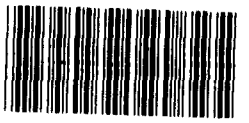
147257

United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Environment, Energy, and Natural Resources, Committee on Government Operations, House of Representatives



147257

For Release on Delivery
Expected at
9:30 a.m., EDT
Thursday
July 23, 1992

PESTICIDES

30 Years Since Silent Spring—Many Long-standing Concerns Remain

Statement of
Peter F. Guerrero, Associate Director,
Environmental Protection Issues,
Resources, Community, and Economic
Development Division

055045/147257

Mr. Chairman and Members of the Subcommittee:

Thirty years ago, in her book Silent Spring, Rachel Carson wrote about pesticides:

> "If we are going to live so intimately with these chemicals--eating and drinking them, taking them into the very marrow of our bones--we had better know something about their nature and their power."

Today, we know more about the nature of pesticides than we did in 1962, but we still know much less about them than the Congress envisioned when it overhauled the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in 1972 in response to public concern about pesticide safety. The Environmental Protection Agency's (EPA) reregistration program is a case in point: After some 20 years of collecting data to reevaluate the health and environmental effects of 19,000 older pesticide products, EPA as of March 1992 had reregistered only 2 products. Data are incomplete on most of the thousands of pesticide products currently used in agriculture and in the home. At the current pace, not until early in the next century will the federal government be able to provide assurance to the public that these pesticides are indeed safe to use.

Responsibility and accountability for protecting the public from unsafe pesticides is spread over several federal agencies, each with its own legislative mission and mandate. GAO's work has shown that federal agencies lack a strategy for systematically identifying, collecting, and managing key data needed to reduce the uncertainties associated with pesticide use.

Since our first report on pesticides some 24 years ago, we have issued over a hundred reports and testimonies dealing with pesticide regulation. (See attachment.) While the federal government has made some progress in dealing with the very difficult problem of balancing the risks and benefits of pesticides, limitations remain. Thus, some of the same concerns raised by Rachel Carson 30 years ago and raised by GAO over the last 24 years are unresolved today. They include:

-- limited progress in reviewing older pesticides in light of current scientific knowledge and standards,

-- difficulties in removing pesticides that are a cause for concern from the marketplace,

-- holes in the safety net designed to provide an early warning of pesticide dangers,

-- groundwater supplies becoming contaminated by pesticides,

-- shortcomings in the monitoring of pesticide residues on food,

-- deficiencies in notifying foreign governments about exports of pesticides that are banned or unregistered in the United States and are being sold abroad,

-- inadequate safety protection for farmworkers, and

-- the lack of a coordinated federal strategy to manage key pesticide data.

Before we discuss these concerns in greater detail, we would like to provide some background on these issues.

BACKGROUND

Pesticides are chemicals or biological substances used all over the world to destroy or control unwanted plants, insects, fungi, rodents, bacteria, and other pests. Pesticide use has doubled since the publication of Silent Spring, increasing from some 500 million pounds per year in 1964 to over 1 billion pounds in 1989. Approximately 25,000 pesticide products containing some 750 active ingredients are registered on the market today; 19,000 of these products need to be reregistered. While the agricultural sector is by far the major user of pesticides, accounting for 75 percent of the volume used, pesticides are also used in many other places, such as hospitals, restaurants, public parks, and the home.

While pesticides are recognized as an important component in meeting the increasing demand for food and in the fight against insect-borne diseases, they also have the potential to create serious problems affecting human health and the environment. In EPA's own ranking of environmental risks, exposure to pesticide residue on foods was ranked high for both cancer and noncancer risks. EPA also ranked the handling of pesticides as a high risk because exposures are often far above levels that cause health concerns. Farmworkers and other applicators are especially at risk here, and EPA cited some 350 annual poisonings from ethyl parathion alone to illustrate this point. Other problems posed by pesticides include groundwater contamination, runoff into surface waters, and air drift from spraying. EPA ranked these ecological risks high, since pesticides are designed to kill living organisms and unintended exposure could be very destructive to both the environment and the potentially large human populations exposed. EPA is responsible for balancing the risks to human health and the environment against the benefits of pesticide uses.

In 1962, the U.S. Department of Agriculture (USDA) was responsible for implementing and enforcing FIFRA, and the Pesticide Regulation Division of USDA's Agricultural Research Service registered all pesticides before their sale in interstate commerce.

