Federal Pesticide Laws and Regulations

Public concern about the presence of pesticides in food, drinking water, and the environment has increased in recent years. As a result, greater attention has been given to the federal, state, and local laws that regulate the use of these chemicals on the farm, in commercial establishments, and around the home. To gain a better understanding of the federal pesticide laws and regulations currently in place to protect public health and the environment, it is helpful to view their creation and development from a historical perspective.

Federal regulation of pesticides in the United States has evolved from two pieces of legislation enacted around the turn of the century; the Federal Insecticide Act of 1910 and the Federal Food and Drugs Act of 1906. These early laws were superseded by the Federal Insecticide, Fungicide, and Rodenticide Act, which regulates the sale and use of pesticides, and the Federal Food, Drug and Cosmetic Act, which controls the amount of pesticide residues allowed to be present on food. Pesticides are also subject to regulation under other federal statutes, including the Occupational Safety and Health Act, the Endangered Species Act, the Clean Water Act, the Safe Drinking Water Act, the Resource Conservation and Recovery Act, the Transportation Safety Act, and the Food, Agriculture, Conservation, and Trade Act.

The Federal Insecticide, Fungicide, and Rodenticide Act

The regulation of pesticides by the federal government began in 1910 with the passage of the Federal Insecticide Act by Congress. This act was passed in response to concerns from the United States Department of Agriculture (USDA) and farm groups about the sale of fraudulent or substandard pesticide products, which was common at the time. Thus, the first federal pesticide legislation was to ensure the quality of pesticide chemicals purchased by consumers. Specifically, the act set standards for the manufacture of Paris green, lead arsenate, insecticides, and fungicides, and also provided for inspections, seizure of adulterated or misbranded products, and prosecution of violators.

Little change in the regulation of pesticides occurred until after World War II, when the use of synthetic organic pesticides in agriculture became widespread. Because of the potential for damage to humans and wildlife by these more widely used chemicals, additional regulation of pesticides was deemed necessary by Congress. In 1947, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) was passed. This act extended the coverage of the Federal Insecticide Act to include herbicides and rodenticides and required that all pesticide products be registered with the USDA before their sale in interstate or foreign commerce. It further required that products have certain information on their labels, such as the manufacturer's name and address, a list of ingredients, directions for proper use, and warning statements to protect users, the public, and nontarget species of plants and animals. The FIFRA of 1947 served to establish labeling standards for pesticides. However, it did not provide the USDA with an effective mechanism for removing misbranded or hazardous products from the market.

The FIFRA was amended in 1959 and 1964. The 1959 amendment added nematicides, plant regulators, defoliants, and desiccants to the definition of a pesticide or "economic poison". The amendment in 1964 mandated that pesticide products have a federal registration number and that labels contain

signal words relating to the toxicity of the products (i.e., *Warning, Caution, Danger*). Also, the Secretary of Agriculture was authorized to suspend immediately registrations of pesticides believed to pose an imminent hazard to the public.

Publication of *Silent Spring* by Rachel Carson in 1962 focused public attention on the risks of pesticides such as DDT to human health and the environment, bringing about major changes in the regulation of pesticides. In 1970, the Environmental Protection Agency (EPA) was created as part of the Executive Branch of the federal government and charged with the administration of the FIFRA. Then, in 1972, the FIFRA was significantly changed under a new law titled the Federal Environmental Pesticide Control Act (FEPCA). The new law required that all pesticides (including those sold intrastate) be registered with the EPA and classified by the agency for *general* or *restricted* use. Certification was required for persons applying *restricted* use pesticides. Most importantly, FEPCA set a new registration standard for pesticides, allowing the registration of a pesticide only if it could be determined that the pesticide would not cause *unreasonable adverse effects on the environment*. With this law, the emphasis on pesticide regulation in the United States moved from quality assurance and adequate labeling of pesticide products to the protection of public health and the environment from their potential hazards.

Further amendments to the FIFRA occurred in 1975, 1978, 1980, and 1981. These amendments were designed to improve the pesticide registration process and provide for consideration of agricultural benefits of pesticides in regulatory decisions made by the EPA. The 1975 amendment required the EPA to notify the Secretary of Agriculture in advance of regulatory decisions affecting pesticides, consider the impact of pesticide cancellations on the production and costs of agricultural commodities, and establish a *Scientific Advisory Panel* to review proposed regulations. The amendment to the FIFRA in 1978 allowed the EPA, under certain circumstances, to grant conditional registrations of pesticides before all supporting data had been submitted by the registrant. This provision was intended to reduce the backlog of registration applications.

