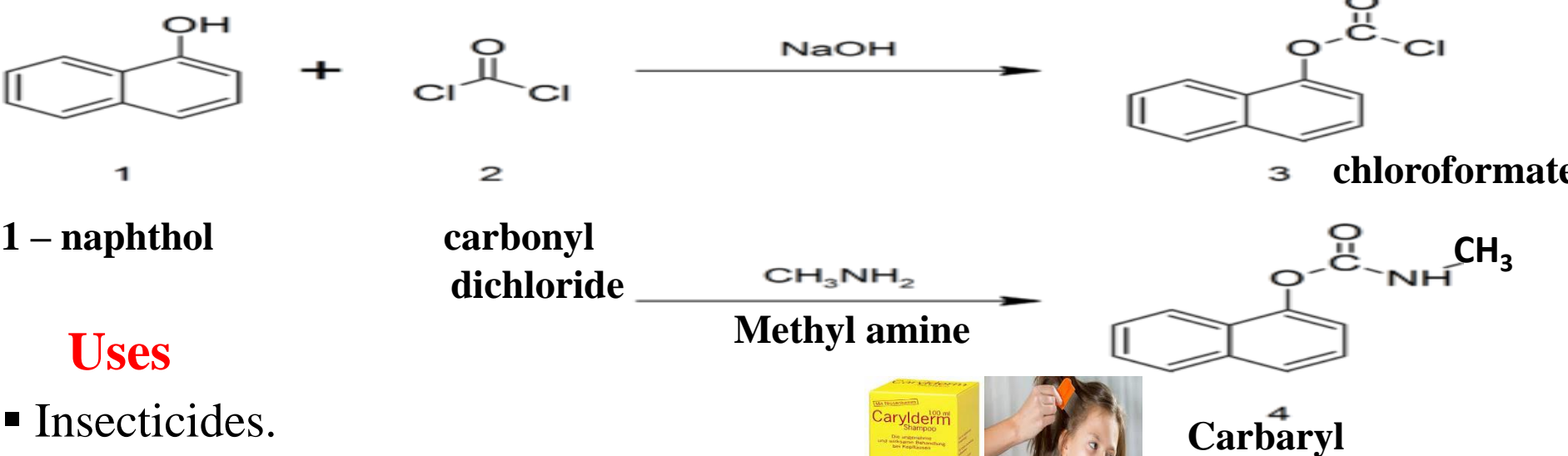


2,4 – D : 2,4 – Dichlorophenoxyacetic acid



Herbicides to control unwanted weeds in crops.