Registration consisted of (1) getting USDA's approval of the label to be used on pesticide containers and (2) obtaining from the Food and Drug Administration a pesticide residue tolerance--that is, how much of a pesticide could remain on or in the raw agricultural product.

In 1962, FIFRA was fundamentally a labeling statute and the USDA was primarily concerned with protecting users from ineffective and acutely (immediately) dangerous pesticides. If the label was not judged adequate to protect the public, the product was considered misbranded and subject to seizure and cancellation. However, labeling infractions were difficult to enforce, because in enforcement proceedings the burden of proving that the product was harmful fell on USDA. Other than through enforcement proceedings, USDA had no power to deny or cancel the registration of a product that might be harmful. The Secretary of Agriculture could only notify the manufacturer that it should take certain corrective measures. The manufacturer could refuse to comply with the Secretary's recommendation and still obtain a registration.

In 1970, EPA was created by executive order and given the pesticide regulatory functions of USDA and the tolerance setting functions of FDA. EPA was not, however, given responsibility for pesticide residue monitoring, which remained with USDA and FDA. Shortly thereafter, in 1972, the Congress amended FIFRA and significantly increased EPA's authority to regulate pesticides. These amendments established an "unreasonable adverse effects" standard for registering pesticides, requiring for the first time that pesticide products have no unreasonable adverse effects on human health or the environment. The 1972 FIFRA amendments also required the Administrator of EPA to reregister all currently registered pesticides within 5 years. Manufacturers had to show EPA evidence that their pesticide products conformed to modern testing standards and had met the "unreasonable adverse effects" standard.

REGULATORY ISSUES

As consumers, we trust EPA and other federal agencies to protect us from harmful pesticides that we may apply in our home and gardens or that we may consume in the foods that we eat. But, are these agencies doing everything possible to ensure that pesticides are safe? Over the years, some 100 GAO reports and testimonies have examined various aspects of the federal government's efforts to regulate pesticides. Among the serious issues raised in these reports are the following.

Reregistration Is Not Progressing On Schedule

The pace of EPA's program to reregister older pesticides--i.e., to evaluate the health and safety of pesticides approved long before today's rigorous testing and standards were required--has

been extremely slow. Lack of a management strategy for timely completion of this effort and resource cutbacks during the 1980s contributed to this slow pace. The pesticide program reached its staffing peak in 1980 with 829 full-time EPA employees. Full-time staffing was cut to 555 by 1985; not until this year was the program back to its 1980 staffing level. A brief chronology of the reregistration program illustrates EPA's lack of progress on this important program:

-- The 1972 FIFRA amendments directed EPA to reassess older pesticide registrations against modern health and environmental testing standards and to complete this reregistration within 4 years.

-- In 1975, we questioned whether EPA's registration program was adequately protecting the public from pesticide hazards.

-- In 1978, the Congress eliminated the deadline from FIFRA due to the uncertainty in predicting how many years this task would require. Instead, the Congress required EPA to reregister all pesticides as expeditiously as possible.

-- In 1980, we reported that the reregistration program was costly and time-consuming, was progressing slowly, and was jeopardized by many basic unresolved issues, such as how EPA would reassess the safety of each of the 6,000 pesticide tolerances that had been established.

-- In 1986, we reported that, at its current pace, EPA's reassessment and reregistration efforts would extend into the 21st century because of the magnitude and complexity of the tasks involved. We provided some options for the Congress to consider, including setting deadlines for EPA's reregistration and providing EPA with additional resources through pesticide user fees.

-- In 1988, the Congress--again frustrated with EPA's delays--set a specific statutory timetable to complete pesticide reregistrations by 1997. It also established a new funding mechanism for accomplishing reregistration.

-- We are currently reviewing EPA's progress toward meeting the 1997 deadline. Our preliminary work shows that EPA has fallen behind its schedule and will likely once again miss the congressional deadline. <u>As of March 1992, some 20 years after the Congress directed EPA to reregister older pesticides, only 2 of 19,000 older pesticide products have been reregistered.</u>

Removing Unsafe Pesticides Has Proven a Lengthy Process

Until EPA completes pesticide reregistration, the health and environmental risks associated with older pesticides will not be fully known. However, EPA has a process called special review to resolve any health and environmental questions that arise in the interim. Yet, for many of these older pesticides, unresolved questions have lingered for many years and the special review process has proven incapable of resolving such concerns expeditiously. The herbicide 2,4-D is an example.

