Organochlorine poisoning

Dr Mostafa Abdollahi

DVSc of Large Animal Internal Medicine

Graduated from University of Tehran (Iran)

Assistant Professor: Faculty of Veterinary Medicine, Semnan University, Semnan, Iran

Email: mostafaabdollahi@semnan.ac.ir

1940-1944







Allied Powers: USA + SA + UK + France

Axis Powers: Germany + Japan + Italy

Outbreaks of Typhus & Malaria

Death camp (Poland & Germany)

Hauptquartier (Germany-SA….Typhus)

Philippine (USA-Japan… Recurrent Malaria)









prowazekii rickettsia

Lice









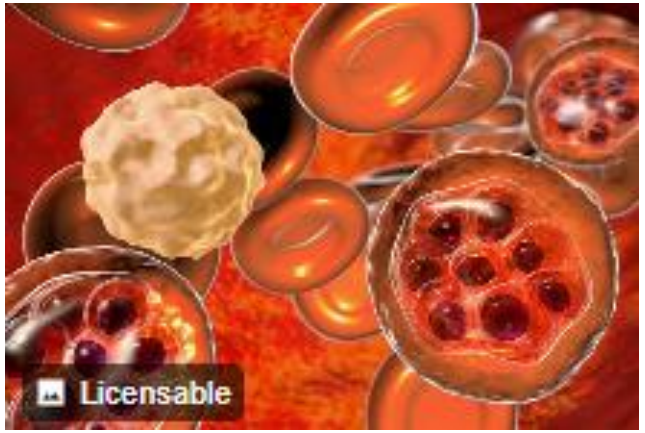




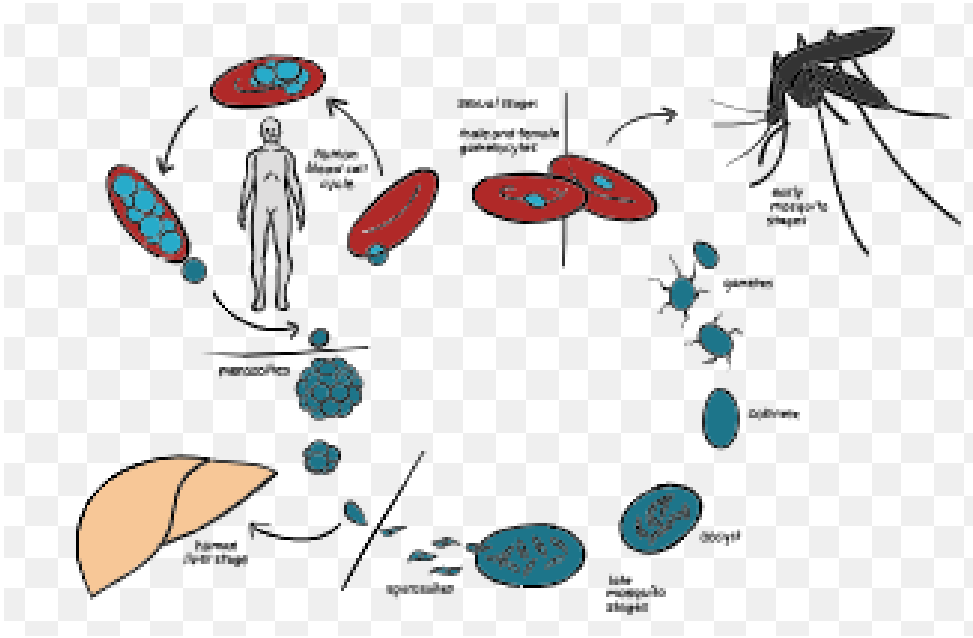


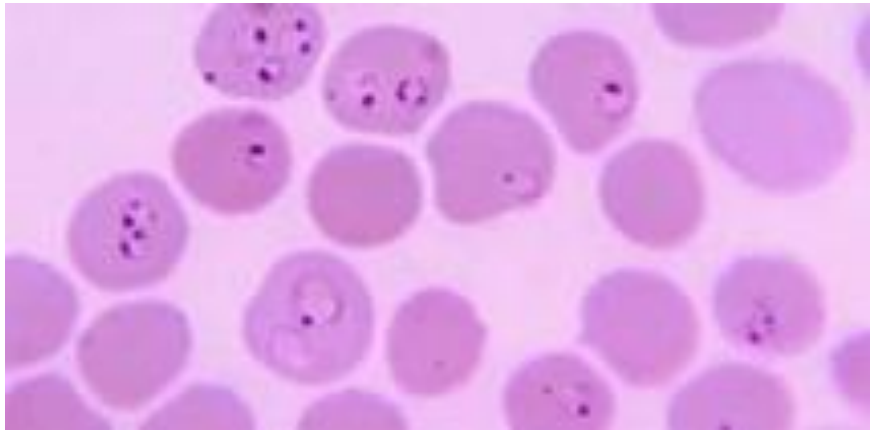
Plamodium
Aedes







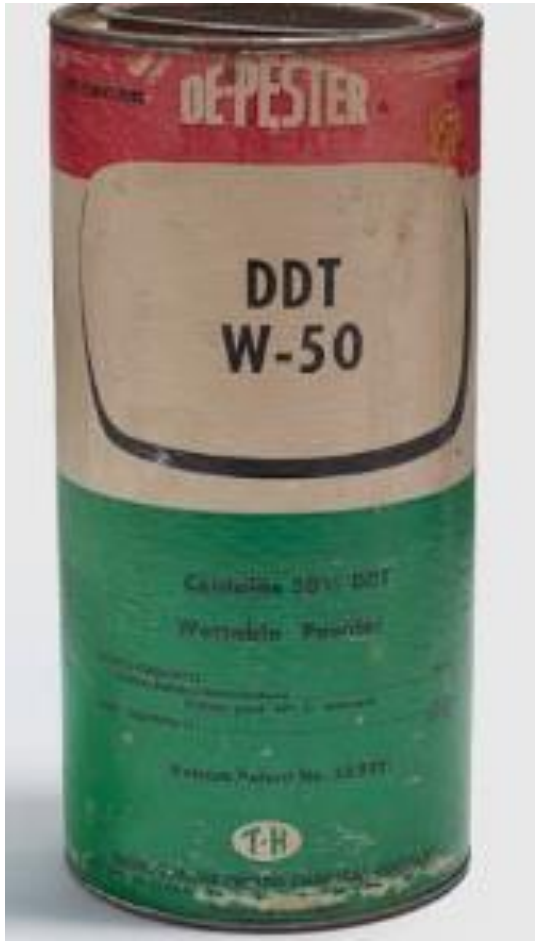




The discovery of DDT in Switzerland (1339)



1945-1950: Chemistry for a better life (DDT= Cheap + Persistent + Powerful)





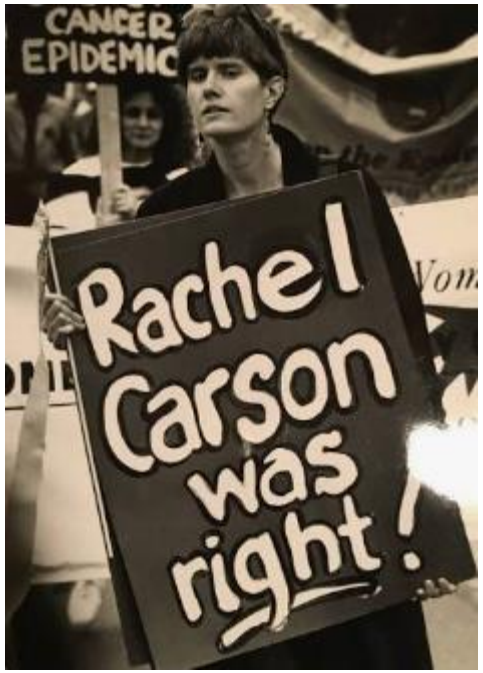
1962 (No bird sound in the nature & spring)





