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WASHINGTON, D.C. 20548

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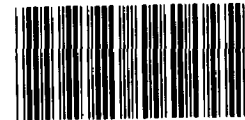
COMMUNITY AND ECONOMIC
DEVELOPMENT DIVISION

B-199618

SEPTEMBER 30, 1980

The Honorable Douglas M. Costle
Administrator, Environmental
Protection Agency

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Subject: Need for Comprehensive Pesticide Use
Data (CED-80-145)

Dear Mr. Costle:

The Environmental Protection Agency (EPA) and others have recognized the need for EPA to have accurate and comprehensive information on pesticide usage. 1/ By knowing how much of a pesticide is used for agriculture, forestry, residential, and commercial purposes, EPA can better assess the pesticide's potential risks and benefits to humans and the environment and improve the overall management of its pesticide programs.

Our review of information on pesticides used in the urban environment showed an overall lack of data on the amounts and kinds of pesticides used. Although EPA has various sources of information on pesticide usage, each source has its limitations. For example, some sources cover only major agricultural pesticides; some provide inaccurate estimates of pesticide usage; and others provide information only on certain broad classes or use categories of pesticides. However, we identified one source of pesticide data--use estimates from pesticide producers--that is relatively untapped and could contribute significantly to improving the quality and quantity of use data available to EPA and others.

Because of its importance to EPA's pesticide activities, we believe EPA needs to obtain comprehensive pesticide usage data. This information should include producer estimates of

1/Information on the sites of pesticide application; for example, crops, commodities, homes, gardens, etc.; the specific pesticides that are applied at these sites; and the extent of use--both in terms of the total area where pesticides are applied and the amounts of active ingredient for each use.

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pesticide uses. We also believe that the pesticide industry should participate in developing the collection methods and scope of reporting requirements of these producer estimates.

As part of our review of the adequacy of EPA's regulation of pesticides used in and around the home and urban environment, we examined sources of pesticide usage information at EPA, other Federal and State agencies, and private organizations. From this information we tried to determine what pesticides are used in the home and urban environment, how frequently, and in what form. Our original objective was to use this information to develop pesticide exposure patterns of various groups of the general population. Because of limitations in pesticide usage data, which we will detail in this report, we were unable to develop adequate data for exposure assessments. This report, therefore, addresses the kind of pesticide usage data available now and the need and procedures for obtaining additional data.

We conducted our review at EPA headquarters in Washington, D.C., where we interviewed pesticide program, legal, and enforcement officials who collect and use pesticide data and examined pertinent legislation, regulations, and documents. We also interviewed officials of the Department of Agriculture (USDA) who survey and develop farmers' pesticide use estimates, two pesticide industry trade associations, and private pest management consulting and data services firms.

PESTICIDE REGULATION AND RELATED PROGRAMS

EPA is the primary regulator of pesticides. Its authority is contained in the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. 136 et seq.), as amended, and the Federal Food, Drug, and Cosmetic Act (FFDCA) of 1938 (21 U.S.C. 301 et seq.), as amended. Under FIFRA, a pesticide generally cannot be sold, shipped, or delivered unless EPA has registered it. FIFRA further provides that EPA can unconditionally register a pesticide only if it determines that, among other things, the pesticide will perform its intended function without causing "* * * any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide."

EPA's pesticide regulatory program focuses on registration of new pesticides, development of registration standards, and a special pesticide review program called rebuttable presumption against registration (RPAR). EPA also conducts pesticide research, monitoring, enforcement, and training programs, many of which involve cooperation with States and other Federal agencies.

PESTICIDE USE DATA IS IMPORTANT
TO ALL PESTICIDE PROGRAMS

EPA needs information about where pesticides are used and in what quantities to administer all its pesticide programs. To determine a pesticide's risk to man and the environment, EPA needs information on exposure or potential exposure. Also, pesticide use data is important in balancing a pesticide's health and environmental risks against its economic benefits--which is at the heart of pesticide regulation.

Regulatory activities

A 1975 National Academy of Sciences (NAS) report 1/ on contemporary pest control practices and prospects underscored the need for pesticide use information for regulatory programs. The report stated:

"All analyses of the risks and benefits with pest control practices must ultimately rely on a knowledge of their use patterns. It is ironic that the importance of these use patterns is matched by such a paucity of information about them."