Registered in 1948, 2,4-D is an active ingredient found in over 1,500 pesticide products, including lawn care products used by homeowners. Over 60 million pounds are used annually in the United States. EPA considered a special review of 2,4-D as early as 1986 on the basis of evidence of increased cancer risk among farmers. To help the agency make a decision on 2,4-D, EPA called for additional studies of the herbicide's health effects. These tests, which normally take years to complete, are still in progress. As a result, some 6 years after serious concerns were raised regarding the widespread use of this pesticide, important safety issues remain unresolved. One could argue that EPA could have initiated its inquiry into 2,4-D much earlier than 1986. Ironically, it was Rachel Carson who raised safety concerns regarding 2,4-D some 30 years ago in Silent Spring.

To EPA's credit, 18 pesticides have been banned for use in the United States. Manufacturers have also voluntarily cancelled the registrations of 25 pesticides.

Safety Net Not Providing Early Warning As Intended

In light of the slow pace at which EPA is proceeding toward reregistering pesticides, an early warning system to identify those pesticides that pose unreasonable health and environmental risks is critical. Section 6(a)(2) of FIFRA was intended to act as such a warning system. Under this provision, registrants are required to submit information regarding unreasonable adverse effects of a pesticide. Section 6(a)(2) would, in effect, serve to flag the product for the agency's attention, allowing EPA to consider appropriate regulatory action to reduce the pesticide's risk, such as initiating a special review.

In the summer of 1991, the early warning system failed. EPA's response to the spill of metam sodium into the Sacramento River in 1991 raised serious questions about whether the agency had properly used this important provision to protect consumers and the environment from the effects of potentially dangerous pesticides. Unfortunately, our work showed, EPA (1) did not know the universe of studies that it had received from registrants under section 6(a)(2) and (2) lacked adequate tracking and data management systems to ensure these studies were appropriately identified,

reviewed, and acted upon. In this case, EPA did not know that the registrant had submitted information to the agency 4 years earlier indicating that metam sodium could cause birth defects. As a result, appropriate warnings were not given to pregnant women and others at the time of the spill.

Another hole in the safety net involves EPA's routinely granting section 18 exemptions to use unregistered pesticides without having to go through the pesticide registration process. Section 18 of FIFRA was intended to provide EPA with the flexibility to allow for the emergency use of unregistered pesticides in public health emergencies, to quarantine pests not previously known in the United States, or to prevent significant economic losses to farmers. However, widespread and repeated use of the provision has compromised EPA's registration program. By granting repeat exemptions, EPA may put companies that register pesticides--and incur the associated costs--at an economic disadvantage compared with companies that are able to sell their pesticides for uses for which they are not registered. Furthermore, such exemptions go around EPA's normal registration procedures, in which pesticides are normally assessed for their effects on human health and the environment. Since 1978, EPA and the states have granted some 4,000 emergency exemptions, many of which are reapproved year after year. One such "emergency" has now gone on for 12 years.

Protection of Groundwater Has Been Inadequate

Silent Spring raised concerns that the nation's groundwater supplies could become contaminated by pesticides. As you know, Mr. Chairman, about 40 percent of the U.S. population depends on groundwater for its drinking water; in rural areas, this percentage exceeds 90. Before the discovery of two pesticides in groundwater in 1979, little attention was paid to this problem. By 1985, EPA had confirmed 16 pesticides in groundwater, and by 1988, monitoring studies had detected a total of 46 pesticides present in groundwater as a result of normal agricultural use.

Five years after the initial 16 pesticides were identified as groundwater contaminants, we found that EPA had made limited progress in reviewing studies on the potential for these pesticides to leach into groundwater. Some studies had been awaiting review for as long as 5 years. In addition, EPA had not fully utilized the regulatory measures it had available to reduce groundwater contamination by pesticides. Such regulatory measures include cancellation of pesticide uses as well as less severe measures such as placing advisories on labels or prohibiting use in specific geographic areas vulnerable to contamination. We also found that although a person's health risk from a pesticide depends on the total amount ingested from food and water, the agency does not routinely account for exposure to pesticides in groundwater when it sets pesticide tolerances.

Foods With Illegal Pesticide Residues Are Reaching Consumers

Because of extensive use of pesticides in agriculture, residues of these pesticides on food need to be closely monitored to ensure a safe food supply. The Food and Drug Administration (FDA) is responsible for this monitoring and for removing foods with illegal residues from the marketplace. For imported food, FDA relies on the assistance of the U.S. Customs Service, which controls the points at which food shipments enter the United States, to ensure that adulterated imported food is either exported or destroyed. Monitoring imported foods is particularly important because of the increase in food imports from countries that may have less strict rules governing pesticide use.

