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Pesticide regulation and the turfgrass industry| A proposed program to meet present regulatory requirements

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Pesticide Regulation and the Turfgrass Industry: A Proposed Program to Meet Present Regulatory Requirements

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CHAPTER 1

INTRODUCTION

Problem Statement and Purpose of Research

Pesticides are important to all of us because, they protect people and their environment from 10,000 species of harmful insects, 1,800 weeds, and 1,500 plant diseases. In the United States, losses because of these pests amount to more than $30 billion annually. Commerce, industry, and government spend approximately $3 billion annually on pesticides. Of this the turfgrass industry spends $30 million. The turfgrass industry may account for only 1 percent of all pesticides used in the United States, but it is one of a few industries which apply pesticides directly to the environment of the ordinary citizen. Because of this, direct application of pesticides have been subject to federal regulation since 1910.[1]

The turfgrass manager and his activities have been regulated for the past eighty years. During this time many regulations were promulgated while others were superseded by more strict and complicated laws. Most approaches to the explanation of regulatory requirements have been presented

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[1]James V. Parochetti, Ph.D., "The Importance of Using Pesticides Safely," Grounds Maintenance, August 1985, 1.

to the turfgrass manager in an individualistic manner. They have been advised on each major pesticide regulation as though there was little relationship with other pesticide regulations. The problem with this approach is that it dismisses the interrelationship of all pesticide controls.

The specific requirements set forth by federal pesticide regulation on the turfgrass industry are analyzed in this paper. Information obtained from the three major federal regulations, as they pertain to turfgrass management, are used to construct a consolidated and simpified program outline. This synthesis enables turfgrass managers to better determine proper regulatory compliance by using one source as opposed to the use of many documents and articles. This paper also provides turfgrass managers with a simplified program outline which can be used as a basis for the development of a specific program as dictated by their present turfgrass operation.

Definitions

The following definitions are provided to help the reader in understanding the subject material:

Turfgrass consists of cultivated grass areas used in and around parks, cemeteries, golf courses, homes, and commercial properties.

The Turfgrass Industry is made up of the commercial maintainers of turfgrass areas. Maintenance techniques

include mowing, aerating, seeding, pesticide applications, and the general grooming of grass areas. Industry members include sod/turfgrass farmers, lawn chemical applicators, and lawn/landscape maintenance contractors.

Pesticides are chemicals used to control unwanted plants or animals.

Research Design

This paper consists of secondary research of numerous articles and publications. The information about the regulatory effects and requirements on the turfgrass industry was obtained from the federal pesticide regulations.

Scope

This study focuses on the three major federal regulations: The Hazard Communication Standard of 1983; The Federal Insecticide, Fungicide, and Rodenticide Act of 1978; and The Resource Conservation and Recovery Act of 1976. The discussion of the requirements and effects of these regulations will be limited to their impact on the turfgrass industry. Furthermore, the turfgrass industry members addressed will be limited to major turfgrass maintenance contractors and lawn chemical applicators.

In Chapter 2, the specific requirements of the three major federal regulations which influence the turfgrass industry are investigated. Through indepth study of these

regulations, a proposed program is developed and presented in Chapter 3. Finally, Chapter 4 will present conclusions.

CHAPTER 2

PESTICIDE REGULATIONS THAT AFFECT THE TURFGRASS INDUSTRY

Starting in 1947 pesticide regulation became more strict. This was brought about by concerned citizens who used the judicial process to express a need for better evaluation and assessment of pesticide hazards. Pesticides and their effects on the environment became increasingly important to the public.

Public attention on pesticides safety and use was greatly increased by the 1962 publication of Silent Spring by Rachel Carson. Carson argued that many pesticides had unknown and cumulative affects that could be discovered only by many years of comprehensive testing. She criticized the U.S. Department of Agriculture's endorsement of increased pesticide use and alleged that many farmers exceeded prescribed tolerances. Carson's contention was: since so little was known about pesticide effects, their use should be curtailed.[2]

Carson's arguments brought about a decade of public concern. Environmental groups argued for restrictions on

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[2]Congressional Quarterly Inc., Congressional Quarterly Almanac - 92nd Congress, 2nd Session....1972, Vol. XXVII, 935.

the use of pesticides, because of evidence of damage to water, wildlife and humans. Farmers began to question the benefits of massive pesticide applications and were noting that insects were developing a tolerance to certain pesticides. Meanwhile, pesticide manufacturers argued that their products increased the nation's standard of living and that applicator misuse caused pesticide problems.[3]

To substantiate the public concern, the government initiated many scientific studies and governmental commissions. Paramount were the research projects conducted on DDT and its harmful build-up in bald eagles, falcons, fish, and other animals. Scientists also conducted studies on the accumulation of pesticides in humans. They found that many Americans carried twice the amount of pesticides in their bodies than that allowed in most foods sold in interstate commerce. The National Cancer Institute reported in 1969 that 11 of 123 pesticides tested caused increased chances of tumors in laboratory animals. Additionally, the Department of Health, Education, and Welfare concluded from a 1970 study that pesticides should be restricted to specific essential uses. Because of this concern the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1972, the first major pesticide regulation, was passed by Congress. (For a detailed explanation of the regulatory

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[3]Ibid.

process refer to Appendix 1.)[4]

Pesticide regulations have and will continue to have a direct effect on the turfgrass industry. To better understand these effects, three major federal regulations, are investigated in this paper. They are: The Hazard Communication Standard; The Federal Insecticide, Fungicide, and Rodenticide Act; and The Resource Conservation and Recovery Act.

The Hazard Communication Standard

History

The Occupational Safety and Health Administration's (OSHA) requirement to communicate work place hazards dates back to the 1970 Occupational Safety and Health Act. OSHA's traditional approach was to issue safety standards on individual substances. In its first 15 years, OSHA had issued only 20 comprehensive substance standards. Because of rapid advances in technology and accidents arising therefrom, this system was found to be inadequate. OSHA was in need of a more "generic" information standard. The result was the Hazard Communication Standard (HCS) of 1983. HCS's primary purpose was to ensure employee access to information on work place hazards. This access is better

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4Ibid., 935-6.

known as employee right-to-know .[5]

The predecessor to HCS was a proposed law known as the "Labeling Standard;" its emphasis was on container labeling. Container labels were to be the primary means of identifying and communicating hazards to employees. The "Labeling Standard" was withdrawn in February, 1981, by the Reagan administration in an effort to reduce governmental regulation. However, this was not the end of employee right-to-know actions.[6]

Shortly after the withdrawal of the "Labeling Standard" labor, consumer, environmental, and public health groups took the employee right-to-know fight to local and state governments. Their efforts resulted in the adoption of right-to-know laws by 25 state and local governments. The diversity of these laws caused industry groups to seek federal assistance in producing a uniform federal regulation. In March, 1982, the Reagan Administration proposed new rule making on "hazard communication." The conveyance of hazard information would be through Material Safety Data Sheets, supplied by chemical manufacturers. OSHA issued its final Hazard Communication Standard (HCS) in November, 1983.[7]

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[5]Patrick R. Tyson, "Employees Have a Right to Know," Management Review, April 1985, 54.

[6]Dan C. Edwards, "OSHA's Hazard Communication Standard: One Union's View," Management Review, April 1986, 57.

[7]Ibid.

