



UTAH PESTICIDE SAFETY EDUCATION PROGRAM

The Utah Pesticide Safety Education Program's purpose is to train pesticide applicators to become certified or recertified (Table 1). In 1972 the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) was amended to require that all pesticides be registered with the EPA and that they be classified as either "general use" or "restricted use." The FIFRA states that pesticides which, when applied in accordance with widespread and commonly recognized practices, may cause unreasonable adverse effects on the environment including injury to the applicator, are to be classified as restricted use pesticides.

The application of these restricted use pesticides is limited to applicators that have been certified through a regulatory process to buy, use, or supervise the use of restricted use pesticides. These pesticide applicators are called certified applicators and they may be either commercial (for hire), noncommercial (part of their job requirement), or private (used on their own or rented agricultural land with no direct compensation received). From 1983 through 2006 the program has trained approximately 12,000 commercial/noncommercial applicators and 11,300 private applicators. Certification is for a period of three years and then these applicators must recertify. Utah State University is charged with the training of pesticide applicators. The Utah Department of Agriculture & Food does the actual certifying or recertifying through administering exams, closed book for commercial and noncommercial applicators, and open book for private applicators. Applicators must take written exams for initial certification and then recertify by attending approved training programs and earning continuing education units (CEU), 24 in 3 years for commercial and noncommercial applicators and 9 in 3 years for private applicators, or taking exams again.

Training courses are held on an annual basis in various counties around the state and persons who need certification or recertification should attend. Applicators become certified according to their category of pesticide use, but they can certify themselves in any or all categories. Categories available in Utah include 1) Agricultural, a) Plant, b) Livestock, 2) Forest, 3) Ornamental & Turf, 4) Seed Treatment, 5) Aquatic, a) Surface Water, b) Sewer Root Control, 6) Right-of-Way, 7) Structural & Health Related, 8) Public Health, 9) Regulatory, 10) Demonstration, Consultation & Research, 11) Aerial Application, 12) Vertebrate Animal, 13) Fumigation/Stored Commodities, 14) Wood-Preservation, and 15) Wood-Destroying.

Table 1. UTAH PESTICIDE APPLICATOR CERTIFICATION AND LICENSING REQUIREMENTS

	<u>Private</u>	<u>Noncommercial</u>	<u>Commercial</u>
Certification Required	RUP* Only	RUP* Only	All Pesticides
Certification Method	Written Exams	Written Exams	Written Exams
Certification into Categories Required	Yes	Yes	Yes
Direct Supervision Provision	Yes	No	No
Certification Period	3 Years	3 Years	3 Years
Recertification Methods	Written Exams or CEU [#]	Written Exams or CEU [#]	Written Exams or CEU [#]
License Period	3 Years	3 Years	1-3 Years

*Restricted Use Pesticides

[#]Continuing Education Units

Pesticides are substances or mixtures of substances used to kill, destroy, repel, or regulate pests such as insects, rodents, birds, weeds, unwanted plant growth, molds, fungi, bacteria, and other microorganisms. They are chemicals that have biological activity against the pest to be controlled, and they can be toxic to man, animals, or the environment if sufficient dose and exposure occur from improper use or disposal. Both federal and state laws make users of pesticides responsible for properly applying their pesticides according to label directions and for properly disposing of excess pesticides and their containers.

In Utah, all pesticides that are sold or used must be registered by the Environmental Protection Agency (EPA) and the Utah Department of Agriculture & Food. This requirement is found in the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Utah Pesticide Control Act of 1979. Both of these laws state that pesticides must be used according to label directions. Therefore, use inconsistent with the labeling is a violation of both federal and state laws. Fines, license revocation, and imprisonment are penalties for pesticide misuse.

The FIFRA defines pesticides as "any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest." The definition is broad and because of it there are a lot of pesticide types, formulations, and products (Tables 2 and 3). Currently, the EPA has approximately 20,000 products registered as pesticides that are formulated from about 850 different active ingredient chemicals, manufactured or formulated by more than 2,300 different companies, and distributed by about 17,200 distributors.

Table 2. TYPES OF PESTICIDES

Acaricides - mites	Insecticides – insects, spiders, ticks
Algicides - algae	Miticides - mites
Attractants - animals	Molluscicides - mollusks
Avicides - birds	Nematicides - nematodes
Bactericides - bacteria	Ovicides - eggs
Defoliants - foliage removal	Pediculicides - lice
Desiccants - water removal	Pheromones - insects
Disinfectants - microorganisms	Pisicides - fish
Fumigants – fungi, insects, rodents, weeds	Predacides - predators
Fungicides - plant pathogens	Repellents - animals
Germicides - germs	Rodenticides - rodents
Growth Regulators - insects, plants	Sanitizers - microorganisms
Herbicides - weeds	Sterilants - microorganisms
Hormones - insects, weeds	Wood Preservatives - fungi, insects

Table 3. PESTICIDE FORMULATIONS

Emulsifiable Concentrates	Soluble & Wettable Powders
Invert Emulsions	Water Dispersible Granules
Concentrate Solutions	Granules
Ready to Use Solutions	Dusts
Dry & Wet Flowables	Baits
Microencapsulations	Aerosols
Volatile Solids & Liquids	Pellets
Pressurized Gases & Liquids	Tablets

Pesticides are poisons. Chemicals that are pesticides must be poisons or they would not be able to perform their intended function which is to kill or repel pests. Poisons can have both risks and benefits. Risks can include poisoning of the applicator, nontarget animals and plants, or the environment. Benefits can include reduced losses to pests, lowered production costs, and protection of public health. Pesticide users want to maximize the benefits while minimizing the risks. The best way to accomplish this is to use pesticides only according to label directions including using a pesticide only on sites listed on the label and using the proper application equipment. These directions have been examined and approved by regulatory agencies. When pesticide label directions are followed, proper pest control should be achieved and hazards should be avoided. When pesticide label directions are not followed, the results are less predictable and increases the chance for hazards to be realized. Almost all poisonings and other pesticide accidents can be traced back to failure to adequately follow label directions.