Given the magnitude of the task, FDA has concluded that it cannot monitor all food that might contain illegal pesticide residues. Instead, FDA selectively monitors foods. The agency uses, among its targeting criteria, past experience of known or suspected pesticide misuse. In 1986, we reported that FDA's pesticide monitoring program had two major shortcomings. First, FDA did not regularly test food for a large number of pesticides that can be used or may be present in food. This testing did not take place because FDA's standard test methods detected less than half of the pesticide residues that might appear in food, and because time and resource constraints prevented the agency from selectively testing for pesticides that could not be detected by its standard methods. Second, FDA did not prevent the marketing of foods when they found the foods contained illegal pesticide residues, nor did they penalize growers who marketed foods containing illegal pesticides. These are long-standing concerns, Mr. Chairman, and ongoing work indicates these problems have not yet been adequately addressed.

Unregistered and Banned Pesticides Are Being Exported

Unregistered and banned pesticides can be manufactured in the United States and sold abroad. Under FIFRA, EPA set up a system of notifications to alert foreign governments and businesses about banned or unregistered pesticides that are made here but sold abroad. In 1978, we reported deficiencies in the notification system: Foreign governments were not receiving the required information notices. When we looked at this program again some 10 years later, things had not improved. Furthermore, EPA had established a policy that export notices were not required for unregistered pesticides similar in composition and use to registered pesticides. In our reviews of 16 companies, we found that EPA's policy allowed about 75 percent of these companies' unregistered pesticides to escape the notification requirements. The manufacturers were making this determination themselves without any EPA monitoring. There is the further concern that these pesticides could be used on produce imported into the United

States. In light of the limitations in FDA's monitoring program discussed earlier, this is perhaps not an unreasonable fear.

Farmworkers Are At Particular Risk From Exposure to Pesticides

The EPA itself has acknowledged shortcomings in farmworker safety. For example, the length of time a field sprayed with pesticides is required to be vacated is not specified for all pesticides, and reentry times for some pesticides are too short. Also, the protective clothing workers are required to wear when they reenter a sprayed area is inadequate for some of the more toxic pesticides. Furthermore, employers using pesticides are not required to provide agricultural workers with certain basic information on the pesticides used. Consequently, farmworkers may go into fields sprayed with pesticides with no knowledge of the chemicals they are exposed to or the potential health risks involved. Finally, EPA estimates that each year agricultural employees may suffer over 27,000 acute illnesses and injuries from from exposure to pesticides. Nevertheless, agricultural employers who violate EPA pesticide regulations are seldom required to pay fines, and, when fines are assessed, they are often too low to act as a deterrent.

Coordination and Data Management Are Inadequate

Federal agencies responsible for pesticides lack a coordinated strategy for systematically identifying, collecting, and managing key pesticide data. As a result, duplication of effort occurs in some cases. In other cases, important data are not available. For example, USDA reduced the sample size of its 1987-88 food consumption survey, compromising EPA's ability to calculate reliable pesticide exposure estimates for such important subpopulations as nursing infants, pregnant women, and other groups in which only a small number of people were surveyed.

Furthermore, EPA's difficulty in identifying adverse effects data in its files on metam sodium demonstrates that management information systems are not up to the task of providing needed information. Pesticide information submitted by the registrants may be scattered among nonintregrated systems or kept in paper files, preventing EPA from developing a comprehensive and reliable picture of the review status of a particular pesticide. Basic information on pesticide studies may be entered several times into different systems, or not entered at all. For example, our 1990 reviews of disinfectants showed that EPA's data systems contained inaccurate and/or incomplete data or were missing data: EPA officials reported that as much as 60 percent of the disinfectants data in one system may be inaccurate or incomplete. Rather than designing information systems to provide timely and effective management support for its critical regulatory responsibilities, EPA has focused narrowly on automating specific processes that simply track the movement of paper.

OBSERVATIONS

At the time Silent Spring was written, pesticide registration focused on efficacy--that is, the potential of the product to kill pests, and very little attention was paid to the dangers these chemicals posed to human health and the environment. Today, fortunately, the public is better informed and more concerned with safety issues, and the federal government requires the manufacturers of pesticides to do a great deal more scientific testing of their products. As a result, a number of dangerous pesticides have been identified and removed from the marketplace.

Despite these advances, EPA has made extremely slow progress in reassessing the relative safety of existing pesticides. Over the past 24 years, GAO has been critical of EPA's inability to complete this important task. Furthermore, EPA has taken too long to resolve safety concerns about certain pesticides, like 2,4-D.