Goals of the Standard

The writers of the Hazard Communication Standard set several goals which were to be met by the regulation. The Standard's central concern is employee's right-to-know. Its primary goal is to inform employees of all chemical hazards in their work place. The establishment of comprehensive hazard communication programs by all employers subject to HCS will satisfy this goal. Additionally, these programs must supply management with the means to address any new hazards entering the work place.[8]

Another goal of the standard is to ensure all employers and managers have a means to obtain current and accurate chemical hazard information. This information is necessary in order to make crucial decisions about the health of 14 million people employed by the American manufacturing sector. To add to the difficulty of meeting this goal these employees worked at 30,000 different locations with more than one half million chemical products. In order to protect employee health and meet this goal management must obtain information about the contents of all hazardous products used by their employees.[9]

The final goal of HCS was to enact a uniform federal regulation. Because of the many and widely different state

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[8]Bruce D. Fisher and Michael J. Phillips, The Legal Environment of Business (St. Paul: West Publishing Company, 1986), 248.

[9]Tyson, 54.

and local right-to-know laws, multistate employers found complying with these laws too confusing and costly. To solve this problem and supply workers the information they needed to deal with hazards in the work place, the Congress passed a more effective and less costly uniform law.[10]

The Standard

To meet these goals OSHA set forth to development a federal regulation which would address the needs of all employees. This posed enormous problems:

How could OSHA develop a comprehensive and feasible standard?

How could OSHA present highly technical information so that all employees were able to understand it?

Finally, how could OSHA incorporate the need to protect legitimate trade secrets into a standard which must make information about hazardous chemicals free and accessible?[11]

OSHA's rule making solved these problems in the following ways:

First, the standard set a base of 2,300 substances automatically considered hazardous. Included were those already regulated by OSHA and those listed by the American Conference of Governmental Industrial Hygienists. Also included were those listed as carcinogenics by the National

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[10]Gary H. Barnett, "Manufacturers: Give the Standard a Chance," Management Review, April 1986, 56.

[11]Tyson, 54.

Toxicology Program and the International Agency for Research on Cancer. Finally, the chemical manufacturers who bore the primary responsibility for the assessment of hazardous materials identified all other hazardous substances. The hazard assessments were completed and manufacturers and importers were to provide the necessary labels and Material Safety Data Sheets to non-manufacturing employers before November 25, 1985.[12]

Second, all exposed employees must be properly trained so they can use the information made available by the standard. The training must include information about the requirements of the standard, the location of Material Safety Data Sheets and mandatory hazard communication programs, and how to get and use this information. Additionally, the program must cover specific chemical hazards and employee protection techniques. Furthermore, the information presented must be understandable. All employees must know what hazards are present in their work place and how best to cope with an emergency.[13]

Finally, how was OSHA to protect, if possible, chemical manufacturer's trade secrets? Initially, OSHA proposed to exempt trade secrets from disclosure to employees and their legal representatives. This was overturned by the courts and as of November, 1985, manufacturers must make all

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[12]Ibid.

[13]Ibid., 55.

chemical hazard information, including trade secrets, available to employees and their representatives.[14]

To establish the Hazard Communication Standard, Dan C. Edwards, the Director of Health and Safety for the Oil, Chemical and Atomic Workers International Union, strongly recommends that a company's joint health and safety committee makes HCS a priority. If a joint committee is not in place the HCS provides a good reason to establish one. Mr. Edwards recommends a committee with an equal number of representatives from labor and management all taking an active part. The committee would review the details of the company's written hazard communication program. They would review Material Safety Data Sheets (MSDS) and container labels for accuracy and ensure that the appropriate MSDS and labels match. Finally, the committee would decide where to store MSDS's and suggest how best to implement the HCS.[15]

Non-compliance with the Hazard Communication Standard can be expensive. OSHA can impose fines of as much as $10,000 per violation per employee. Additionally, an employer could be open to a civil or criminal suit based on negligence. If negligence is proven, many insurance companies will not cover the settlement, which could leave

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[14]Edwards, 58.

[15]Ibid.

the company in financial ruin.[16]

Modifications and amendments. As a result of court decisions, OSHA issued, in November, 1985, a new proposed rule to expand the HCS to all work places covered by the Occupational Safety and Health Act. A final interim rule to extend trade secret information to all employees was also included. Labor and industry felt that they won the court battle, and all parties, including OSHA, were satisfied with the outcome.[17]

OSHA, in 1987, finally expanded the right-to-know rules for hazard communication to virtually everyone in the work place. Since then, chemical manufacturers, importers, and distributors were required to supply hazard information concerning chemicals that they sell or ship to non-manufacturing employers and distributors. Therefore, as of May 23, 1988, non-manufacturing employers must comply with all provisions of HCS.[18]

Additional Considerations

Three areas of interest although not passed into federal law may have an important impact on the turfgrass operation. The following are either under consideration as

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[16]Jack Petree, "High Stakes," American Nurseryman, 15 June 1988, 43.

[17]Edwards, 58.

[18]Petree, 43.

amemdments to the Hazard Communication Standard, established state and local regulations, or proposed legislation.

High risk notification. Congress has been considering legislation known as the High Risk Occupational Disease Notification and Prevention Act for three years. The proposed bill will provide government notification to past and present employees who are in high-risk groups. These groups include employees with increased chances of contracting diseases because of their exposure to hazardous substances. The Reagan Administration had preferred expanding the HCS which would have provided former employees access to medical records and Material Safety Data Sheets.[19]

Toxic tort legislation. An alternative to high risk notification has been toxic tort litigation. These suits seek court orders so that employees can obtain information on hazardous substances in their work places. The suits also seek to require companies to develop medical testing procedures which will determine if employees develop adverse effects because of exposure to hazardous materials.[20]

Community pesticide awareness. Some states and communities require turfgrass managers to notify them of their operation and pesticide applications. Two programs,

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[19]Richard I. Lehr, "Right to Know Issues Expand in Scope," Lawn Servicing, November/December, 20, 25.

[20]Ibid., 25.

community "right to know" and prenotification, are used to provide this information.

The Federal Insecticide, Fungicide, and Rodenticide Act

History

In 1947 Congress passed the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) which became effective in 1948. FIFRA of 1947 was a labeling law intended to regulate imported and exported pesticides and those sold in interstate commerce. It increased the requirements of an earlier act, the Insecticide Act of 1910, and added safety precautions for people handling pesticides.[21]

The Environment Protection Agency (EPA) was created in 1970. EPA was assigned the responsibility for regulating pesticides and establishing pesticide tolerances in food commodities. In essence, the EPA is responsible for the enforcement of the provisions of the FIFRA of 1947 and its amended versions. This presented the EPA with a considerable task, the reregistration and registration of over 35,000 pesticides.[22]

In 1972 the Nixon Administration sought an environmentally sound position and proposed the 1972 amendments. These attempted not to offend the farmers or

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[21]Ed Perry, "The Label, the Law, and You," American Nurseryman, 15 August 1987, 98.

[22]Parochetti, 1.

legislation continued to emphasize the basic belief that the public should be protected from dangerous chemicals. It also made it easier for farmers to find effective pesticides on the market. Finally, the amendment allowed the EPA to simplify registration of pesticides and gave the public access to information concerning the affects of pesticides on humans and the environment.[23]

In 1978 Congress passed FIFRA of 1978. It was intended to end difficulties encountered in the registration and marketing of pesticides. This happened because the EPA missed the deadlines set by the 1972 law for reregistering and registering pesticides. Also, farmers complained that the law was causing inefficiencies in the production of foods because of the difficulties that chemical manufacturers faced in the marketing of pesticides. Therefore, the 1978 amendments removed unfair advantages which long time pesticide producers and large corporations held in the marketing of pesticides. The unfair advantages resulted in the less-established and small pesticide manufacturers not being able to get their new products approved quickly. This left minimal competition for the well established products while the new products waited for years before EPA approval.[24]

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[23]Congressional Quarterly Inc., Congressional Quarterly Almanac - 95th Congress, 2nd Session....1978, Vol. XXXIV, 697.

