

A History of Federal Pesticide Regulation in the U.S.

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Brief History of Pesticide Use

- 1200 B.C.-Biblical Armies sowed fields with salt & ash
- 900 A.D.- Chinese used arsenic to control garden insects
- 1690- Tobacco extracts used as insecticides
- 1850s -French grape grower tried to discourage theft from his fields by applying lime/copper mixture on his vineyard. Resulted in control of downy mildew & evolved in Bordeaux Mixture- still used today
- 1940s- First DDT shipped to US for experimental use & 2,4-D introduced.

Federal Insecticide Act, 1910

- Made illegal the manufacture and sale of misbranded and adulterated fungicides and insecticides
- Administered by USDA's Insecticide and Fungicide Board



Photo credit: USDA Online Photography Center

Federal Food, Drug, and Cosmetic Act, 1938

- Provided for the first statutory protection of human health from pesticides
- Administered by USDA's Food and Drug Administration



Photo credit: USDA Online Photography Center

The Era of Synthetic Organic Pesticides

- Paul Hermann Müller, 1939, determines that p, p'-dichloro diphenyl trichloroethane has insecticidal activity against a wide array of pests
- DDT introduced into the United States in 1941



Photo credit: Nobel e-museum

Military Pest Control Operations in WWII

- DDT used to control a variety of vector-borne diseases including typhus and malaria



Photo credit: United States Army Medical Service. 1955. Preventative Medicine in World War II. Office of the Surgeon General, Dept. of the Army, Washington.

What Drift ????

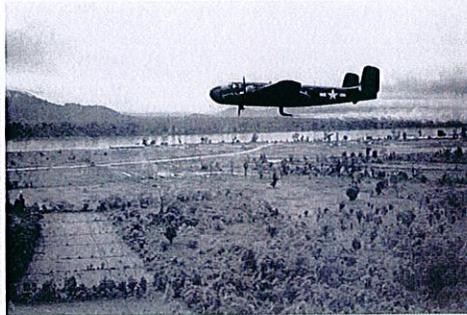


Photo credit: United States. Army Medical Service. 1955. Preventative Medicine in World War II. Office of the Surgeon General, Dept. of the Army, Washington

U.S. Post-war Domestic Acceptance of DDT

- Annual U.S. DDT production increased from 10 million pounds in 1944 to 100 million pounds by 1951

Credit: Time. 1947. Time, Inc. New York.

Domestic Uses of DDT

"Dinner Guests will be here soon!!"



Photo credit: John Osmun, Dept. of Entomology, Purdue University

Mosquito Adulticiding was very popular after World War II



Photo credit: John Osmun, Dept. of Entomology, Purdue University

The Federal Insecticide, Fungicide, and Rodenticide Act of 1947

- Required product label registration prior to introduction into the marketplace
- Placed burden of documenting a product's efficacy and safety on the manufacturer
- Administered by USDA's Insecticide Division



Photo credit: USDA Online Photography Center

Federal Food, Drug, and Cosmetic Act:
Miller Amendment, 1954, and
Food Additives Amendment, 1958 (Delaney Clause)

- Provided for tolerance-setting prior to product registration
- Established a zero tolerance for any food additive found to induce cancer when ingested by man or laboratory animals – but this applied to processed foods, not RACs

What Is a Pesticide?