Mr. Chairman, we believe that there are three root causes that contribute to these long-standing problems. The first is a lack of a clear management strategy for the pesticide program. Without sustained management attention and a plan to accomplish its goal, the federal government's pesticide programs will continue to suffer from the many problems we have highlighted in our reports over the last 24 years.

Second, EPA has historically lacked resources to accomplish its tasks. Even though EPA ranks pesticide risks as relatively high, resources were withdrawn from the program during the 1980s, and today's resources reflect no real growth over the past decade.

Third, the program is plagued with poor data management. EPA receives thousands of data submissions each year in support of new registrations, reregistrations, and potential adverse effects caused by pesticides. As a result of poor management of this data, EPA personnel have great difficulty locating, assessing, and tracking this information. Government agencies also do not coordinate their efforts to provide adequate data needed to make precise estimates of the hazards, exposures, and benefits of pesticide use.

- - - - -

Mr. Chairman, the sum total of our work points to a system that is flawed in many respects. Important questions remain despite the investment of significant resources to resolve outstanding health and environmental concerns regarding pesticide use. In reauthorizing FIFRA, the next Congress will have an opportunity to address these issues by making changes that are needed to ensure an effective federal program to regulate

pesticides. We are prepared to help you and the Congress in this regard.

Mr. Chairman, this concludes our prepared remarks. We are available to answer any questions you may have.

RELATED GAO PRODUCTS, 1968-1992

Pesticides: Comparison of U.S. and Mexican Pesticide Standards and Enforcement (GAO/RCED-92-140, June 17, 1992).

Summary Information on Farmworkers (GAO/HRD-92-30R, Apr. 10, 1992).

Pesticides: USDA's Pesticides Residue Research Project (GAO/T-RCED-92-38, Mar. 11, 1992).

Food Safety: USDA's Data Program Not Supporting Critical Pesticide Decisions (GAO/T-IMTEC-92-9, Mar. 11, 1992).

Great Lakes Fishery Commission: Actions Needed to Support an Expanded Program (GAO/NSIAD-92-108, Mar. 9, 1992).

Agricultural Chemicals to Iraq (GAO/NSIAD-92-79R, Mar. 3, 1992).

Food Safety: Difficulties in Assessing Pesticide Risks and Benefits (GAO/T-RCED-92-33, Feb. 26, 1992).

Hired Farmworkers: Health and Well-Being at Risk (GAO/HRD-92-46, Feb. 14, 1992).

Food Safety: USDA Data Program Not Supporting Critical Pesticide Decisions (GAO/IMTEC-92-11, Jan. 31, 1992).

Pesticide Monitoring: FDA's Automated Import Information System Is Incomplete (GAO/RCED-92-42, Dec. 31, 1991).

Pesticides: Better Data Can Improve the Usefulness of EPA's Benefit Assessments (GAO/RCED-92-32, Dec. 31, 1991).

Groundwater Protection: Measurement of Relative Vulnerability to Pesticide Contamination (GAO/PEMD-92-8, Oct. 31, 1991).

Pesticides: EPA's Information Systems Provide Inadequate Support for Reregistration (GAO/T-IMTEC-92-3, Oct. 30, 1991).

Pesticides: EPA Lacks Assurance That All Adverse Effects Data Have Been Reviewed (GAO/T-RCED-92-16, Oct. 30, 1991).

Reproductive and Developmental Hazards: Regulatory Actions Provide Uncertain Protection (GAO/T-PEMD-92-1, Oct. 2, 1991).

Reproductive and Developmental Toxicants: Regulatory Actions Provide Uncertain Protection (GAO/PEMD-92-3, Oct. 2, 1991).

The U.S. Export-Import Bank: No Evidence of Financing Restricted Chemical Exports to Iraq (GAO/NSIAD-91-284, Sept. 30, 1991).

Lawn Care Pesticides: EPA Needs to Assess State Notification Programs (GAO/RCED-91-208, Sept. 25, 1991).

International Food Safety: Comparison of U.S. and Codex Pesticide Standards (GAO/PEMD-91-22, Aug. 22, 1991).

Pesticides: EPA's Repeat Emergency Exemptions May Provide Potential for Abuse (GAO/T-RCED-91-83, July 23, 1991).

Pesticides: Food Consumption Data of Little Value to Estimate Some Exposures (GAO/RCED-91-125, May 22, 1991).