[24]Ibid.

The 1978 version of FIFRA also added two important conditions. First, the EPA could simplify registration of pesticides by use of "generic" registration. This allowed EPA to register pesticides by their chemical makeup instead of by their product name. It also reduced the number of pesticides that required registration from 35,000 to 1,400. Also, states were given new authority to enforce standards designed to maintain minimum, nationwide controls on the substances.[25]

Goals of the Act

The Federal Insecticide, Fungicide, and Rodenticide Act's primary goal is to protect the public and environment from the adverse effects of pesticides. The Environmental Protection Agency will register all pesticides used in agricultural practices to meet this goal. To further support this goal, the EPA must cancel the registration, change classifications, or hold hearings on any pesticide that shows an adverse effect on the environment. Additionally, the EPA must set standards for federal or state certification programs for private and commercial applicators. Finally, it will initiate research programs, through government grants, to develop biologically integrated alternatives for pest control.[26]

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[25]Ibid.

[26]Congressional Quarterly Inc., Vol. XXVIII, 934.

Another, goal of FIFRA is to present a compromised position and thus settle the controversy between chemical manufacturers, environmentalists, and farmers. The decade of the 1960's saw considerable controversy. Environmentalists argued for stronger restrictions. The manufacturers argued that their products increased the standard of living. And farmers wanted a balance between environmental protection and efficient food production. Even today, this controversy continues and has stopped all recent attempts to pass a reformed pesticide act.[27]

The Act

To meet the goals of the Federal Insecticide, Fungicide and Rodenticide Act of 1972 the EPA is required to register and regulate all pesticides. Pesticides are divided into two categories: general and restricted. The severity of the hazard determines the category. Also, pesticide manufacturers must register with EPA and are subject to inspection and sanctions if deemed necessary. Additionally, pesticide manufacturers or retailers can be entitled to federal indemnity payments. This would happen if their products are declared an imminent hazard by EPA.[28]

Specific provisions of the Act are as follows:

1. All pesticides used in U.S. commerce must be

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[27]Ibid.

[28]Ibid.

registered with the EPA.

2. Applicants for registration must submit detail information on the pesticide, including labeling, direction on use, chemical formula, and test results.

3. Information used to register a pesticide must be available to the public 30 days after registration.

4. Establishes two classes of pesticides - general use and restricted use.

5. Requires EPA to set standards for federal or state pesticide applicator certification programs.

6. Unless approved it will automatically cancels registration of pesticides after 5 years.

7. Authorizes the EPA administrator to take required actions, such as, cancellation, reclassification or review of any pesticide found to pose an adverse effect on the environment.

8. Authorizes the EPA administrator to suspend registration of any pesticide which presents an imminent hazard to public health or the environment.

9. Requires registration of all pesticide manufacturing plants, and inspection of all plants and records.

10. Provides some protection for trade secrets.

11. Authorized indemnity payments unless manufacturers or owners knew in advance that the products were illegal.

12. Provides for judicial review of most EPA

decisions.

13. Provides that exported pesticides meet the laws of the foreign purchaser and imported pesticides meet U.S. standards.

14. Authorizes a research program, with federal grants, to develop alternatives to chemical pest control.

15. Authorizes the EPA administrator to delegate to states the authority to enforce the Act and to develop applicator certification programs.[29]

Noncompliance with the Act can result in the EPA issuing a stop-sale, use or removal order and to seize pesticides in violation of the Act. Additionally, civil penalties include a $5,000 fine for each offense or $1,000 on each pesticide applicator or both. Criminal penalties set for manufacturers are as much as $25,000 per violation or a year in prison or both. Private applicators can be fined up to $1,000 or receive 30 days in prison.[30]

Proposed modifications. In 1986, Congress attempted to complete action on legislation to reauthorize and substantially strengthen the FIFRA, but the bill stalled in the Senate and died when Congress adjourned. FIFRA had been overdue reauthorization since 1981, but efforts had been stalled because of arguments between environmentalists and

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[29]Ibid.

[30]Congressional Quarterly Inc., Vol. XXVIII, 934.

chemical companies. Finally, in 1986 with sufficient compromises the bill went before Congress. Its major provisions included the speeding up of testing of hundreds of pesticides already in use. It also increased public access to health and safety information and gave EPA authority to protect ground water from pesticides. Additionally, it regulated for the first time some hazardous pesticide ingredients previously considered "inert." Finally, it increased certification requirements for pesticide applicators and initiated provisions for the protection of farm workers from pesticide exposure.[31]

The 1986 amendments to the FIFRA never passed. The legislative sessions of 1987 and 1988 also attempted to pass these amendments but failed.

Additional Considerations

Unlike the Hazard Communication Standard, in which most provisions have a direct affect on the turfgrass industry, the Federal Insecticide, Fungicide and Rodenticide Act's provisions have a more direct affect on pesticide manufacturers. Although attempts to strengthen the FIFRA of 1978 have failed, it is inevitable that provisions similar to those proposed in the FIFRA of 1986 will become law. Additional consideration must be made at this point on

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[31]Congressional Quarterly Inc., Congressional Quarterly Almanac - 99th Congress, 2nd Session....1986, Vol. XLII, 120, 124-26.

important provisions which will have a direct affect on the turfgrass manager if enacted into law.

The "Public Right-to-Know" proposal. This proposal to FIFRA is similar to the employee right to know provisions of the Hazard Communication Standard. It requires pesticide producers to prepare a fact sheet for each active ingredient manufactured or used at a production plant. The fact sheet must contain information including the chemical identity and a summary of relevant health, safety and environmental data. Copies of the fact sheet must be kept at the plant and furnished to anyone upon request. The fact sheets would be similar to the Material Safety Data Sheets required by OSHA under the HCS. MSDS's would be available to local communities, fire and health departments, and others at manufacturing and use locations.[32]

Certification Training. As presented in the 1986 proposal, stricter rules and procedures would be established to ensure that applicators of dangerous pesticides be qualified to use them safely. New requirements for training and registration of applicators under certified supervision would be created. Also established would be a requirement that all commercial applicators be certified or registered, whether the pesticide was for general or restricted use.

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[32]"Groups Agree on Pesticide Amendments," Grounds Maintenance, November 1985, 64; and Congressional Quarterly Inc., Vol. XLII, 125.

that all commercial applicators be certified or registered, whether the pesticide was for general or restricted use. Additionally, comprehensive training programs would be developed from training materials supplied by the EPA. EPA must also issue minimum standards for trainer competency and training programs. Finally, certified commercial applicators would be required to take a refresher course and re-certify every 5 years.[33]

Record-keeping. All commercial applicators would be required to maintain records for two years and include the chemical, amount applied, date and location. Amendments would also require pesticide dealers to keep records of pesticide sales to include the chemical, amount, date, and purchaser's name for three years.[34]

The Resource Conservation and Recovery Act

History

The Resource Conservation and Recovery ACT (RCRA) came into existence in 1976 when it replaced the Solid Waste Disposal Act of 1965. Sponsors of RCRA called the solid waste problem the stepchild of the environmental movement, because considerably more attention was given to clean air and water legislation. The 1976 bill authorized innovative programs in solid waste management and state sponsored

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[33]Congressional Quarterly Inc., Vol. XLII, 126.

