Rodenticides poisoning

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Ancient period : پیاز وحشی یا Red squill





Cardiac glycoside
Vomiting [not in mice]



17 Century

UK in india

Fruits of strychnus tree

Low dose: CNS Stimulator

High dose: Rodents & Mammilian toxin

Strychnin: Slow toxin



- **Glysin inhibitor (painful tetanic death)**
- **Postmortem persistency**
- **No antidot**

Century 19

Minerals as rodenticides:

A) Arsenic Three oxide:

B) Yellow/White Phosphorus:

C) Thallium Sulfate:

D) Zinc Phosphide:









No antidote
Human death
Environmental persistence
Bait Shyness
Predators poisoning (PMP)





As_2O_3



Tasteless and odorless

White powder

Destruction of Krebs cycle

CNS & generalized cell death + Hemorrhagic Gastroenteritis

The number one weapon in intentional homicides

Yellow/White Phosphorus



- As paste
- Spreading on bread (Garlic odor + Green floursence light)
- GI necrosis + Hepatic necrosis (Jaundice)
- Diarrhea and vomiting with a colorful sheen + Exhaling smoke that smells of garlic
- Child poisoning



Thallium Sulfate−Tl_2SO_4

Sluggishness of effect

Potassium-like substances and potassium substitutes in cellular pumps (cell death)

The poisoner,s poison: Generalized alopecia + Peripheral neuropathy

Persistent presence in the soil, accumulation in the food chain, and rates



Zinc Phosphide−Zn3P2



Dark & fish (garlic) odor [Phosphine gas]

Cheap & Powerful

Cytochrome C Oxidase inhibitor



1950

- 1925: Fatal hemorrhaging in cattle after consuming moldy alfalfa and sweet clover (USA).
- 1940: Fungi in moldy clover convert the natural substance coumarin into a potent anticoagulant compound called dicoumarol.
- 1948: Synthesis of Warfarin from Dicoumarol

Warfarin benefits

- No Bait Shyness (Delayed death)
- Delicious for mice
- With antidote: Vit K



- To kill the rat, it needed to eat it for several days in a row: Child safety

Warfarin mechanism

Inhibition of the enzyme Vitamin K Epoxide Reductase (VKOR)

1960: OPPPPPPPSSSSSSSS [Warfarin Resistance]

1970: Second-Generation Anticoagulant Rodenticides = Superwararins



Lipophilic [Fast]

Prolonged accumulation in body



Death of predator

Treatment: Prolonged VitK

2010

1) **Bromethalin: Neurotoxin [Such peracute pneumonia]**

2) **Vit D3**