

Rachel's Environment & Health News

#61 - Dangers Of Radiation Are Now Increasing In Municipal Waste

January 24, 1988

The manufacture of pesticides is an ideal business: once a nation's farmers start using toxic chemicals for pest control, the need for new chemical pesticides is endless. Nature requires growers to constantly increase their use of chemicals and it requires chemists to develop new poisons continuously. Here's how it works:

Pests (whether they be insects, bacteria or other forms of life), like all living things, undergo random genetic mutations. Each generation of new pests contains a few members with new characteristics. The vast majority of these new characteristics are not beneficial and the odd creatures usually die out. But once in a while an odd one is born with beneficial characteristics, such as the ability to withstand a killer chemical. This creature has what's known as "resistance"--it resists damage from Toxaphene or Temik, or any of the other 50,000 pesticides now in use.

The resistant creatures grow and thrive. They produce offspring, some of whom who are also resistant, and within a decade or two (or less), huge numbers of resistant creatures have developed. The grower has to apply more and more chemical, with less and less success. Eventually that pesticide is no longer effective against those pests, so chemists have to develop a new killer chemical to attack that particular species. For a time the new chemical may be effective, but then "natural selection" will produce a breed of pests resistant to the new chemical, so chemists have to produce a new killer chemical, and on and on. There can never be an end to this vicious circle, so long as the nation's growers refuse to try to get along without killer chemicals.

There are 1500 toxic "active ingredients" registered for use in pesticides. These are mixed in different proportions with "inert ingredients," giving us 50,000 different individual chemical pesticides. The U.S. General Accounting Office (the investigative arm of Congress) reported in 1986 that none of the 1500 active ingredients have been adequately tested for health effects and environmental effects. EPA (U.S. Environmental Protection Agency), which has responsibility for protecting the public from pesticides, estimates that we will reach the 21st century before they have assessed the health and environmental effects of today's pesticides.

Today about 1.25 billion pounds of pesticides are intentionally spread into the environment each year by Americans (75% of it by growers, the remainder by commercial institutions, governments, and householders). Between 1964 and 1985, pesticide use on American farms increased 170%. In 1984, 63% of pesticides were herbicides, 10% were fungicides, and the remainder (27%) were insecticides. Growers spent \$5 billion on pesticides in 1984.

The National Academy of Sciences during 1985 and 1986 looked at pesticide use on U.S. food crops, trying to get a handle on some of the health risks. A total of 289 active ingredients are used on food crops and, of these, the EPA has identified 53 as oncogenic (they cause tumors in animals or humans). (This does not mean only 53 of 289 were oncogenic; the EPA has not collected adequate oncogenicity data on 88 chemicals registered before 1980.)

The Academy reported that 62% of all herbicides now in use are oncogenic; 90% of all fungicides in use are oncogenic. The Academy did not report a comparable figure for insecticides but said it was "low."

The Academy then estimated that about 20,000 cancers per year are caused by exposure of Americans to pesticides on food. The Academy did not try to estimate other health damage caused by exposure to pesticides, nor did they concern themselves with environmental effects (contamination and loss of fish, birds, molluscs, or other living things).

Most U.S. pesticide use (85% of herbicides, 70% of insecticides) occurs on four crops: corn, cotton, soybeans, and wheat. Ironically, these crops are produced in much larger quantities than needed. For

example, in 1986, U.S. farmers planted 40% more corn than needed and 30% more wheat than needed; the government bought these crops and put them into storage.

Dr. Barry Commoner and associates have carried out full-scale farming experiments, demonstrating that dramatic reduction in the use of farm chemicals is entirely possible, without loss in productivity. As with so much else in our economy, American farming seems hooked on hazardous chemicals in ways that are destructive, irrational, and not necessary.

For further information, contact: Dr. Barry Commoner, Center for the Biology of Natural Systems, Queens College, Flushing, NY 11367; phone (718) 670-4182. Information in this article from: William Reilly and others, STATE OF THE ENVIRONMENT: A VIEW TOWARD THE NINETIES (Washington, DC: Conservation Foundation [1250 24th St., NW, Washington, DC 20037; phone: (202) 293-4800], 1987; \$19.95 per copy; and from: Ray Thornton and others, REGULATING PESTICIDES IN FOOD, (Washington, DC: National Academy Press [2101 Constitution Ave., NW, Washington, DC 20418; phone (202) 334-2665], 1987; \$19.95 per copy.

--Peter Montague

=====

MOTHERS EATING GREAT LAKES FISH BEAR INFANTS SHOWING PCB EFFECTS

A study of 313 infants born in Michigan hospitals reveals that mothers eating fish from the Great Lakes have a shortened gestation period and produce babies that are shorter, weigh less, have smaller heads, and suffer from behavioral disorders in their reflexes at birth. Women in the "high exposure" category ate about 14 pounds of Great Lakes fish per year for six years or more. (Average fish consumption in the U.S. is 17 pounds per person per year.)

The culprit in the Great Lakes is PCBs, or polychlorinated biphenyls, which contaminate all fish in the Great Lakes (and, indeed, in many other bodies of water, such as the coastal oceans). PCBs enter the Great Lakes principally as air pollution. Historically, PCBs have been poured on the ground and left to evaporate slowly into the atmosphere. Later, they are brought back to earth by rain.

The study of Michigan women and their babies is: Greta Fein and others, INTRAUTERINE EXPOSURE OF HUMANS TO PCBs; NEWBORN EFFECTS (Duluth, MN: U.S. Environmental Protection Agency, Environmental Research Laboratory, 1984); available for \$13.95 from: National Technical Information Service (NTIS), Springfield, VA 22161; phone (703) 487-4600. Ask for publication No. PB8418-888-7.

--Peter Montague

=====

Descriptor terms: pcbs; death; death statistics; fish; great lakes; birth defects; developmental disorders; mi; water contamination; water; health; health statistics; epa; studies; findings; regulation; health; investigations; pesticides; chemical production; farms; agriculture; farmers; herbicides; toxaphene; temik; toxicity; studies; congress; gao; health statistics; health; epa; fungicides; national academy of sciences; carcinogens; cancer; disease; disease statistics; food; barry commoner; william reilly; ray thornton;