[34]Ibid.

recycling and extraction of resources from or disposal of solid wastes. Additionally, the bill established a federal permit program to regulate hazardous wastes and required states to ban all open dumping within five years.[35]

As with the Federal Insecticide, Fungicide and Rodenticide Act, the Environmental Protection Agency must administer the RCRA. The EPA promulgated its first regulations four years after enactment. They pursued the large waste producers, requiring them to dispose of their wastes in federally approved sites. The 1976 law requires "cradle to grave" accountability of all hazardous wastes. This includes the use of a standard EPA manifests which accompany wastes during each stage of shipment, storage, treatment, recycling and final disposal. EPA also issued rules, stricter than those for household and municipal wastes, on the generation, storage, treatment, and disposal of all wastes. EPA defined hazard wastes as toxic, flammable, corrosive, or explosive.[36]

Goals of the Act

The primary goal of the Resource Conservation and Recovery Act is to protect the environment and public from

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[35]Congressional Quarterly Inc., Congressional Quarterly Almanac - 94th Congress, 2nd Session 1976, Vol. XXXII, 199-200.

[36]Congressional Quarterly Inc., Congressional Quarterly Almanac - 98th Congress, 2nd Session....1986, Vol. XL 305, 307; and Tom Alexander, "Hazardous Waste Shuffle on the Hill," Fortune, 17 September 1984, 137.

hazardous wastes produced by business. Accomplishment of this is through regulation of hazardous waste producers, transporters, and operators of treatment, storage and disposal facilities. The EPA is also directed to establish guidelines for state solid waste management plans. Additionally, they must develop, with the cooperation of other federal agencies, a research, development, and demonstration program of experimental approaches to waste management. EPA is to direct all efforts towards the solution of the hazardous waste problem and ensure a safer environment for all.[37]

The Act

With the goals in mind the Resource Conservation and Recovery Act (RCRA) was written to regulate the "cradle to grave" handling of hazardous wastes. Under the law, EPA issues and enforces rules on the generation, storage, treatment, and disposal of all dangerous wastes. The major provisions of RCRA are as follows:

1. Bans the disposal of any bulk liquid hazardous waste in any landfill and any non-hazardous liquids in landfills designated for hazardous wastes.

2. Requires EPA to establish regulations to minimize the disposal of containerized liquid hazardous wastes in landfills.

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[37]Congressional Quarterly Inc., vol. XXXII, 199.

3. Bans land disposal of certain highly hazardous wastes including solvents and dioxins.

4. Requires EPA to issue standards for handling of hazardous wastes produced by small-quantity (220-2,200 pounds per month) generators.

5. Requires EPA standards to allow on-site storage of hazardous wastes without permit for 180 days. Also allows small-quantity generators to store up to 12,000 pounds of waste for as long as 270 days, if the waste generator has to ship wastes more than 200 miles.

6. Requires owners of underground storage tanks used to store hazardous substances to notify state agencies. Also, required EPA to regulate the detections of storage tank leaks.[38]

RCRA sets forth many other provisions, but they address hazardous waste disposal facilities and fall under the superfund program.

Modifications and amendments. On November 8, 1984, the RCRA became considerably tougher. Congress passed amendments to the 1976 bill which now require small quantity generators of hazardous waste to fall under the provisions of the RCRA. Small businesses, which produce 220 pounds or more of hazardous wastes monthly, must send their wastes to federally approved facilities. Wastes produced by small

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[38]Congressional Quarterly Inc., vol. XL, 305-6.

businesses include, used solvents, acidic or caustic cleaning solutions, discarded chemical products, chemical spill residues, and flammable products such as paints and adhesives. Shipment of these wastes can be quite expensive. To alleviate this problem, the regulation allows small quantity generators to store up to six tons of waste on the generation site. Storage time can not exceed a maximum of 270 days when the nearest disposal site is more than 200 miles away.[39]

Additional Considerations

The Resource Conservation and Recovery Act is very complex and specific in its requirements on the business operator. Certain provisions as defined by EPA address requirements placed on the turfgrass manager. Of particular importance is the definition and classifications of hazardous wastes generated by a turfgrass operation.

Hazardous wastes defined. EPA regards wastes as hazardous, if they exhibit the characteristics of: ignitability, corrosivity, reactivity, or EP toxicity. EP toxicity is measured by the waste's leachability through soil and shown by the concentration of specific metals and pesticides in the soil. Hazardous wastes generated by a turfgrass operation can fall into two major categories.

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[39]"New Teeth in Waste Law," The Nation's Business, November 1986, 16.

They are: pesticide wastes and maintenance/repair wastes.[40]

Classification of pesticide wastes. Pesticide wastes fall into the following classifications:

1. Rinse water used to clean pesticide application equipment and water used to rinse product containers.

2. Empty containers not cleaned in accordance with label instructions and hazardous waste regulations.

3. Unusable or unidentifiable pesticide materials.

4. Contaminated materials, such as, soil or other materials cleaned up from a pesticide spill. Materials used to clean-up spills, also, fall into this category.[41]

Classification of maintenance wastes. Maintenance and repair wastes are classified as:

1. Parts washer solvents used during equipment maintenance functions.

2. Paint and thinner wastes that are ignitable; have EP toxicity for lead, chromium or other heavy metals; or contain one of the restricted thinners or strippers.

3. Batteries that display corrosivity or EP toxicity, unless they are recyclable.

4. Epoxies or adhesives that display one of the EPA characteristics of a hazardous waste.

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[40]Hal Winslow, "What the Grounds Manager Needs to Know About Hazardous Wastes," Grounds Maintenance, August 1988, 42.

[41]Ibid.

5. Caustics, acids, or alkalines which exhibit a PH of less than 2 or more than 12.5.[42]

To this point, three major federal regulations have been analyzed. They are the Hazard Communication Standard (HCS); the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); and the Resource Conservation and Recovery Act (RCRA). HCS requires all employers who fall under the Occupational Health and Safety Act to inform their employees of chemical hazards at the work place. FIFRA requires all employers to ensure that their employees are trained in the safe handling and use of pesticides. Finally, RCRA requires employers who generate hazardous wastes to safely handle and dispose of them. The turfgrass manager must be aware of these requirements and ensure that they are followed at all times. To aid him, a program outline is presented in the next chapter.

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[42]Ibid., 42, 48.

CHAPTER 3

A PROPOSED PESTICIDE MANAGEMENT PROGRAM

The pesticide management program presented attempts to address and satisfy the requirements of the previously mentioned pesticide regulations as they pertain to the turfgrass industry. These requirements are combined into a generalized program outline which can be used as the basis for development of a more specific program necessary to meet the needs of individual turfgrass managers. Included in the outline are methods of communicating pesticide hazards, providing pesticide safety training, and meeting internal managerial requirements.

The following areas of interest are included in the program outline:

1. Work place hazard communications, as required by the Hazard Communication Standard.

2. Community pesticide awareness derived from the probable enactment of national community "right-to-know" and pesticide prenotification.

3. Pesticide safety training and an in-house extension of the pesticide applicator's certification program.

4. Record-keeping.

5. Hazardous waste handling.

The Communication of Pesticide Hazards

Communication, the relaying of information, is the essence of any program and particularly safety programs. Our federal government through the regulatory process (Addendix 1) has communicated concerns about pesticides and the hazards they present. The three regulations under consideration in this paper levy upon the turfgrass manager certain requirements which must always be met. Communicating these requirements to employees and insuring community awareness are responsibilities of the turfgrass manager.