Pesticides: EPA and State Efforts to Ensure Safe Use of Lawn Care Pesticides (GAO/T-RCED-91-50, May 9, 1991).

EPA Should Act Promptly to Minimize Contamination of Groundwater by Pesticides (GAO/T-RCED-91-46, May 8, 1991).

Pesticides: EPA Could Do More to Minimize Groundwater Contamination (GAO/RCED-91-75, Apr. 29, 1991).

Pesticides: EPA's Use of Benefit Assessments in Regulating Pesticides (GAO/RCED-91-52, Mar. 7, 1991).

U.S. Food Exports: Five Countries' Standards and Procedures for Testing Pesticide Residues (GAO/NSIAD-91-90, Dec. 20, 1990).

EPA Lacks Assurance That Disinfectants Kill Germs (GAO/T-RCED-91-1, Oct. 2, 1990).

Disinfectants: Concerns Over the Integrity of EPA's Data Bases (GAO/RCED-90-232, Sept. 21, 1990).

Disinfectants: EPA Lacks Assurance They Work (GAO/RCED-90-139, Aug. 30, 1990).

Agriculture: USDA Needs to Better Focus Its Water Quality Responsibilities (GAO/RCED-90-162, July 23, 1990).

Food Safety: Issues USDA Should Address Before Ending Canadian Meat Inspections (GAO/RCED-90-176, July 6, 1990).

Lawn Care Pesticide Risks Remain Uncertain While Prohibited Safety Claims Continue (GAO/T-RCED-90-53, Mar. 28, 1990).

Five Latin American Countries' Controls Over the Registration and Use of Pesticides (GAO/T-RCED-90-57, Mar. 28, 1990).

Lawn Care Pesticides: Risks Remain Uncertain While Prohibited Safety Claims Continue (GAO/RCED-90-134, Mar. 23, 1990).

Food Safety and Quality: Five Countries' Efforts to Meet U.S. Requirements on Imported Produce (GAO/RCED-90-55, Mar. 22, 1990).

Creation of a Department of Environmental Protection (H.R. 3847) (GAO/T-RCED-90-25, Feb. 7, 1990).

Guidelines Needed for EPA's Tolerance Assessments of Pesticide Residues in Food (GAO/T-RCED-89-35, May 17, 1989).

Reregistration and Tolerance Reassessment Remain Incomplete for Most Pesticides (GAO/T-RCED-89-40, May 15, 1989).

Export of Unregistered Pesticides Is Not Adequately Monitored by EPA (GAO/T-RCED89-31, May 3, 1989).

Pesticides: Export of Unregistered Pesticides Is Not Adequately Monitored by EPA (GAO/RCED-89-128, Apr. 25, 1989).

Pesticides: Economic Research Service's Analyses of Proposed EPA Actions (GAO/RCED-89-75BR, Mar. 14, 1989).

Transition Series: Environmental Protection Agency Issues (GAO/OCG-89-20TR, Nov. 1988).

Agricultural Trade: Causes and Impacts of Increased Fruit and Vegetable Imports (GAO/RCED-88-149BR, May 10, 1988).

H.R. 3504: Pesticide Monitoring Improvements Act (GAO/T-RCED-88-12, Dec. 14, 1987).

Imported Meat and Livestock: Chemical Residue Detection and the Issue of Labeling (GAO/RCED-87-142, Sept. 30, 1987).

Agricultural Trade: Trends in Imports of Fruits, Vegetables, and Other Agricultural Products (GAO/RCED-87-177FS, Sept. 29, 1987).

Federal Reregistration of Pesticides and Reassessment of Tolerances Will Extend Into the 21st Century (GAO/T-RCED-87-27, June 8, 1987).

Federal Regulation of Pesticide Residues in Food (GAO/T-RCED-87-21, Apr. 30, 1987).

Pesticides: Need to Enhance FDA's Ability to Protect the Public From Illegal Residues (GAO/RCED-87-7, Oct. 27, 1986).

Food and Drug Administration: Laboratory Analysis of Produce Samples Needs to Be More Timely (GAO/HRD-86-102, Sept. 30, 1986).

Pesticides: Better Sampling and Enforcement Needed on Imported Food (GAO/RCED-86-219, Sept. 26, 1986).

Pesticides: FDA's Investigation of Imported Apple Juice Concentrate (GAO/RCED-86-214-FS, Aug. 29, 1986).

Pesticides: EPA's Formidable Task to Assess and Regulate Their Risks (GAO/RCED-86-125, Apr. 18, 1986).