In 1975, the EPA began to review the registrations of pesticides issued before August 1975 to bring older chemicals up to current registration standards. A process called the *Rebuttable Presumption Against Registration* or *RPAR* was adopted to further review those pesticides found to pose a risk or concern. In this process (since renamed *Special Review*), the agency weighs the risks versus the benefits of a chemical in making a decision on its continued registration. During the period from 1976 to 1988, the EPA's review or reregistration of older pesticides was proceeding at a much slower pace than originally anticipated by the EPA or Congress. Thus, the FIFRA was amended again in 1988 to establish a nine-year schedule for completion of the reregistration of pesticide active ingredients registered before November 1984 and to impose substantial fees on registrants to cover much of the costs of the reregistration. Only a few pesticide registrations have been canceled or suspended by the EPA as a result of reregistration; however, thousands have been canceled voluntarily by registrants because of the fees and data requirements. Pesticide reregistration likely will continue into the beginning of the next century.

As a result of existing regulations under the FIFRA, six to nine years and $50 million or higher are required for a new pesticide active ingredient to progress from the laboratory to the marketplace. Two to three years alone are needed to obtain a complete EPA pesticide registration. Data requirements for this registration can include 70 specific tests and cost the company registering the pesticide up to $10 million.

In 1992, the EPA revised the Worker Protection Standard for Agricultural Pesticides (regulations initially issued by the agency in 1974 to protect agricultural workers from exposure to pesticides in the fields). The revisions to the worker protection standard required pesticide manufacturers to modify product labels to restrict the entry of workers into pesticide-treated areas, specify the use of personal protective equipment, and require notification of workers about areas treated with pesticides. Employers of agricultural workers and pesticide handlers were required to protect their employees by providing safety training, safety posters, pesticide health and safety information, decontamination sites, and emergency assistance when needed.

The Federal Food, Drug, and Cosmetic Act

In 1906, the Federal Food and Drugs Act or Pure Food Law was enacted by Congress and stated that fresh, canned or frozen food shipped in interstate commerce must be pure and wholesome. The law was designed to protect the public from adulterated or misbranded food, although it did not consider

pesticide residues. Responsibility for enforcement of the law was given to the Secretary of Agriculture.

The Federal Food, Drug, and Cosmetic Act (FFDCA), passed in 1938, authorized the Food and Drug Administration (FDA) to set limits or tolerances for chemicals in food to protect public health. Tolerances were established for pesticides such as lead arsenate and Paris green on food. Also, manufacturers were required to add coloring to certain pesticides to prevent them from being mistakenly used as flour. In 1954, Congress passed the Miller Amendment to the FFDCA, which required tolerances to be set for all pesticides and further required any raw agricultural commodity to be condemned as adulterated if it contained a pesticide residue above the tolerance level established by the FDA. Another amendment in 1958, called the Food Additives Amendment, extended provisions of the Miller Amendment to cover food additives (i.e., chemicals remaining in or on food after processing). Thus, processed foods that contained pesticide residues exceeding established tolerance levels were considered adulterated and subject to seizure similar to raw agricultural commodities. Included in the Food Additives Amendment was the Delaney Clause, which established a zero tolerance for food additives found to cause cancer in humans or animals.

Presently, the EPA, FDA and USDA participate in enforcing the FFDCA. The EPA establishes tolerances for pesticide residues on raw agricultural commodities and processed food during the registration process. Enforcement of these tolerances is the responsibility of the FDA and USDA. The FDA monitors pesticide residues on all domestic and imported food involved in interstate commerce, except on meat and poultry products, which are monitored by the USDA.

Other Federal Laws and Regulations

In addition to the Federal Insecticide, Fungicide, and Rodenticide Act and the Federal Food, Drug, and Cosmetic Act, a number of other federal laws regulate the use, storage, disposal and transportation of pesticides. The Occupational Safety and Health Act mandates that employers, including farmers and ranchers, protect their employees from hazards in the work place. With respect to pesticides, the law covers workers in pesticide manufacturing plants and also farmworkers applying pesticides to crops. Hazard communication standards developed by the Occupational Safety and Health Administration require employers to have a written hazard communication plan, possess a material safety data sheet (MSDS) for each hazardous chemical, and provide training for employees on protective measures. A MSDS must contain detailed information on the chemical, its hazards, and procedures to be followed in the event of an emergency.