Another reason why pesticide users should follow label directions is to protect the continued availability of the pesticide. If pesticides are misused, regulatory agencies, injured parties, anti-pesticide groups, and others will demand further restrictions on the pesticide and may even demand that the pesticide registration be canceled. Continued availability of a pesticide is dependent upon the pesticide user's willingness to follow label directions. When persons choose to use a pesticide, they are assuming legal responsibilities as defined by law, but also assume user responsibilities to not endanger the continued availability of the pesticide.

Utah State University, a land grant university, participates in several USDA programs of national interest that relate directly to pesticide use. These programs are administered through the Agricultural Experiment Station and the Extension Service. Three of these programs are 1) the Utah Pesticide Safety Education Program, which provides educational training and information to assist pesticide applicators in becoming certified or recertified to buy and use restricted use pesticides, 2) the Utah Pest Management Center Program, which collects information on the uses, benefits, exposures, environmental impacts, and application technologies of pesticides, and 3) the IR-4 High Value Specialty Crop Pest Management Program, which assists in obtaining pesticide registrations for high value minor uses by conducting efficacy, phytotoxicity, and residue studies. These pesticide programs assist the agricultural industry of Utah to efficiently produce food and fiber. They also assist in protecting the health and safety of pesticide applicators, the public, and the environment.

LEGISLATIVE BACKGROUND

The use of chemical pesticides increased significantly near the end of the 19th century. At that time only a few simple formulas existed and pesticide products were made by many small companies and often prepared by the farmers themselves after mail ordering the basic active ingredients. Congress became concerned about the sale of substandard or fraudulent pesticides and in order to protect the farmer the Federal Insecticide Act of 1910 was passed. This act specified the ingredient percentages for Paris green and lead arsenate as well as other pesticides in use at that time. It was primarily a consumer protection act for the farmer.

In 1947, the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) was passed. This act required pesticides to be registered with the USDA and required that they be labeled according to established standards. This law assumed that the pesticide user was a rational person and with sufficient information provided through labeling, proper pesticide selection and use would occur. The focus of the law at this time was primarily on the efficacy of the pesticide and less so on effects to nontarget species and the environment.

In 1970, the Environmental Protection Agency (EPA) was formed and assigned the responsibility of enforcing the FIFRA. EPA also was given the authority to establish tolerances for pesticide residues in edible foods, feed, and their packaging materials, while the Food and Drug Administration (FDA) was charged with enforcing those tolerances by testing these items for chemical residues.

In 1972, the most detailed and comprehensive pesticide legislation in history was passed, the

Federal Environmental Pesticide Control Act (FEPCA) of 1972. The act recognized the need to protect the general public and environment from the potentially harmful effects of pesticides. The consumer protection objectives were maintained as well. The core of the FEPCA was the requirement that the EPA deny registration to a pesticide unless it could determine that "when used in accordance with widespread and commonly accepted practices it will not cause unreasonable adverse effects on the environment." The unreasonable adverse effect is further defined as "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide." This definition required the EPA to conduct balanced risk versus benefit analyses for all pesticide uses. Congress recognized that pesticides will inherently cause some risks because of the type of biologically active chemicals that they are, but congress wanted that risk balanced against benefits derived from using pesticides.

Amendments to the FEPCA in 1975 reemphasized the Congressional decision that risk alone would not be sufficient reason to deny or cancel the registration of a pesticide, but rather both risks and benefits must be thoroughly examined in reaching a regulatory decision.

In 1988, amendments required a change of the EPA's responsibilities and funding requirements for the indemnification, storage, and disposal of suspended/canceled pesticides, a substantial acceleration of the pesticide reregistration activity, and imposed statutory time limits for processing certain types of pesticide registration activities. It also authorized collection of fees to support some of these new activities. The 1988 Amendments expanded the EPA's authority to regulate the storage, transportation, and disposal of pesticides by labeling requirements. Under the new law, the EPA may also require registrants and distributors to recall suspended and canceled pesticide products.

In 1996, the Food Quality Protection Act (FQPA) became law. EPA regulates pesticides under two major federal statutes. Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), EPA registers pesticides for use in the United States and prescribes labeling and other regulatory requirements to prevent unreasonable adverse effects on health or the environment. Under the Federal Food, Drug, and Cosmetic Act (FFDCA), EPA establishes tolerances (maximum legally permissible levels) for pesticide residues in food. Tolerances are enforced by the Department of Health and Human Services/Food and Drug Administration (HHS/FDA) for most foods, and by the U. S. Department of Agriculture/Food Safety and Inspection Service (USDA/FSIS) for meat, poultry, and some egg products.

For over two decades, there have been efforts to update and resolve inconsistencies in the two major pesticide statutes, but consensus on necessary reforms has been elusive. The FQPA represents a major breakthrough, amending both major pesticide laws to establish a more consistent, protective regulatory scheme, grounded in sound science. It mandates a single, health-based standard for all pesticides in all foods; provides special protection for infants and children; expedites approval of safer pesticides; creates incentives for the development and maintenance of effective crop protection tools for American farmers; and requires periodic reevaluation of pesticide registrations and tolerances to ensure that the scientific data supporting pesticide registrations will remain up to date in the future.