Work Place Hazard Communications

The initial source of all pesticide safety requirements are government regulations. Pesticide regulations establish those requirements which must be met by the turfgrass managers, pesticide manufacturers and government agencies. Therefore, the Hazard Communication Standard prescribes what information must be supplied to the turfgrass manager by pesticide manufacturers. This information takes the form of pesticide container labels and Material Safety Data Sheets (MSDS). Once in the hand of the turfgrass manager, this information initiates hazard communications in the work place.

Labels must be attached to each container before sale and must include the identity of the chemical giving both the generic and chemical name. It must also include the

pesticide formulation to include active ingredients and percentage thereof. Also, required is the EPA registration number, toxicity level, medical information, manufacturer's name and address, and warranty. Additionally, all labels must have mixing instructions (including compatibility information and methods of mixing and handling). Application instructions (including crops it can be applied to, target pests, application rates, proper timing and application methods, and restrictions for use) must also be included. Finally, labels must include storage information and disposal methods. Everything the turfgrass manager needs to know about the pesticide is on the label. The proper use of this information will greatly enhance pesticide safety by reducing accidents and misuse.[43]

As previously stated Material Safety Date Sheets must be supplied at time of pesticide purchase. The MSDS must contain information on the chemical's characteristics, its health effects and exposure limits. Additionally, the MSDS must indicate whether the pesticide is a carcinogen and include precautionary measures, as well as, emergency and first aid procedures.[44]

Information contained on labels and MSDS's and how to gain access to this information must be used in the

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[43]Teresa Stroud, "Record Pesticide Applications," Grounds Maintenance, March 1986, 50.

[44]Tyson, 54.

development of a Hazard Communications Program (HCP). The HCP is the internal vehicle used to relate pesticide hazards to employees and must be instituted by all businesses whose employees may be exposed to chemical hazards. Therefore, pesticide hazards and safety must be relayed to the employees as required by the Hazard Communication Standard and the Federal Insecticide, Fungicide, and Rodenticide Act. The more informed and better trained an employee is the less chance of an accident. Or if an accident occurs, properly trained employees can handle the emergency and thus minimize its severity.

The HCP must be developed and used as a basis for employee chemical safety training. Additionally, pesticide safety training must be conducted so that those that handle pesticides are highly knowledgeable of pesticide hazards and safety procedures. In order to comply, the following steps must be accomplished and incorporated into the HCP:

1. Inventory all chemical materials in the workplace. In general, if the item has a product label with any warning, consider it a hazardous substance. It is best, when in doubt, to consider any questionable chemical a hazard. Then contact the manufacturer and request a Material Safety Data Sheet.

2. Label all hazardous chemical containers. The label must be legible and securely attached to the container. Materials bought in bulk and broken down into smaller units,

must also be properly labeled.

3. Material Safety Data Sheets (MSDS) must be readily available in an emergency. Each chemical listed in the inventory must have a MSDS. Use the MSDS for training and ensure all required information is accurate. The user of this information should be concerned about its quality. Inaccurate or incomplete information can cause problems in training programs, make the work place less safe, and possibly raise liability costs. Therefore, chemical users should search for and purchase from suppliers who will supply complete MSDS's. Some small manufacturers with limited staffs have had problems in providing accurate information. These problems are corrected rapidly because of market pressures, product liability exposure, and OSHA sanctions.

4. All employees who could be exposed to chemical hazards must be identified and trained. For instance, an office employee who occasionally enters a chemical staging area must be as equally trained as those employees who handle chemicals. If there is a question about whom must be trained contact OSHA or train them anyway.

The training program must be complete, giving employees the full picture of the potential exposure. It must list the consequences of exposure, what must be done if exposed, and protection procedures. Once the training program is complete it would be best to have each employee sign a

document stating that they received hazard communication training. This shows that the employer has done all that is possible in order to comply with the law's provisions.

5. A written and detailed chemical hazards training program must be maintained. It must be available to workers and OSHA inspectors. As new chemicals enter the work place, the program must be updated. Additionally, program updating must be accomplished periodically and employees trained each time a new chemical enters the work place.[45]

Community Pesticide Awareness

Although not required by federal law, some states require turfgrass managers to notify communities of their operation and timing of pesticide applications. Two specific programs, community "right to know" and prenotification, provide this information.

Community "right to know." Presently, 28 states have enacted community "right to know" legislation, an extension of employee's "right to know." The basic provisions of the community "right to know" requirement include the following:

1. The State Department of Environmental Affairs develops a list of hazardous chemicals, which turfgrass managers must check.

2. If the employer uses any listed chemicals he must

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[45]Petree, 43-4 and Barnett, 56.

submit a report of chemicals on hand to the local fire department and in some cases to local police and emergency personnel. Additionally, turfgrass managers may be required to submit reports to the State Environment Control Department, Department of Health and Department of Labor.

3. The information reported usually includes:

-location of hazardous substances

-Material Safety Data Sheets

-substance labels

-a list of the substances kept at the work place and their quantities.

4. An important aspect of community "right to know" is public access to information about hazardous materials. Usually the public can obtain this information from agencies to whom an employer must file reports.

5. The employer may be required to show who to contact in the case of emergencies.

6. Trade secret protection does exist for the employer.[46]

Prenotification. This should also concern the turfgrass manager. In states such as Massachusetts and Rhode Island, lawn care operators must post signs and provide safety information to customers before or whenever they apply pesticides. Presently, 10 states and Canadian

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[46]Richard I. Lehr, "Right To Know Issues Expand in Scope," Lawn Servicing, November/December 1987, 20, 24.

provinces are considering similar requirements of lawn chemical applicators. Prenotification procedures should be simple, easy to comply with, and provide the consumer with needed information.[47]

In some communities, prenotification requirements extend to the neighbors of the turf manager's customer. The purpose of this is to afford all potentially exposed people the opportunity to take actions to minimize exposure to pesticides. This requirement was initially proposed in order to eliminate the possibility of allergic reactions and associated pet illnesses.[48]

Some serious questions and concerns present themselves to the lawn care professional. Besides prenotification being a costly program, other difficulties must be considered, such as scheduling applications around employee absences, equipment break-downs and bad weather. Additionally, on-the-spot applications during service calls would be impossible.[49]

Now, there are two primary methods in which prenotifications can be made. One method is to give the customer and their neighbors the option of being prenotified of any pesticide application. The prenotification can be

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[47]James F. Wilkinson, Ph.D., "Regulatory Officials," Lawn Servicing, July 1988, 24.

[48]James F. Wilkinson, Ph.D., "Pesticide Prenotification," Lawn Servicing, July 1988, 24.

[49]Ibid., 25.

made by phone, mail or knocking on the door before application. Few people request prenotification. The other method is a central requesting system. Pennsylvania presently uses this system which allows people who want to be notified to register with the State Pesticide Enforcement Agency. To register the person must submit a certificate signed by a physician showing that they have an allergy or sensitivity to pesticides. Lawn care companies receive the registration list annually and use it to make prenotification.[50]

The benefits gained from applying the requirements of community "right to know" and prenotification, even though not required, enhance the image of the professional turfgrass manager. He presents an image of concern for the community and ensures important information is made available. The costs associated with these requirement arise mainly though labor costs. Reporting the use of pesticides to state agencies and communities take time but a reasonable estimate of that time may be 5 minutes per customer application. The cost of this additional time required per application can be compensated for through goodwill expressed and retained by the professional turfgrass manager.