Nonagricultural Pesticides: Risks and Regulation (GAO/RCED-86-97, Apr. 18, 1986).

Imported Wines: Identifying and Removing Wines Contaminated With Diethylene Glycol (GAO/RCED-86-112, Mar. 4, 1986).

Food Inspections: FDA Should Rely More on State Agencies (GAO/HRD-86-2, Feb. 18, 1986).

Information on the Forest Service's Efforts to Control the Spread of the Western Spruce Budworm in the Carson National Forest (GAO/RCED-86-8, Oct. 30, 1985).

Cost-Benefit Analysis Can Be Useful in Assessing Environmental Regulations, Despite Limitations (GAO/RCED-84-62, Apr. 6, 1984).

Monitoring and Enforcing Food Safety--An Overview of Past Studies (GAO/RCED-83-153, Sept. 9, 1983).

GAO Work Related to the Toxic Substances Control Act and the Federal Insecticide, Fungicide, and Rodenticide Act (122025, July 29, 1983).

The Department of Agriculture's Import Meat Inspection Program (122003, July 27, 1983).

Better Coordination Is Needed Between Pesticide Misuse Enforcement Programs and Programs for Certifying and Training Individuals to Apply Pesticides (GAO/RCED-83-169, July 1, 1983).

Improved Management of Import Meat Inspection Program Needed (GAO/RCED-83-81, June 15, 1983).

Changes Underway to Correct Inadequacies in Florida's Meat and Poultry Inspection Program (GAO/RCED-83-70, Dec. 30. 1982).

VA's Agent Orange Examination Program: Actions Needed to More Effectively Address Veterans' Health Concerns (GAO/HRD-83-6, Oct. 25, 1982).

Informing the Public About Food--A Strategy Is Needed for Improving Communication (GAO/CED-82-12, Jan. 8, 1982).

Stronger Enforcement Needed Against Misuse of Pesticides (GAO/CED-82-5, Oct. 15, 1981).

Grain Fumigation: A Multifaceted Issue Needing Coordinated Attention (GAO/CED-81-152, Sept. 10, 1981).

Further Federal Action Needed to Detect and Control Environmental Contamination of Food (GAO/CED-81-19, Dec. 31, 1980).

Programs for Ensuring the Safe Transportation of Hazardous Materials Need Improvement (GAO/CED-81-5, Nov. 4, 1980).

Need for Comprehensive Pesticide Use Data (GAO/CED-80-145, Sept. 30, 1980).

Need for a Formal Risk/Benefit Review of the Pesticide Chlordane (GAO/CED-80-116, Aug. 5, 1980).

Environmental Protection Agency's Procedures for Suspending a Pesticide (112250, May 1, 1980).

EPA Procedures in Suspending Uses of Pesticides (B-198288, Mar. 31, 1980).

Agent Orange (111614, Feb. 21, 1980).

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

Does Nitrite Cause Cancer? Concerns About Validity of FDA-Sponsored Study Delay Answer (GAO/HRD-80-46, Jan. 31, 1980).

Improvements Needed in USDA's Certification That Export Shipments of Grain Conform With Phytosanitary Regulations of Foreign Countries (GAO/CED-80-42, Dec. 28, 1979).

U.S. Ground Troops in South Vietnam Were in Areas Sprayed With Herbicide Orange (GAO/FPCD-80-23, Nov. 16, 1979).

Inventory of Federal Food, Nutrition and Agriculture Programs (GAO/CED-79-125, Sept. 11, 1979).

Better Regulation of Pesticide Exports and Pesticide Residues in Imported Food Is Essential (GAO/CED-79-43, June 22, 1979).

Problems in Preventing the Marketing of Raw Meat and Poultry Containing Potentially Harmful Residues (GAO/HRD-79-10, Apr. 17, 1979).

Health Effects of Exposure to Herbicide Orange in South Vietnam Should Be Resolved (GAO/CED-79-22, Apr. 6, 1979).

Environmental Protection Issues Facing the Nation (GAO/CED-79-63, Mar. 15, 1979).

Federal Efforts to Notify Foreign Nations Regarding Pesticide Suspensions and Cancellations (095402, July 11, 1978).

Federal Efforts to Notify Foreign Nations Regarding Pesticide Suspensions and Cancellations (106550, July 11, 1978).

EPA Pesticide Research Contract for Determining Pesticide Residues in Fetal Tissue (GAO/CED-78-112, May 9, 1978).