Carbaryl : 1 – Naphthyl methylcarbamate / Carbaril

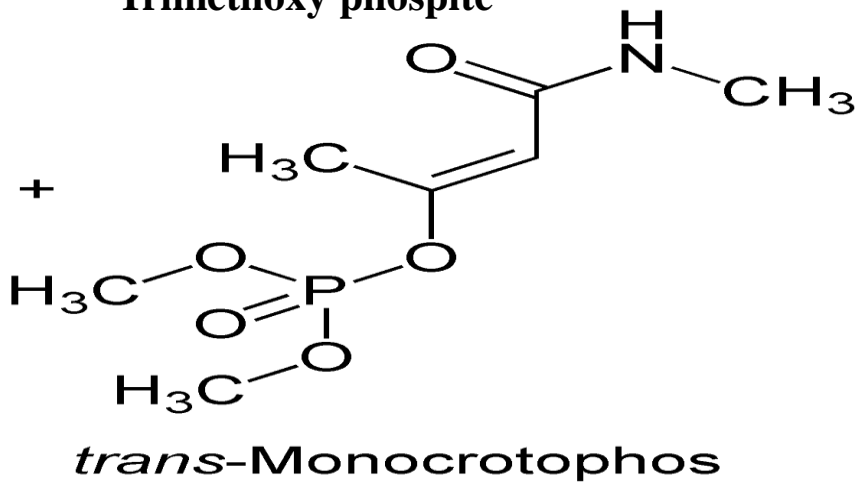
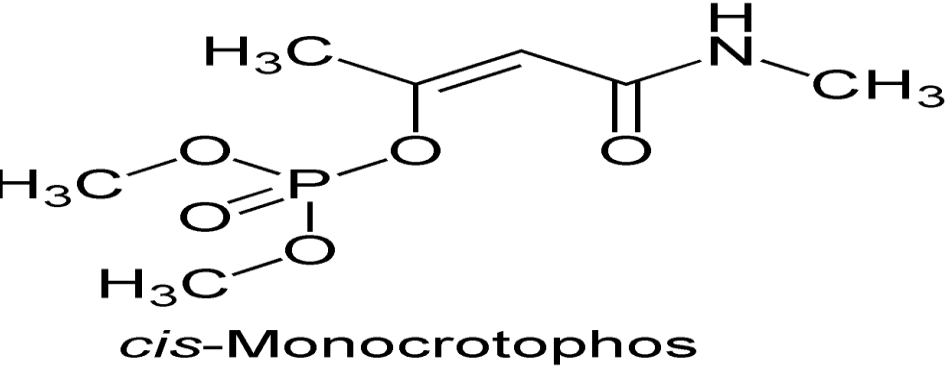
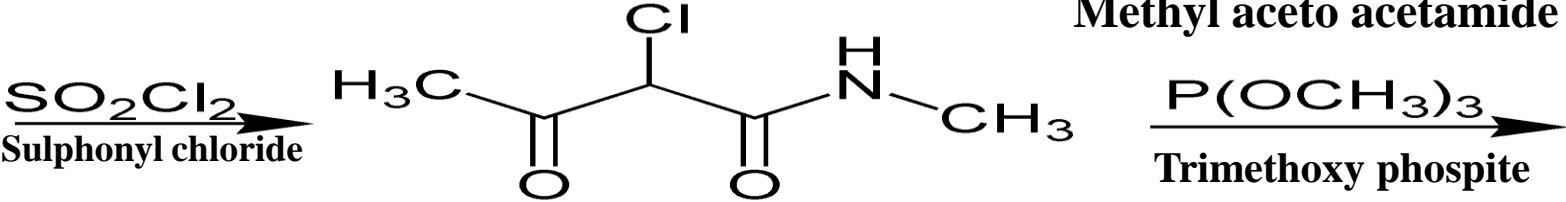
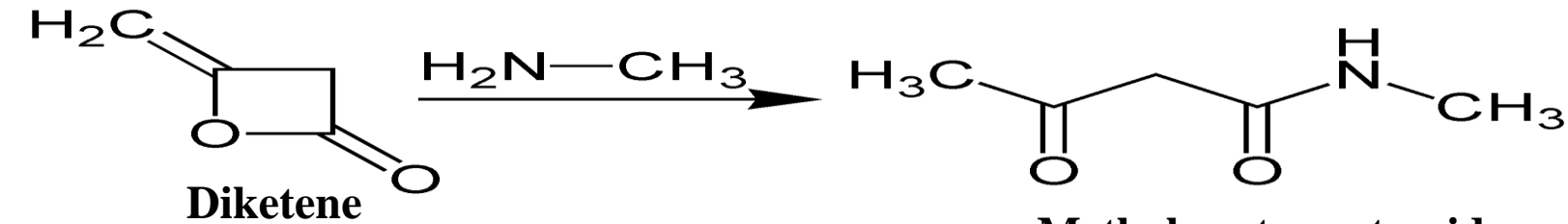


Uses

- Insecticides.
- Active ingredients in carylderm shampoo.
- Used to combat head lice until infestation is eliminated.



Monochrotophos : Dimethyl – 1 – methyl – 2 – (methylcarbamoyl) Vinyl phosphate
 Azodrin / Nuvacron / Bilobran commonly called Endrin



- Agriculture pesticides like cotton crops, rice, sugar cane
- Used frequently as a tool to commit suicide

.....SUGGESTIONS 

Created by, Dr. Subhash Lonkar



Thanks! 