The communicating of information whether it is the receipt of data from outside agencies or relaying safety

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[50]Ibid.

requirements to employees or advising a concerned community must be accomplished in an efficient manner. Such information relay is important to the turfgrass manager and is essential to the operation of their businesses. Of equal importance is pesticide safety training required by the pesticide regulations under consideration in this paper.

Pesticide Safety Training

Enhanced public safety is the intended result of the Hazard Communication Standard, the Federal Insecticide, Fungicide, and Rodenticide Act and the Resource Conservation and Recovery Act. Public safety is the safety of employees, consumers and the general populous who may be exposed to pesticide hazards. In order to maintain public safety those who use pesticides, in this instance, the members of the turfgrass industry and their employees must be knowledgeable of pesticide hazards. Communicating this knowledge to employees can be accomplished through a comprehensive pesticide safety training program.

Trained employees who are informed and confident professionals are able to use pesticides correctly and properly handle pesticide emergencies. There are two specific areas of concern which fall under pesticide safety training. The first is the pesticide applicator's certification program as required by FIFRA and the second is pesticide safety training as required by HCS.

Pesticide Applicator Certification Training

The pesticide applicator is that employee who as a part of their employment applies pesticides. As required by FIFRA all pesticide applicators must be certified by a state agency responsible for applicator training and certification. This program of certification typically combines experience and academic know-how, enabling all applicants a fair chance at certification. Periodic recertification ensures the applicator remains up-to-date with all requirements.[51]

The typical certification program has two steps. The first step in the program consists of successfully passing a core examination. This exam covers general topics such as pesticide safety, handling, and storage procedures, and current laws and regulations. Passing the core examination enables the applicant to complete the second step, which consists of category examinations applicable to one's field of work. This exam covers specific technical subjects such as agricultural pest control, ornamental and turf pest control, and forest pest control. When both steps are completed the applicant is officially certified and authorized to apply pesticides in specified categories.[52]

In order to continue to be certified the applicator

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[51]J.E. Dewey, Pesticide Applicator's Training Manual (Ithaca: Cornell University, 1979), 53.

[52]Ibid.

must accumulate a minimum of 24 units of instruction over a five year period. Each unit represents 30 minutes of instruction. Eight of the 24 units must be "core" topics and the remaining 16 units must be concentrated in category topic areas. If the applicator does not complete the continuing certification requirements, he must retake the certification examination.[53]

Instructional material fees usually range from $10 to $25 and includes all materials needed for the core and category examinations. Additionally, licencing fees, depending on the state, can range from $20 to $50 for applicants and considerably more for businesses.[54]

The question may be asked, "Why be certified?" There are many benefits gained from employing certified pesticide applicators:

1. Applicators are professional, aware of safety requirements, and trained on how to manage a pesticide emergency.

2. The applicator has shown he is a concerned turfgrass manager and that he is serious about his chosen profession.

3. By hiring certified personnel the employer has a measure of confidence in his applicators.

4. The industry as a whole is weeding out the

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[53]Ibid., 5-6.

[54]Ibid., 4.

incompetents from the dedicated and reliable turfgrass managers.

5. The public will be reassured that the applicator is competent and can therefore trust his judgement.[55]

Pesticide Safety Course

The pesticide applicator certification program is a training course conducted by the state and addresses one class of employee, the pesticide applicator. Employees who handle or work in the general area of pesticides must recieve pesticide safety training. First, the employees should be trained on self protection and prevention of pesticide exposure. The training should also ensure that an employee can respond quickly and correctly in a pesticide emergency and administer first aid as required.

The most frequent pesticide injuries result from skin and eye contact with pesticides during handling. Train employees who handle pesticides how to prevent pesticide exposure. To minimize exposure, also, train employees on the use of protective clothing and equipment. Employees need to understand the importance of protective items and how and when to use them. As a minimum the employer should supply and train all employees on the use of the following items:

1. Unlined, liquid-proof aprons, rainsuits, or water-

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[55]Allan Shulder, "Why Be Certified?," Grounds Maintenance, July 1984, 54-55.

resistant coveralls.

2. Unlined rubber gloves approved for chemical use.

3. Unlined rubber boots which are resistant to chemicals.

4. A wide-brimmed, liquid-proof head covering.

5. Goggles or a face shield.

6. Respiratory protection to prevent inhalation of dusts or vapors.

7. Clean shirts and trousers.[56]

Also, train employees on the proper maintenance of the equipment and protective clothing. Equipment maintenance procedures include regular cleaning with soap and hot water, and storage outside the pesticide area. Additionally, most safety equipment items, when purchased, are accompanied by use and care instructions. Following these instructions will ensure proper use, care, and increase employee safety. Pesticide contaminated protective clothing can also presents a potential problem. They should be washed separately and lined-dried. Line-drying in sunlight promotes further breakdown of pesticide residue.[57]

The training program should also include storage procedures for pesticides. These procedures include the proper closing of containers and disposal of empty

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[56]Cynthia L. Brown, "Pesticide Safety Training," Grounds Maintenance, February 1988, 72, 74.

[57]Ibid., 74.

containers. Store pesticides in areas clearly marked with appropriate warning signs. Additionally, these areas should be enclosed and locked at all times.[58]

First aid training is essential for employees who may be exposed to pesticides. Employees should be trained to consult the pesticide label immediately for emergency first aid information. They should also know the location of labels, MSDS's, and pesticide information telephone numbers. Finally, they must know the general first aid principles for the most common pesticide exposures:

1. Skin exposure requires the removal of contaminated clothing and the immediate washing of affected areas with soap and water. Avoid harsh scrubbing because it may enhance absorbtion. Dry the area with a clean cloth. Avoid ointments unless directed.

2. Eye exposure requires holding the eyelid open, and immediately flushing the eye with clean running water. Do not use chemicals or drugs to wash the eyes unless directed.[59]

Besides the information presented, pesticide safety training should include the fundamentals of pesticide handling and use of specific pesticides. Include pesticide characteristics (toxicity and formulation), environmental considerations (drift and hazards to nontarget plants), and

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[58]Ibid.

[59]Ibid., 74, 117.

procedures for responding to pesticide emergencies (spills and fires).[60]

The benefits of a comprehensive pesticide safety training program goes beyond satisfying any legal requirements. A complete program can create a safer working environment. Additionally, employees become well-informed and skillful professionals, confident in what they do and better able to handle on-the-job customer and neighbor inquires.[61]

Training can be presented as lectures, audio-visual programs, handouts, or through several other educational techniques. Its estimated that every employee should receive at least six to eight hours of training. OSHA has estimated that the employee cost of such a training program will be $43. This cost has been disputed. Many companies disagree with this estimate and insist the cost is significantly higher. Of course the cost for development of in house programs or the purchase of canned programs offered by many professional associations is spread over the number of employees trained. The costs are insignificant to the benefits that can be gained.[62]

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[60]Ibid., 117.

[61]Ibid.

[62]Barnett, 57.

Internal Managerial Requirements

The pesticide regulations have set forth specific requirements which must be considered and accomplished on a daily basis by the turfgrass manager. The Resource Conservation and Recovery Act requires management to establish hazardous waste control and record keeping procedures. Internal managerial requirements must be accomplished accurately in order to meet regulatory requirements, to ensure employee safety, and to maintain operational efficiency.

Hazardous Waste Management

Procedures to manage hazardous wastes generated by a turfgrass management business should be established in order to meet the requirements of RCRA. Integral parts of waste management include reduction of hazardous wastes, shipment of wastes, and liability avoidance.

