

# Agriculture & Pesticides Facts

## A BRIEF HISTORY OF AGRICULTURAL PESTICIDES

Humans have attempted to control pests for ages. For example, historical records indicate that the Romans used common salt to control unwanted vegetation.



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Prior to World War II, most of the products used to kill pests were inorganic in nature. Several of these contained a toxic heavy metal such as lead, arsenic or mercury. Because of the long-term risk to human health they pose, products containing heavy metals have been banned. A few inorganic elements continue to be used as pesticides in very limited applications (e.g., boron in ant bait).

In the decades following World War II, the use of man-made organic pesticides in agriculture increased rapidly, as insecticides, such as DDT, and herbicides, such as 2,4-D and atrazine, gained acceptance.

### **THESE EARLY PESTICIDES HAD A NUMBER OF CHARACTERISTICS THAT CONTRIBUTED TO THEIR POPULARITY:**

- they controlled a wide range of pests
- they were inexpensive
- most provided long-lasting control (2,4-D did not)
- their acute toxicity to the humans was moderate or low.

### **OVER TIME, HOWEVER, THE DETRIMENTAL ASPECTS OF THESE SAME CHARACTERISTICS BECAME APPARENT:**

- some pests developed resistance to some of the pesticides that were used most widely and repeatedly (e.g., DDT and atrazine)
- residues of some persistent pesticides (e.g., DDT) built up in the bodies of animals which consumed them through a process called bio-magnification, raising concerns about adverse effects on the health of humans and many species of wildlife
- some other persistent pesticides were prone to leaching and have contaminated groundwater under some conditions (e. g., where there was long-term use on sandy soils).

In the late 1960s and early 1970s, the pesticides that posed the greatest risk to human health or to the environment were banned throughout North America and in many other countries throughout the world.

### **RELATIVE TO 30 OR 40 YEARS AGO, THE PESTICIDES IN USE TODAY ARE:**

- much more thoroughly evaluated for potential adverse effects on human health or on the environment
- less likely to affect the environment adversely
- less likely to cause chronic health problems
- less persistent
- not prone to bio-magnification
- more diverse chemically and in their modes of action
- more active chemically, allowing them to be applied at lower rates (e.g., grams per hectare rather than kilograms)