More recently, in a 1980 report 2/ on EPA pesticide regulatory programs, we discussed the importance of pesticide use data. Our report specifically noted that:

1/ "Pest Control: An Assessment of Present and Alternative Technologies Volume 1 Contemporary Pest Control Practices and Prospects: The Report of the Executive Committee," National Academy of Sciences, Washington, D.C., 1975.

2/ "Delays and Unresolved Issues Plague New Pesticide Protection Programs" (CED-80-32, Feb. 15, 1980).

- Information on exposure is important to both the RPAR and registration standards programs because (1) a hazardous pesticide with wide use is more dangerous than an equally hazardous pesticide with limited use, and (2) RPAR decisions aimed at reducing risk often involve reducing pesticide exposure.
- EPA did not have a system for setting a priority for registration standards or for analyzing the highest risk pesticides first under the RPAR program. Furthermore, EPA should rank pesticides, taking into account such factors as a chemical's toxicity and public and environmental exposure.
- RPAR benefit analyses also rely on pesticide usage data, but our review of benefit analyses for two pesticides showed that these benefit estimates relied on imprecise data and assumptions which were subjective and not fully explained.

In commenting on our report, EPA agreed that risk/benefit decisions depend heavily on exposure assessments. With regard to the ranking of pesticides, EPA stated that it had initiated an approach of comparative assessments within use clusters, which will enable it to consider the risks and benefits of pesticides that may be used as alternatives to pesticides with uses found to be unacceptable. Because this new ranking approach would require evaluations of many individual pesticides concurrently, the need for accurate, comprehensive use data would be accentuated.

Pesticide monitoring

In its 1975 review concerning pesticide monitoring programs, 1/ NAS linked a monitoring strategy to the need for data on the production and use of pesticides and noted that "agencies responsible for monitoring have apparently made little effort to specify their needs for production and use data." Likewise, in February 1978 hearings before the

1/ "Pest Control: An Assessment of Present and Alternative Technologies Volume 1 Contemporary Pest Control Practices and Prospects: The Report of the Executive Committee," National Academy of Sciences, Washington, D.C., 1975.

Subcommittee on Oversight and Investigations, House Committee on Agriculture, the Commissioner of the Food and Drug Administration (FDA) testified:

"I think a major deficiency in these (food monitoring) programs is the general absence of intelligence on actual pesticide usage, production practices, and changes in food consumption patterns."

EPA is in the process of developing a national pesticide monitoring program but as of mid-September 1980, had not finalized it. Presently, EPA collects pesticide residue information from air, water, soil, bottom sediment, human fatty tissue, blood, and urine samples. The proposed national pesticide monitoring program would provide a framework for obtaining, sampling, and assessing this data from Federal, State, and local monitoring programs. Therefore, accurate, reliable pesticide use data would be very useful in the proposed monitoring program to identify high use pesticides and assist in setting priorities for monitoring.

Other activities

A variety of other EPA activities and other agencies with pesticide activities also need pesticide use data.

--Research. In a May 1980 report, the EPA Research Committee on Pesticides stated that developing techniques for measuring human and habitat exposure was among the highest research priorities. Because pesticide use provides the opportunity for exposure, pesticide usage data could provide information on the population groups exposed and the amounts and means of exposure, such as inhalation, absorption through the skin, or ingestion.

--Enforcement. EPA's pesticide program enforcement strategy is to ensure (1) industry compliance with product registration requirements and (2) user compliance with label directions. To attain these goals, EPA engages in producer establishment inspections, pesticide sampling, pesticide analysis, use surveillance, and legal action against violators. Pesticide usage data is needed for use surveillance.

In carrying out State enforcement programs, Florida officials are conducting comprehensive

pesticide use surveys of all types of pesticide users, such as farmers, homeowners, and commercial applicators. California, on the other hand, requires farmers and commercial pesticide applicators to report pesticide use directly to the State for a select group of pesticides.

--Cooperation with other Federal agencies. FDA is responsible for assuring that all food marketed in the United States meets FFDCa residue requirements. To meet this responsibility, FDA conducts two kinds of monitoring programs for pesticide residues on food:

- (1) monitoring and pesticide residue analysis of high production, raw agricultural commodities and
- (2) pesticide residue analysis of prepared foods from "market basket samples" which represent the entire 14-day diet for two groups (adult and infant/child).

As noted on page 5, the FDA Commissioner stated that FDA needs pesticide usage data to structure its monitoring programs.