Reduction of hazardous waste. Because of the expense of hazardous waste handling and increased managerial concerns hazardous waste reduction is of considerable importance. Reduction of wastes may be accomplished as follows:

1. Mix only the amount needed and thus reduce excess pesticides.

2. Use rinse water to make up the next application of pesticide.

3. Have areas available where excess mixtures or rinse water from equipment cleaning can be applied safely. Be sure not to exceed the recommended application rates in these areas.

4. Use a material injection device on spray equipment which adds pesticides to the stream of water just behind the spray nozzle. This uses smaller containers for concentrated pesticides, instead of large mixing tanks, and results in less contaminated rinse water to handle after equipment clean-up.

5. Holding tanks, located on site, may be employed to hold excess pesticide mixtures and rinse water. This method will likely cause more problems than benefits, since the concentration of pesticides will become unknown after a short time.[63]

Shipment of wastes. Excess hazardous wastes must be shipped from the generation site. One of the best ways to ship them is in Department of Transportation approved 55 gallon barrels. Shipping cost is approximately $250 per barrel. Also, when shipping the hazardous wastes off a generation site, a "uniform national manifest," EPA Form 8700-22, must be filled out and accompany the shipment. Generally the manifest includes, the name and address of the generator's business site. Also include DOT's official

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[63]Kirk W. Brown, "Hazardous Waste Disposal: What are the Options?," Grounds Maintenance, February 1986, 84-86.

description of the material, the number and type of containers, and the quantity of waste material. Finally, include the name and address of the disposal facility.[64]

Additionally, each container must be labeled. The label must include precautionary statements, such as, "Handle With Care" and "Contains Hazardous or Toxic Wastes." Also, include the DOT chemical shipping name, accumulation start date, manifest document number, and EPA waste number on the labels. Finally, add generator information, including name, address, and EPA identification number. Once, the container is full and properly labeled it is ready for transport. Then a reputable waste hauler should be contacted. Make sure the hauler understands what wastes he is handling and that his chosen destination, an approved facility, has a permit, licence, or authorization. Otherwise, the wastes can be refused and returned.[65]

Liability avoidance. The turfgrass manager, as a generator of hazardous wastes, must attempt to lessen his liability when handling hazardous wastes. In order to avoid or minimize generator liability, the following steps should be followed:

1. Get an identification number and set up a file.

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[64]"Hazardous Waste Laws Affect Business," Grounds Maintenance, November 1985, 1.

[65]"New EPA Regulations May Make You a Hazardous Waste Generator," Grounds Maintenance, January 1986, 50; and Winslow, 42.

Each site which generates 220 pounds or more of hazardous waste must have an identification number. The ID number can be obtained from the state hazardous waste management agency or the regional EPA office. Establish a file to document compliance efforts and create a "paper trail" of accountability for waste management.

2. Carefully screen and check waste management services. Verify the legitimacy of waste haulers and disposal facilities. Maintain accurate records of what happens to the waste once released to a hauler. Record the haulers name, address, permit number, and where he will dispose of the wastes.

3. Maintain communications with other industry members and hazardous waste agencies, in order to stay up to date with new requirements.

4. Put someone in charge of waste management. Every regulated site must have an emergency coordinator. This person should know what to do in an emergency and be available to accompany an inspector entering the site. He is also responsible for keeping informed of all regulation changes and risk management alternatives.[66]

The cost and benefits obtained from a hazardous waste program are dependent on the size of the turfgrass maintenance operation. Through waste reduction techniques disposal costs can be eliminated for the small operator, but

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[66]Winslow, 42.

on the other hand the large operator's cost may be considerable. Annual program costs could run from $500 to $10,000 and higher depending on the amount of wastes generated.

The Record Keeping Process

Each pesticide regulation under consideration requires the turfgrass manager to keep a record of his actions. Records are essential as a form of proof that the manager conducted specific procedures in the correct manner. They are also necessary to help him in the managerial functions encountered on a daily basis. Lastly, they are of assistance in relaying to the public and his employees the information which they consider vital.

The Hazard Communication Standard has set specific requirements and the documentation of their accomplishment must be recorded. Documentation of the chemical materials inventory must be maintained and updated whenever there is a change. Maintain a record of all pesticide labels and MSDS's. They should be readily available in an emergency. Additionally, a record of all employees who are subject to or exposed to hazardous chemicals must be kept. Finally, the training of these employees must be documented along with a record of the training program.

The Federal Insecticide, Fungicide, and Rodenticide Act requires applicators to maintain records of all pesticide applications for two years. Records must be accurate and

thus supply the turfgrass manager with the necessary information when needed. The records should supply the manager with data needed to determine why a pesticide failed and if there was an accident, why it occurred. Good records indicate the effectiveness of applications allowing the turfgrass manager a means of comparison. Finally, the records serve as a source of verification (if signed and dated) when a question arises.[67]

The Resource Conservation and Recovery Act requires hazardous waste generators to reduce wastes and handle them in a safer manner. If a hazardous waste program is established or even if one is not the turfgrass manager should develop record keeping procedures in order to reduce liability exposure. Records should be maintained for all wastes stored on the generation site. Additionally, disposal records documenting a "paper trail" for the accountability of the waste management program are necessary. The "paper trail" should indicate what the wastes are and how they got on the site. Additionally, maintain a record of the disposal site and how they got there. Finally, who disposed of them must be recorded.

Record keeping can be an expensive and tedious exercise. It is required by law and essential for the turfgrass manager's protection. Costs can be reduced by a

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[67]Teresa Stoud, "Record Pesticide Applications," Grounds Maintenance, March 1986, 50.

computer generated data base management system. Many turfgrass businesses have computers and data base application programs already in use. The costs incurred by these concerns are realized in the time needed to develop the data bases used for record keeping. Depending on operator experience and available data, the cost may be no more than $1,000. On the other hand a business without a computer must maintain a paper filing/record system or convert to computer record keeping. Costs for a paper filing system are minimal, whereas, a computer system could cost $1,500 or more.

CHAPTER 4

CONCLUSIONS

Summary

The regulatory process is dynamic. As time passes additional regulations are promulgated and those in existence are strengthened. The federal regulatory process began to affect turfgrass managers in 1910 with the enactment of the Insecticide Act, the forerunner of the Federal Insecticide, Fungicide, and Rodenticide Act of 1947. Approximately two decades later the next major legislation, which directly affected the turfgrass industry was passed. This was the Solid Waste Disposal Act of 1965, the predecessor of the Resources Conservation and Recovery Act of 1976. Finally, in 1983 the Hazard Communication Standard was promulgated. Its origin can be found in the Occupational Safety and Health Act of 1970.

The enactment of these three major federal laws and further promulgation of federal regulations influence the turfgrass manager and his business daily. Compliance is mandatory and non-compliance is subject to substantial fines and sanctions. In order to increase the likelihood that the turfgrass manager will meet these requirements, the many requirements, regulations, and future proposals were merged

into a consolidated program called the Pesticide Safety Program.

As presented the Pesticide Safety Program is intended to supply the turfgrass manager a source document with which he can develop and maintain the federally required standards for pesticide safety. The program presented in this paper is intended to be somewhat generalized, so that it can be adapted to specific situations. Program flexibility was considered to be essential during its development since the size of a turfgrass operation can range from a one employee business to a major corporation such as Chem Lawn, Inc. The researcher did not consider only those federally promulgated regulations but has also included important state requirements and proposed requirements, which in his opinion, will eventually effect all turfgrass managers. This is quite important because of the dynamics of the regulatory process and the fact that the public continues to be concerned about its environment. As public concerns increase or shift from one area to another, turfgrass managers will be faced with ever changing requirements. As in any business, the manager must be cognizant of these changes and prepared to meet the challenges of the future.

