

Pesticides
Herbicides
Fungicides

Are They All Bad?

Miller Chapter 13

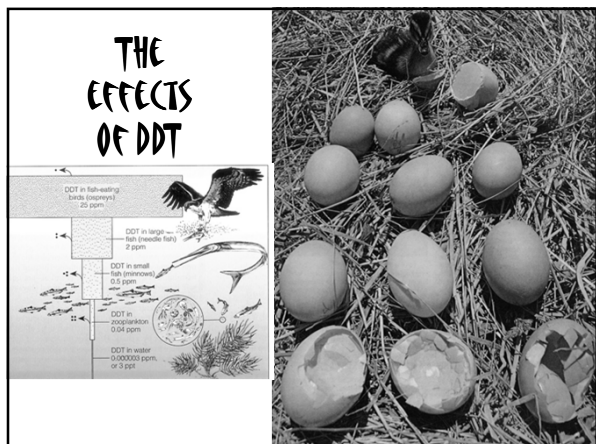
1st generation- *primarily a natural base*

Sulfur Arsenic, lead, mercury Nicotine Sulfate Pyrethrum, Rotenone

500 BC 1400's 1600's 1800's

Second Generation
The DDT story

- ◆ Dichlorodiphenyltrichloroethane first formulated in 1874
- ◆ Paul Muller was awarded a Nobel Prize in 1948 for the discovery of the insecticidal properties of DDT
- ◆ DDT was banned in the U.S.



What replaced DDT?

- * **Organophosphates:** Malathion, Parathion, diazinon
- * These have a low to moderate persistence (1 to 3 weeks)
- * Are not biologically magnified
- * They are more toxic to the farm workers

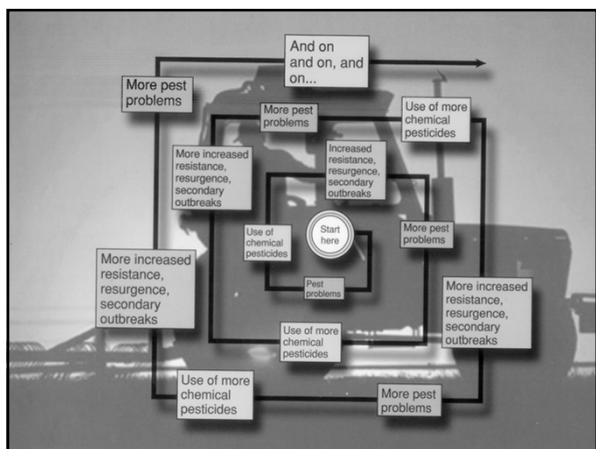
Some Chilling Facts.....

- About 1lb of pesticides is used for each person in the world

The Pro's	&	Con's
<ul style="list-style-type: none">◆ Works faster◆ 55% of food supply is lost to pests◆ Saves people from insect transmitted diseases<ul style="list-style-type: none">- Malaria- Bubonic plague- Typhus- Sleeping sickness		<ul style="list-style-type: none">◆ Genetic Resistance by pests in 5 - 10 years◆ Broad Spectrum- kills the good and the bad◆ 2% of sprayed pesticide reaches targeted crop◆ Poisons agricultural workers◆ Poisons children- increases cancer risk

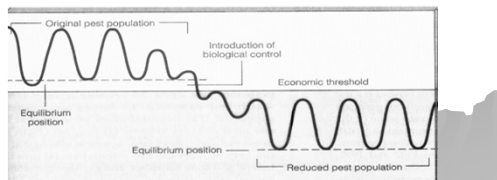
The Pesticide Treadmill

- ◆ Caused by the over-application of pesticides



Integrated Pest Management

- Can reduce pesticide use by 50-90%
- Utilizes a



IPM in Indonesia

Herbicides and Frogs



- ◆ Roundup an herbicide produced by Monsanto is extremely toxic to amphibians, application of the pesticide causes a 86% decline in tadpoles
- ◆ A dramatic increase in hermaphroditic frogs correlates with the use of DDT and other chlorinated compounds, these compounds are found to be endocrine disrupters

Atrazine.com

- ◆ Atrazine is an endocrine disruptor that causes abnormal reproductive development and immune suppression in wildlife
- ◆ Has been observed and published in fish, amphibians, and mammals
- ◆ The result is chemical castration (demasculinization) and feminization
- ◆ Exposure is associated with decreased sperm and reduced fertility in humans
- ◆ Exposure has also been linked to increased breast and ovarian cancer in women

GMO's

- ◆ Genetically modified food reduces the need for pesticides
- ◆ Remember Starlink Corn!



There has been a dramatic increase in the amount of agricultural land farmed organically.

Land that is farmed organically can produce just as high of a yield as land with chemical pesticides

Which one is more sustainable for the environment?????