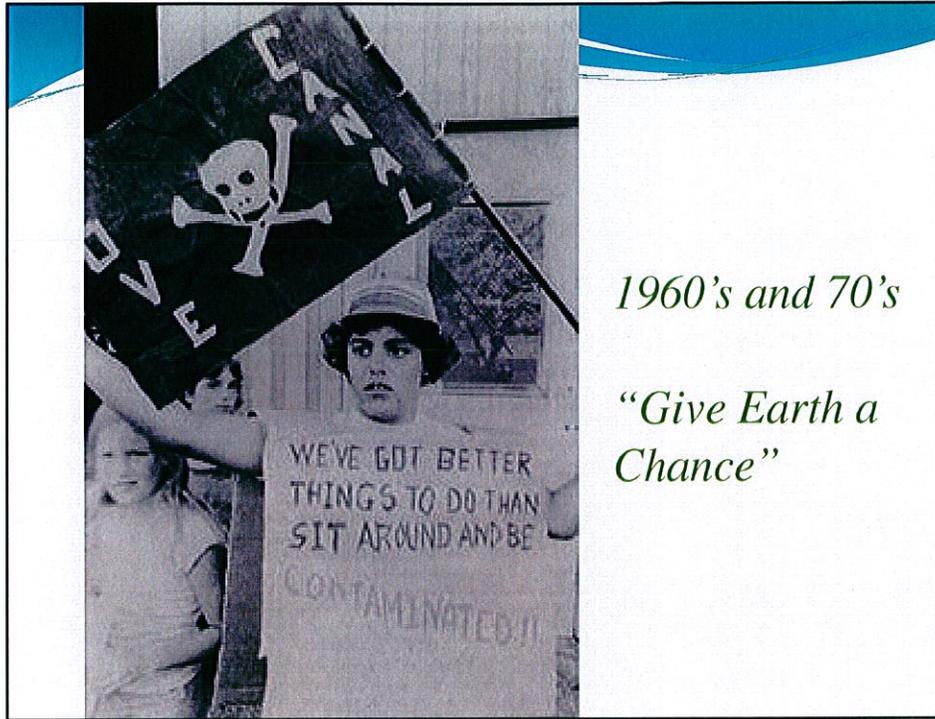
- The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) says a pesticide is -
 - “Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest” where a pest is “any insect, rodent, nematode, fungus, weed, or any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other micro-organism” – doesn’t apply to the last three on/in living men or animals

Publication of Rachel Carson's *Silent Spring*, 1962

- Carson argued that synthetic organic pesticides were under-regulated—especially with regard to minimizing chronic effects on man and the environment—and used largely by untrained persons



Photo credit: Indianapolis Star, Sunday, March 24, 1963



1960's and 70's

*"Give Earth a
Chance"*

The Wisconsin DDT Hearing

- In 1968, Wisconsin DNR was petitioned to determine if DDT was a water pollutant under Wisconsin water quality standards.
- The petitioners were represented by EDF.
- Intervenors were represented by NACA.
- In May, 1969, the examiner found for the petitioners—after legislative action ended DDT use in Wisconsin.

Richard Nixon and the United States EPA

- Created EPA under Reorganization Plan No. 3 in 1970.
- Established a single, independent federal agency as the focal point for environmental concerns.



Photo credit: US EPA History Office

Chlorinated Hydrocarbon Insecticides begin phase-out

- In early 70s, DDT was found as a contaminant in other pesticide products.
- Chlordane, Aldrin, Dieldrin, Heptachlor, Lindane & many others persisted in environment & fatty tissues



Difficult Transition from Hydrocarbon Insecticides to Organophosphates (OP)

- Toxicity concerns moved from chronic to acute
- Growers and homeowners used the OPs in same fashion as DDT.



Federal Insecticide, Fungicide, and Rodenticide Act, amended 1972

- Placed product registration and tolerance setting under EPA.
- Required the applicator to follow label directions.
- Classification for restricted or general use.
- States may establish EPA-approved certification programs.
- Older pesticides to be re-registered (in 4 years!!!)

EPA Office of Pesticide Programs/ Operations Division, 1973-1975

- Certification standards published in 40 CFR part 171, 1974
- State plans approved (for all but two states), 1975
- Certification training and testing implemented, 1976

Amendments – 1975

- Created Scientific Advisory Panel (SAP)
- Granted an extension on re-registration
- “Data Crisis” arose due to lack of clear call-in authority

Amendments -- 1978

- Made important refinements to FIFRA
- Conditional registration authority
- States have primacy for enforcement
- Data call-in authority under 3c2B
- Minor uses given special consideration
- Dropped specific deadline for reregistration

Amendments - 1988

- Sometimes called FIFRA "Lite"
- Congress determined to make reregistration happen - this time with a 9 year target
- Provided for maintenance fees to support additional EPA resources.
- Resulted in huge data call-ins (>16,000 studies came in) and many volunteer cancellations

Amendments – 1996 (FQPA)