Pesticide use is regulated by several federal laws designed to protect the environment. The Federal Endangered Species Act makes it unlawful to harm any plant or animal listed by the Fish and Wildlife Service (FWS) as *endangered* or *threatened*. The EPA, in cooperation with the USDA and the FWS, developed an Endangered Species Protection Program to protect listed species from harmful effects of pesticides. Under the program, pesticide use is restricted in areas where endangered species are likely to be exposed. Product labels instruct users to consult county bulletins specifying locations within the county where use of the products is restricted. The Clean Water Act protects the nation's waterways from both point and non-point sources of pollution. Discharges of waste products (point source pollution) are controlled by the EPA through a permit system. Amendments to the Clean Water Act in 1987 allow for restrictions on non-point source pollutants, such as runoff of agricultural chemicals. The EPA is presently requiring states to submit management plans for the control of non-point source pollution. Pesticides in drinking water falls under the jurisdiction of the Safe Drinking Water Act. This law authorizes the EPA to set maximum contaminant levels for pesticides in drinking water.

The FIFRA provides the EPA with the authority to regulate the storage and disposal of pesticides and their containers. Discarded pesticides and pesticide containers may also be considered solid waste under the Resource Conservation and Recovery Act (RCRA) if they meet certain criteria. Regulations under this law vary for *small quantity* and *large quantity* generators of hazardous waste. Farmers disposing of pesticides are exempt from RCRA regulations provided that they triple-rinse used pesticide containers and dispose of the containers according to instructions on the product label.

Under the authority of the Transportation Safety Act, the U. S. Department of Transportation (DOT) controls all modes of transportation of hazardous materials, including pesticides. DOT regulations cover the handling and shipping of hazardous materials, packing and repacking, labeling of

containers, and placarding of vehicles. Regulations affecting the transportation of pesticides are dependent on the particular hazard class or classes in which a pesticide is included.

Finally, the Food, Agriculture, Conservation, and Trade Act of 1990 mandated that the USDA require all certified applicators (i.e., private and commercial) of *restricted* use pesticides to keep records similar to those maintained by commercial applicators under the FIFRA. Records of *restricted* use pesticide applications must be kept by the certified applicators for a period of two years after application. As directed by the law, the USDA is establishing cooperative programs with the states to collect these records from certified applicators.

References

Carson, R. 1962. *Silent Spring*. Houghton Mifflin: Boston. 368 pp.

Committee on Prototype Explicit Analyses for Pesticides. 1980. *Regulating Pesticides*. National Academy of Sciences: Washington, D.C. 288 pp.

Conn, R. L., M. L. Leng, and J. R. Solga. 1984. *Pesticide Regulatory Handbook*. Executive Enterprises Publications Co., Inc.: New York. 450 pp.

Herrick, A. D. 1944. *Food Regulation and Compliance. Vol. I.* Revere Publishing Co.: New York. 646 pp.

Hinich, M. J. and R. Staelin. 1980. *Consumer Protection Legislation and the U.S. Food Industry.* Pergamon Press: New York. 134 pp.

Marco, G. J., R. M. Hollingworth, and J. R. Plimmer. 1991. *Regulation of Agrichemicals: A Driving Force in Their Evolution*. American Chemical Society: Washington, D.C. 189 pp.

National Agricultural Pesticide Impact Assessment Program (USDA). 1988. *Agricultural Benefits Derived From Pesticide Use: A Study of the Assessment Process*. Ohio State University: Columbus. 148 pp.

Olexa, M. T. 1990. *Laws Governing Use and Impact of Agricultural Chemicals: An Overview*. Circular 887. University of Florida Extension Service: Gainesville. 73 pp.

Runyan, J. L. 1993. *A Summary of the Worker Protection Standard for Agricultural Pesti cides*. Agriculture Information Bulletin No. 680. Agriculture and Rural Economy Division, Economic Research Service, U. S. Department of Agriculture. 10 pp.

Sine, C., ed. 1992. *Farm Chemicals Handbook.* Meister Publishing Co.: Willoughby, OH. 794 pp.

U. S. Environmental Protection Agency. 1991. *The Delaney Paradox and Negligible Risk.* "For Your Information" Fact Sheet. August 1991. 2 pp.

Ware, G. W. 1989. *The Pesticide Book*. Thomson Publications: Fresno, California. 308 pp.

Source

Stephen J. Toth, Jr., Pesticide Impact Assessment Specialist,
North Carolina Cooperative Extension Service

printed March 1996

Acknowledgments

This publication was developed under a project of the Southern Extension and Research Activity- Information Exchange Group 1 (Southern Region Pesticide Impact Assessment Program). Partial Funding for the publication was provided by U.S. Department of Agriculture Extension Service National Agricultural Pesticide Impact Assessment Program special project 93-EPIX-1-145.