Final Recommendations

The future holds considerable uncertainty for the turfgrass manager. Regulations are being strengthened and more requirements are being placed on the manager. In order

to be prepared for these changes the turfgrass manager must attempt to anticipate future requirements. To accomplish this he must stay abreast of proposed changes to federal, state, and municipal regulations. Through subscription to trade journals and membership in professional associations, information on proposed regulatory changes become available. With increased awareness of future regulatory actions the well informed manager becomes the well prepared manager.

APPENDIX 1

A GENERAL REVIEW OF THE REGULATORY PROCESS

The primary functions of the U.S. Government, until relatively recently, have been concentrated on the maintenance and preservation of peace. Governmental interference of any other type was considered to be an undesirable restraint placed on the private citizen. The Declaration of Independence states that the citizens have a natural right to "life, liberty and the pursuit of happiness". Therefore, governmental power to interfere with a person's choice of action at home or in business was constitutionally defined by the rule of law.[68]

Legal Nature of Governmental Control

The Declaration of Independence and The Constitution of the United States have laid a foundation of fundamental beliefs about the relationship between government and private business. The validity of a governmental rule, law or decision affecting business is based on the proper power of government conferred by law. Therefore, the first

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[68]Jesse S. Raphael, Governmental Regulation of Business, (New York: The Free Press, 1966), 1-3.

question to be posed is that of legality.[69]

In order to determine legality of a rule put forward by a governmental agency, certain questions must be asked:

1. Does the national government have the constitutional power to control the practice in question, or is it one over which only the state has jurisdiction?

2. Assuming this control to be within the scope of federal power, does Congress have the constitutional power to pass a statute in respect to the practice?

3. Is the statutory authority to make rules and issue orders conferred on the administrative agency by Congress, a proper constitutional delegation of power?

4. Is the regulation issued by the agency a legal exercise of the statutory authority granted to it?

5. Finally, assuming the authority to be power, is the agency's exercise of the administrative regulation so conducted as to preserve the constitutional rights of the private enterprise, or does it violate those rights?

The answers to these questions present the greatest concern of the private business enterprise; can the government, under law, interfere with its private freedom of action.[70]

In addition to the legal effects, also arises the ever increasing effects of social, economic and political forces on the enactment and application of governmental laws and

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[69]Ibid., 2.

[70]Ibid., 2-3.

regulations. The broad language in which the Constitution is written has led to a widening scope of interpretation. This has led to continuing adaptations of our fundamental laws to meet the increasing complexity of our society. Therefore, legal applicability and interpretation of law must be considered along with the current judicial attitudes toward the solution of economic, social, or political problems.[71]

The Administrative Agency

An administrative agency is a non legislative, non judicial governmental lawmaker. They can exist at federal, state and municipal levels of government and are created by a statute called the Agency's Organic Act.[72]

In the Agency's Organic Act, the legislature recognizes an existing problem and creates an agency to deal with that problem. The legislature, also, delegates its authority to the agency to create regulations to deal with the problem. The Organic Act, therefore, gives the agency power to hear cases dealing with the agency's specific area of interest and to investigate and administer matters under its control.[73]

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[71]Ibid., 3.

[72]Bruce D. Fisher and Michael J. Phillips, The Legal Environment of Business (St. Paul: West Publishing Company, 1986), 147.

[73]Ibid., 148.

Administrative agencies have been created for several reasons. First, the legislature and courts do not have the technical expertise to deal with complicated problems that currently face the United States. Second, ongoing supervision is needed in areas in which the potential for harm is small on an individual but great on the masses. Third, agencies are designed to look out for the weak and poor in their fight against corporate giants. Fourth, the need for a more speedily and economically run government created more administrative agencies. Finally, the administrative agency represented a means for some people to surpass the social road blocks put up by judges.[74]

Administrative agencies are given the power to make laws, called regulations or rules, by legislatures. The power arises through legislative delegation. The statutes delegating power to make regulations are called enabling statutes. There are two types of regulation: substantive and interpretative. Substantive regulations are given the force and effect of law by courts and are legally binding. Interpretative rules are general agency policy and procedural regulations and are not recognized as law by courts.[75]

All administrative agencies perform three major functions: executive, adjudicative, and legislative. The

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[74]Ibid., 148-51.

[75]Ibid., 152.

executive function involves law enforcement and administrative duties. This entails the investigation and enforcement of regulations and doing the never ending tasks of running an organization. Adjudication refers to the presentation of cases before administrative law judges (ALJ's). ALJ's are legally independent from agency investigators, prosecutors and rule makers. They make rules on the admissibility of evidence and control the conduct of the hearing. The legislative function involves rule making or the creation of new regulations.[76]

There are three methods of rule making: informal, formal, and hybrid. The informal uses the notice and comment process, which involves the posting of a proposed regulation in the Federal Register, receiving comments from interested parties, making needed changes, and promulgating the regulation. In this method there are no trials, hearings or face to face contact between agency and public. The formal rule making process occurs through the offical recording of a statute. A notice is made of the proposed regulation and formal hearings are held. Witnesses give testimony and are cross examined. Upon conclusion of the hearing, the agency makes a written, formal report. The regulation is then promulgated on the evidence presented at the hearing. The hybrid process is a cross between the informal and formal processes. The notice and comment

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[76]Ibid., 165.

procedures of the informal are combined with the public hearing requirement of the formal process.[77]

The informal method is the most common used in the making of regulations. There are ten possible steps in the informal rule making process:

Step 1: Society Perceives a Problem

Individuals bring problems to the legislature, which then investigate the problem.

Step 2: The Legislature Passes an Enabling Act

The problem is recognized and deemed important enough to empower an administrative agency to make regulations.

Step 3: An Agency Studies the Problem

Before the agency can promulgate a regulation, it must study the problem. The study is the scientific or factual justification for the regulation.

Step 4: The Agency Proposes a Regulation

A draft regulation which is based on the study's conclusions is then drawn up. Upon review within the agency, it is signed by the agency heads and sent to the Federal Register Office.

Step 5: Public Comment Period

Once published in the Federal Register, anybody has the right to comment on the proposed regulation. The time period for comment is usually 30 days and usually is presented in simple letter form.

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[77]Ibid., 166-7.

Step 6: The Agency Promulgates, Modifies or Withdraws the Regulation

Based on public comment, the agency must promulgate, modify, repropose, or withdraw the proposed regulation.

Step 7: Court Challenges to Promulgated Regulation

Once promulgated, the proposed regulation has the practical effect of law. Challenges can occur if the regulation does any of the following: Violates the U.S. Constitution; is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; or is beyond the authority of the enabling act.

Step 8: Enforcing Valid Regulations through Investigation, Prosecution, and Administration

The administrative agency can and does issue permits and licenses. It also can prosecute violators of its statutes and regulations.

Step 9: Agency Adjudicatory Hearing

The prosecution of violators of an agency regulation are brought to a hearing and stand before an administrative law judge(ALJ). The ALJ renders a decision based on the evidence.

Step 10: Appeal of Administrative Law Judge's Decision

A person suffering a legal wrong by agency action may take the matter to court. Only an agency's final action can be appealed to a court.[78]

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[78]Ibid., 167-9, 176-7, 187, 194-5.

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