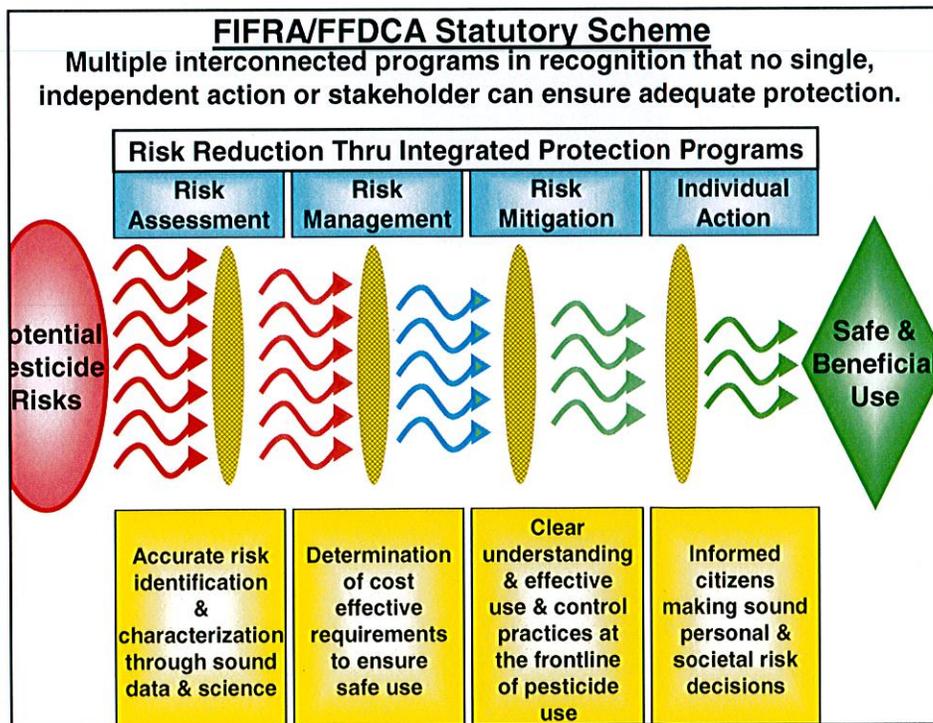
- Amends both FIFRA and FFDCA
- Passed House and Senate unanimously Aug 3, 1996
- Single, health-based standard for both raw and processed food
- Delaney paradox eliminated
- Total tolerance reassessment and new standards to apply to them
- Radical changes to risk assessment
 - aggregate; cumulative; endocrine; children's safety factor

Amendments 2004 (PRIA)

- Pesticide Registration Improvement Act
- Biggest change since FQPA
- 10 year effort by EPA, registrants, & public interest groups
- In effect March 23, 2004
- New revenue source for Reg/Rereg
- Expects to generate \$15-20 mil/yr (approx 40% of OPP's review cost)

Amendments 2007 & 2012

- PRIA amended twice to authorize the fee collection provisions. The current reauthorization extends to 2017, with reduced fees extending to 2019.



Registration Review

- FIFRA 3(g)-Review each pesticide's registration every 15 years
- Effective Oct 06
- Provides Continuous Process

What Makes FIFRA Unique?

- CAA, CWA, CERCLA, EPCRA, RCRA, SDWA + several more.
- FIFRA is a licensing program – regulates products, not pollutants
- Two statutes – one risk-benefit, the other health-based
- Strong authority to collect scientific data
- Cutting-edge science, used world-wide
- FIFRA Regulators manage and oversee the purposeful introduction of toxicants into the environment!
- States are the primary enforcer – pesticide label is the law

FIFRA Regulations Pending

- Worker Protection Standards
- Certification & Training of Pesticide Applicators
- Pesticides & Water Quality (Currently collecting Water Quality Data)
- Endangered Species Protection

Current Items of Interest to Regulators

- Pollinator Protection
- Fracking (EPA registered biocides are used in the process)
- Distributor Labels (significant # of misbranded products)
- Pesticide Imports
- Bedbug Control (Misuse of pesticides)
- Efficacy of Hospital Disinfectants



1910- 2013

- The US has been regulating pesticides for 103 years and is still evolving the process.

THE END