Also, the EPA Deputy Assistant Administrator for Pesticide Programs told us that the National Institute for Occupational Safety and Health (NIOSH) requested information on total pesticide production data, but EPA was unable to provide it. According to the NIOSH Director of the Office of Extramural Coordination and Special Projects, NIOSH needs this data for its research, standards development, and disease and hazard assessment programs and for setting priorities. This information is important to protect the health of workers who formulate and manufacture pesticides.

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EXISTING SOURCES OF DATA ARE NOT ADEQUATE

EPA currently obtains pesticide use data from a variety of sources, including private reporting services and USDA surveys. Data obtained from such sources, however, often is not comprehensive and sometimes is not accurate. Data on pesticides used in the home and urban environment is particularly incomplete.

Private reporting services

These consulting services generally supply EPA with estimates on major agricultural pesticides. However, the information provided usually does not cover nonagricultural pesticides and the estimates often combine use data of several pesticides, making it difficult to determine usage of individual pesticides. Because regulatory programs deal with all uses of individual pesticides, these sources are of limited value.

USDA surveys

USDA surveys are another source of pesticide usage information. USDA surveys farmers about every 5 years to determine, among other things, how much of a particular pesticide they used. In its 1975 report, NAS said that although these surveys are useful to scientists and other pesticide reviewers, they are published too slowly and they cover only pesticides used in agriculture.

USDA and EPA officials who work with pesticide usage data told us that these surveys can produce inaccurate estimates of an agricultural pesticide's total volume. These officials said that, because of the standard nature of sampling, nationwide totals of pesticides which are not commonly used can be overstated or understated by 50 to 100 percent. Also, because the surveys are taken only about every 5 years, the resulting data usually is not current.

Home and urban use of pesticides

Information on pesticides used in the home and urban environment is difficult to obtain and sometimes inaccurate. For example, in 1976 NAS reported its attempt to obtain accurate data on the quantities of pesticides used for public health purposes, such as mosquito control, but was unable to do so. Also, when we attempted to obtain information on the use of the pesticide chlordane, which is commonly used for termite control in residential construction, we found that two separate EPA reports published in August 1976 contained two estimates. One report estimated that 68 percent of all chlordane used was for termite control, whereas the other report estimated that only 35 percent of the total chlordane used was for termite control.

An EPA economist familiar with the lack of data on pesticides used in the home and urban environment told us that this situation results because many pesticides used in the home and urban environment are considered minor-use products and therefore are not reported or considered in available sources. However, significant amounts of pesticides are used for nonagricultural purposes. A 1978 USDA report on farmers' use of pesticides estimated that farmers use only 65 percent of all pesticides. Examining overall pesticide usage, an EPA report 1/ in 1972 noted:

"It is truly surprising that, at the same time, almost no attention has been paid to the fate and disposal of the other 500 million pounds of pesticide which constitute the balance between total production and farm use."

The report further stated, "It is obvious that such information (pesticide use quantities and types) is much needed for an assessment of the total pesticide problem * * *."

EPA is planning to develop another source of pesticide usage data--surveys of urban, nonagricultural users of pesticides. The Chief of EPA's Economic Analysis Branch, which is responsible for gathering the data, said that EPA has recently participated in a pilot survey in Florida using retired persons to collect pesticide use information directly from users. This survey was very successful according to the official, and EPA plans to expand the survey nationwide and perform it every 3 or 4 years. Although these planned surveys are important in supplying needed data, we noted that they will cover only nonagricultural pesticides and may suffer from some of the same limitations as USDA surveys.

PESTICIDE PRODUCERS: AN AUTHORITATIVE
SOURCE OF USAGE DATA

During our review we questioned whether producers were a knowledgeable and appropriate source of pesticide usage data. The EPA Chief of the Economic Analysis Branch and the USDA Section Leader of Economics of Pesticide Regulation told us that while EPA does not routinely obtain usage data

1/"The Use of Pesticides in Suburban Homes and Gardens and Their Impact on the Aquatic Environment," Pesticide Study Series - 2, EPA, Office of Water Programs, May 1972.

from producers, on occasion such information has been requested and received, especially in conjunction with the RPAR process. The USDA official pointed out, however, that industry data is often obtained after the initial benefit analysis is complete; therefore, USDA has to revise its benefit analysis. He stated that it would be more efficient if producers routinely provided such data to EPA. The EPA official also noted that some companies may not know precisely where their products are used. Furthermore, both officials pointed out that this information is confidential.

