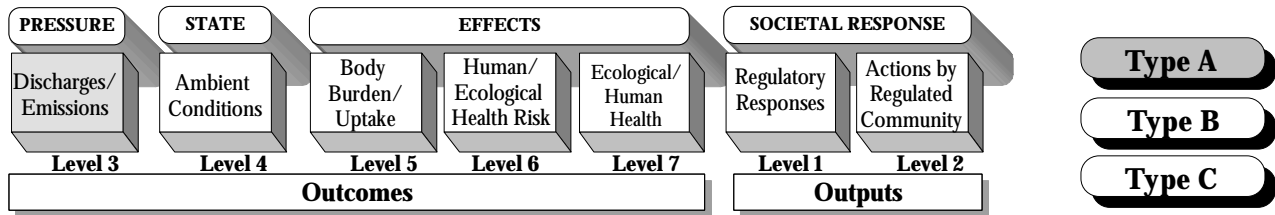


CHEMICAL AND PESTICIDE SAFETY AND USE

SAFER CHEMICALS AND PESTICIDES



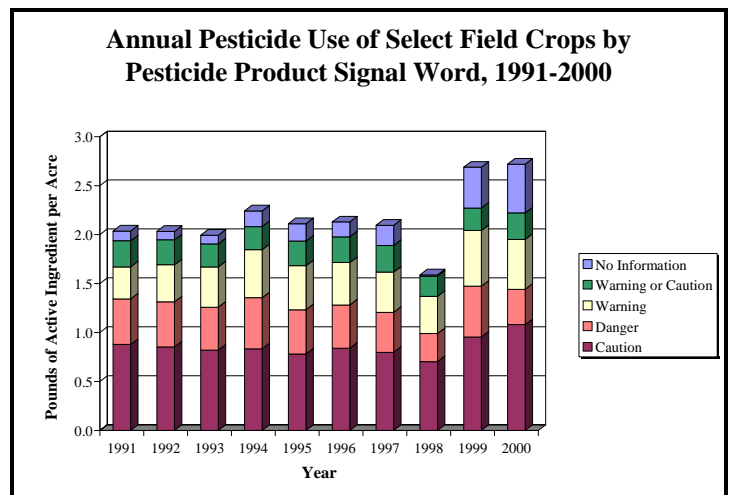
Indicator: Annual Pesticide Use on Select Field Crops by Pesticide Product Signal Word

Over the past 50 years, the use of pesticides has increased faster than that of any other agricultural production input. Chemical control of weeds, insects, fungi and rodents has contributed to the maintenance of high agricultural productivity levels in this country. These economic gains are not without their trade-offs. There are many public health and environmental concerns regarding the widespread use of pesticides in U.S. agriculture. There is the issue of human health risks due to pesticide residues on food and in drinking water, and farm worker exposures. There are also many cases where pesticides have adversely affected wildlife and sensitive ecosystems.

For these reasons, it is important to monitor the agricultural usage of pesticides. The U.S. Department of Agriculture (USDA) is charged with monitoring the usage of pesticides on field crops, fruits, vegetables and for livestock and general farm uses. Every year, the USDA National Agricultural Statistics Service (NASS) administers the Agricultural Resources Management Survey (ARMS) to a sample of farmers. Information on pesticide usage on field crops is obtained through this annual survey.

A signal word is included on the product label for all farm chemicals. The three signal words are CAUTION (slightly toxic or relatively non-toxic), WARNING (moderately toxic), or DANGER (highly toxic). Since the formulations of active ingredients can vary among products, there are instances in which an active ingredient may have more than one signal word. This indicator measures agricultural pesticide usage by pesticide product signal word. This indicator does not explicitly consider the risk to human or environmental health posed by each of the pesticides used. However, because these signal words are derived from the acute toxicity classifications of each active ingredient, they can be inferred to be proxy measures of the toxicity of pesticides applied.

- The chart shows that active ingredients with the signal word CAUTION represent the largest share of pesticide usage on field crops in the U.S. The pounds of these chemicals applied steadily decreased from 0.87 in 1991 to 0.70 in 1998. The rate increased, however, in 1999 to 0.95 lbs. per acre and in 2000 to 1.08 lbs. per acre.
- DANGER and WARNING chemicals were used at the next highest rates. The use of DANGER chemicals decreased from 0.52 lbs. per acre in 1999 to 0.36 lbs. per acre in 2000. The use of WARNING chemicals decreased from 0.57 lbs. per acre in 1999 to 0.51 lbs. per acre in 2000.
- Overall, the share of each signal word of all pesticide active ingredients applied has remained fairly constant.



Notes: Select field crops include corn, upland cotton, fall potatoes, soybeans and winter wheat.

Source: USDA NASS, Field Crop Summaries for 1991-2000

Data Characteristics and Limitations: Every year, the USDA NASS administers the ARMS to a sample of farms that produce the crops of interest that particular year. Although the list of the crops of interest varies from year to year, this indicator tracks pesticide usage on the five field crops that have been surveyed every year (corn, upland cotton, fall potatoes, soybeans and winter wheat). This is to ensure comparability of the data over time. The operator of the sampled farm is personally interviewed by NASS staff to obtain information about chemical applications on the selected field. The survey and the sampling scheme are designed so that the usage estimates are statistically representative of chemical use on the targeted crops in the surveyed states. The estimates are reviewed for reliability and consistency.

References

U.S. Department of Agriculture, National Agricultural Statistics Service (NASS), Agricultural Statistics Board. *Agricultural Chemical Usage, Field Crop Summary* (1991-2000). 7 January 2003. Available online at: <http://www.usda.gov/nass>.

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