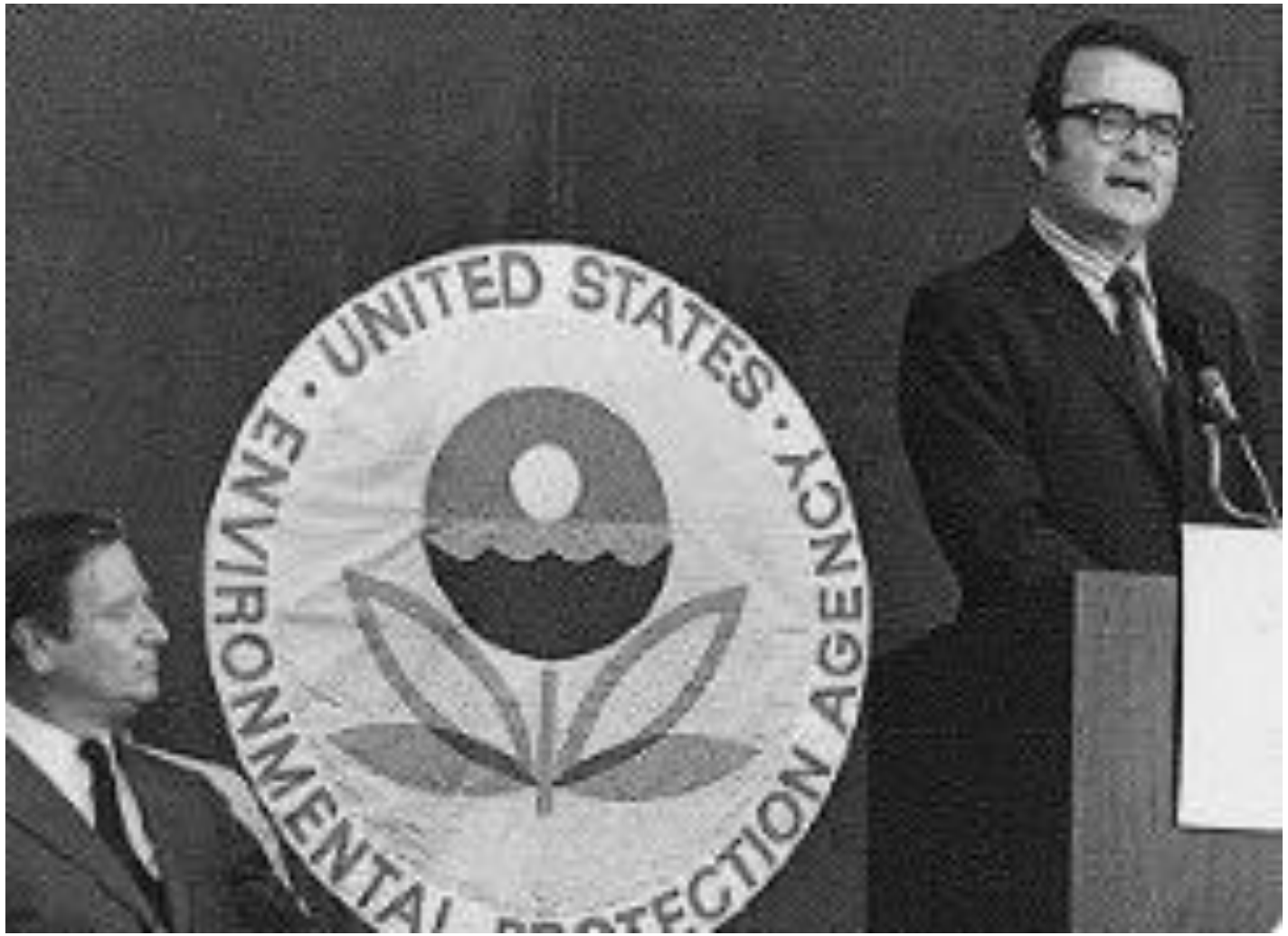
1962-1972

- Accumulation in water & Soil
- Accumulation in lipid tissue
- Eggshell Thinning
- Biomagnification
- Milk residual





EPA DDT ban 1972



Toxicity







Organochlorines were once believed to be the greatest medical breakthrough of the 20th century.

Organochlorines are lipophilic and have low dermal absorption, so they enter the mammalian body and were stored in adipose tissues, glands, and the brain for years.

This silent toxicity caused endocrine and reproductive disruptions.

Hormonal Mechanisms of Organochlorines (Chronic form)

Organochlorines act as classic endocrine-disrupting chemicals (EDCs) by interfering with the body's delicate chemical signaling.

They can mimic natural hormones (such as acting as xenoestrogens), block hormone receptors (such as anti-androgenic effects), and accelerate the breakdown of vital hormones in the liver.

This profound disruption alters thyroid function and reproductive pathways, leading to infertility, embryonic loss, and developmental defects.

Acute Organochlorine Poisoning

Acute toxicity occurs when a high dose [PO] overstimulates the central nervous system.

Organochlorines prevent sodium channels in nerve membranes from closing, triggering an “electrical storm” of continuous nerve firing.

This results in extreme hyperexcitability, muscle tremors, severe clonic-tonic seizures, hyperthermia, and ultimately death due to exhaustion of the respiratory center in the brain.




DE-PESTER
DDT
W-50


100ml
Lindane Lotion USP
(Gamma Benzene
Hexachloride Lotion)
For the Treatment of
Scabies And Pediculosis
(Hair Lice)


Chlorpyriphos 20%
Aldrin TC
Aldrin TC


the household good mate
for household insect control
dieldrin


GREEN CROSS
Chlordane
DOMESTIC
LIQUID INSECTICIDE
READ THE INSTRUCTIONS ON BOX BEFORE USING
Kills ants, white grubs and many other pests.
GUARANTEE:
Tech. Chlordane 400 grams/litre
REG. NO. 2833
P.C.P. ACT
NET CONTENTS 250 mL
DANGER
POISON


A TERMITE ERADICATION SYSTEM
HEPTACHLOR
SHAKE WELL BEFORE USE


FRATI
METHOXYCHLOR
INSECT SPRAY


Pursuit
COOP
TOXAPHENE
EMULSIFIABLE CONCENTRATE
CONTAINS 6 POUNDS TOXAPHENE PER GALLON
ACTIVE INGREDIENTS
INERT INGREDIENTS
100%
MIXES WITH WATER IN ALL PROPORTIONS
WARNING
KEEP OUT OF REACH OF CHILDREN
SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY


ISCA FORMICIDA
MIREX-SD
[SULFLURAMIDA]
FORMICIDA

Diagnosis

1) History

2) Clinical Findings: Seizure

3) Laboratory Findings:

A) Samples: Lipid tissue/ Brain/ Kidney/ Liver/ Stomach content/ Blood

B) Tests: GC (Gas Chromatography) & HPLC

Treatment

- Symptomatic

- No antidote