In a 1975 report entitled "Principles for Evaluating Chemicals in the Environment," NAS specifically noted the value of producer use estimates. The report stated:

"Data on uses and use patterns are required to determine exposure levels resulting from normal use and to follow the chemical through its next stage of life. Use data should be obtained from the manufacturer of a specific product or from the distributor for a specific market. The reporting procedure should be worked out to assure response by all manufacturers.

"There are many dimensions that would be useful in characterizing the types of use information that should be reported. One categorization might be according to types of uses. There are many possible breakdowns from the very general (e.g., household, industrial, construction, etc.) to the fairly specific * * *. The panel * * * does feel that development of a categorization would be consistent with the purposes of the committee's approach to qualitative determination of exposure levels."

PESTICIDE PRODUCERS PRESENTLY REQUIRED
TO REPORT ANNUALLY TO EPA

FIFRA (sec. 7), Registration of Establishments, requires pesticide producers to submit annually to EPA information concerning production and sales of their products (or active ingredients), as required by EPA. FIFRA further requires EPA to protect any confidential information from public disclosure.

EPA's implementing regulations require producers to submit information on registered pesticides produced, such as the amount sold, the chemical names for each of the product's active ingredients, and the percentage of each active ingredient by weight. EPA does not require pesticide producers to estimate the usage of the pesticide in this report, but in our opinion it has the authority to do so.

The EPA Deputy Assistant Administrator for Pesticide Programs told us that for several years various EPA pesticide officials have recognized the value of production information obtained under section 7 for pesticide program activities. He further stated that, unfortunately, section 7 reporting requirements are under the jurisdiction of EPA enforcement officials and the information obtained is not collected, coded, or edited in a manner useful to pesticide program officials. The Deputy Assistant Administrator agreed that section 7 requirements could and should be modified to meet pesticide program needs. He also observed that pesticide usage data from producers would complement and serve as a check for EPA's planned nationwide users survey.

We also discussed the matter with representatives of two pesticide trade associations. One association's representative agreed that pesticide manufacturers can supply EPA with reliable estimates of their products' usage. He also said that by using producers' information in conjunction with information EPA presently obtains from other sources, EPA would have a better basis for making difficult risk/benefit decisions on pesticides. The other association's representative was concerned that some of the smaller pesticide producers may not be able to accurately estimate pesticide usage for their products. Both representatives noted that pesticide usage estimates were derived from sales and marketing information, and therefore their confidentiality must be safeguarded.

CONCLUSIONS

[EPA does not have comprehensive information on where pesticides are used and in what quantities although such information is essential to its regulatory and other pesticide program activities.] EPA's current pesticide usage information is not sufficiently comprehensive or accurate to be used in risk/benefit analyses or for establishing priorities for major pesticide regulatory programs or other programs. Furthermore, lack of comprehensive, accurate usage data may result in too little attention being paid to areas where pesticides may pose significant risks to public health.

EPA needs to obtain comprehensive pesticide use data. Requiring producers to provide estimates of pesticide use data, when such information is used in conjunction with other sources of pesticide use information, would provide EPA with much more comprehensive information upon which to base pesticide program decisions.

We recognize that it may be difficult for some pesticide producers, especially smaller ones, to estimate product usage. Therefore, EPA needs to work with the pesticide industry to develop reporting requirements for pesticide producers to report estimates of pesticide usage annually. EPA's current annual reporting mechanism on pesticide production and sales could be modified to meet pesticide program needs and to serve as the vehicle for pesticide producers' estimates of product usage. Because EPA already safeguards currently submitted data, the confidentiality of usage data should not present problems for EPA or producers.

RECOMMENDATIONS

We recommend that the Administrator, EPA, direct pesticide program officials to obtain comprehensive pesticide use data. We also recommend that the Administrator direct enforcement officials to work with pesticide program officials to modify current reporting requirements under section 7 of FIFRA to require pesticide producers to submit data on pesticide usage. We further recommend that EPA develop collection methods and scope of producer reporting requirements in cooperation with the pesticide industry and assure the industry of safeguards to protect confidential information from public disclosure.

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As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Secretary of Agriculture; the Director, Office of Management Budget;

the four committees mentioned above; the chairmen of environment- and agriculture-related committees; and Members of Congress and other parties who have expressed an interest in pesticide regulations.

Sincerely yours,

H. Eschwege
for Henry Eschwege
Director