Serious Problems With EPA's Pesticide Reference Standards Program (GAO/CED-78-109, Apr. 26, 1978).

Need to Notify Foreign Nations of U.S. Pesticide Suspension and Cancellation Actions (GAO/CED-78-103, Apr. 20, 1978).

Federal Efforts to Regulate Pesticide Residues in Food (105119, Feb. 14, 1978).

Special Pesticide Registration by the Environmental Protection Agency Should Be Improved (GAO/CED-78-9, Jan. 9, 1978).

Federal Responsibilities for Insuring Safe and Pure Fish Products (105984, Nov. 3, 1977).

Working Conditions for the Specimen Handling Activity of the National Human Monitoring Program for Pesticides (B-133192, Sept. 20, 1977).

Federal Efforts to Protect Consumers From Polybrominated Biphenyl Contaminated Food Products (GAO/HRD-77-96, June 8, 1977).

Chronological Listing of GAO Food-Related Reports Issued July 1, 1975 through December 31, 1976 (101897, Jan. 1977).

Federal Efforts to Protect the Public From Cancer-Causing Chemicals Are Not Very Effective (GAO/MWD-76-59, June 16, 1976).

Adequacy of Safety and Efficacy Data Provided to EPA by Nongovernmental Laboratories (GAO/RED-76-63, Jan. 26, 1976).

Federal Pesticide Registration Program: Is It Protecting the Public and the Environment Adequately From Pesticide Hazards? (GAO/RED-76-42, Dec. 4, 1975).

The Fertilizer Situation--Past, Present, and Future (GAO/RED-76-14, Sept. 5, 1975).

Environmental Protection Agency Transfer of Pesticide Laboratories From Beltsville, Maryland, and Washington, D.C., to Cincinnati, Ohio, Should Be Reconsidered (GAO/RED-75-388, July 1, 1975).

Emergency Temporary Standards on Organophosphorous Pesticides (GAO/MWD-75-55, Feb. 24, 1975).

Answers to Questions on the Issuance of an Emergency Temporary Standard for Certain Chemicals Considered to Be Carcinogens (GAO/MWD-75-33, Jan. 6, 1975).

Questions on the Safety of the Pesticide Maleic Hydrazide Used on Potatoes and Other Crops Have Not Been Answered (GAO/RED-75-276, Oct. 23, 1974).

Pesticides: Actions Needed to Protect the Consumer From Defective Products (B-133192, May 23, 1974).

Banning of DDT by the Environmental Protection Agency and Its Refusal in 1973 to Allow Emergency Use of DDT Against the Tussock Moth (B-125053, Feb 26, 1974).

Improved Federal and State Programs Needed to Insure the Purity and Safety of Drinking Water in the United States (B-166506, Nov. 15, 1973).

Consumer Protection Would Be Increased by Improving the Administration of Intrastate Meat Plant Inspection Programs (093342, Nov. 2, 1973).

Environmental Protection Agency Efforts to Remove Hazardous Pesticides From the Channels of Trade (B-133192, Apr. 26, 1973).

Protecting the Consumer From Potentially Harmful Shellfish (Clams, Mussels, and Oysters) (B-164031[2], Mar. 29, 1973).

Need for More Guidance in Establishing Recovery Periods for Damaged Bee Colonies to More Effectively Control Payments to Beekeepers (093891, Feb. 23, 1973).

Total Diet Study and Other Pesticide and Residue Surveillance Programs (B-164031[2], Feb. 23, 1972).

Need to Resolve Questions of Safety Involving Certain Registered Uses of Lindane Pesticide Pellets (B-133192, Feb. 20, 1969).

Need to Improve Regulatory Enforcement Procedures Involving Pesticides (B-133192, Sept. 10, 1968).

Note: Copies of our more recent reports and testimonies (those issued since 1988) may be ordered by using the identification number (for example, the identification number for this testimony is GAO/T-RCED-92-77) by calling (202) 275-6241 or writing to GAO, P.O. Box 6015, Gaithersburg, MD 20877. The first copy of each GAO report or testimony is free. Additional copies are $2.00 each. There is a discount of 25 percent for orders for 100 or more copies mailed to a single address.

(160173)

Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are $2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendents of Documents, when necessary. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

U.S. General Accounting Office
P.O. Box 6015
Gaithersburg, MD 20877

Orders may also be placed by calling (202)275-6241.

United States
General Accounting Office
Washington, D.C. 20548

Official Business
Penalty for Private Use $300

First-Class Mail
Postage & Fees Paid
GAO
Permit No. G100