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Chapter 1 : Hawaii Bans Toxic Pesticide Chlorpyrifos in US First

Get this from a library! The new pesticide user's guide.. [B L Bohmont] -- Introduction to pesticides. Insects. Plant disease agents. Vertebrate pests. Weeds.

Because half-life estimates are highly dependent on the chemical, physical, and biological properties of the soil being tested, they cannot be accurately extrapolated to soils under different conditions. In general, degradation proceeds faster in moist soils than in dry ones, but the changes in half-life are not consistent from one soil to another. Half-lives in subsoils are usually much longer than those for the root zone because of the great reduction in microbial populations and the changes in physical and chemical conditions. Once a pesticide gets into groundwater, therefore, its degradation is likely to proceed at a slower rate than that predicted by its half-life in the root zone. Soil Properties Many soil characteristics affect leaching; the principal ones are: Texture affects the movement of water through soil and, therefore, also the movement of dissolved chemicals such as pesticides. The coarser the soil, the faster the movement of percolating water and the lower the opportunity for adsorption of dissolved chemicals. Soils with more clay and organic matter tend to hold water and dissolved chemicals longer. These soils also have far more surface area on which pesticides can be adsorbed. The coarser the soil texture, therefore, the greater the chance of a pesticide reaching groundwater. Soil permeability is a measure of how fast water can move downward through a particular soil. Water moves quickly through soils with high permeability, so frequent irrigation may be necessary. Because dissolved chemicals are transported by percolating water, in highly permeable soils the timing and methods of pesticide applications need to be carefully designed to minimize leaching losses. Soil organic matter influences how much water is retained in the soil and how well pesticides are adsorbed. Soil structure, the way soil particles are aggregated, also affects water movement. Compared with compacted soil, loosely packed soil aggregates are more likely to allow easy downward movement of water. Sometimes large openings macropores resulting from physical processes such as animal borings or freezing and thawing permit rapid water movement through fine-textured soils in which water movement would otherwise be slow. Site Conditions Conditions of the site also affect the potential for leaching of pesticides. Depending on climate and local geology, groundwater may be only a few feet below the soil surface. With such shallow depths to groundwater, the filtering action provided by the soil and the opportunities for degradation or adsorption of pesticides are low. Extra precautions are needed to protect groundwater in such cases. If rainfall is high and soils are permeable, water carrying dissolved pesticides may take only a few days to percolate downward to groundwater. The depth to groundwater does not remain constant over the course of the year. It varies according to the amount of precipitation and irrigation, whether the ground is frozen, and how much groundwater is being withdrawn by pumping. Groundwater levels tend to fall in summer, when evaporation and plant uptake are high, and in winter if recharge is hampered by frozen soils. Spring and fall generally are times of greatest recharge and, therefore, also of highest water table elevations. Such fluctuations in recharge quantities affect recharge quality as well. The high water table elevations in spring, for example, mean there is less possibility for soil filtration of pesticides leached from the root zone by heavy spring rains. In addition to the depth to groundwater, it is important to consider the permeability of the geologic layers between the soil and groundwater. Gravel and other highly permeable materials allow water and dissolved pesticides to percolate freely downward to groundwater. Layers of clay, on the other hand, are much less permeable and thus inhibit the movement of water. Groundwater quality is most vulnerable in areas where permeability of geologic layers is rapid. Regions with limestone deposits are particularly susceptible to groundwater contamination because water with dissolved pesticides can move rapidly through cracks in the bedrock underlying the soil, receiving little filtration or chance for chemical degradation before reaching groundwater. Whether water runs off the land surface or infiltrates into the soil depends on topography, plant cover, and soil type. Surface run off is greatest on land with steep slopes, sparse vegetation, and relatively impermeable soils. Water that runs off hilltops and hillsides tends to collect in depressions, where it sits until it evaporates or infiltrates into the soil. In flat areas with permeable soils, water will infiltrate into the ground rather than run off. Susceptibility to

leaching is highest in flat or depressed areas because of the greater chance for infiltration rather than runoff. Climate and Irrigation Practices. Areas with high rates of rainfall or irrigation are most susceptible to leaching of pesticides, especially if the soils are highly permeable. If high rainfall or heavy irrigation occurs during or shortly after the application of agricultural chemicals, the chemicals can be quickly leached from the root zone. Once leached below the root zone, pesticides cease to be available for effective action on the target pest and become potential groundwater contaminants. Another factor determining leaching potential is the way in which a pesticide is applied. The injection or incorporation of a pesticide into soil makes it readily available for leaching. The larger the amount used and the closer the time of application to a heavy rainfall or irrigation, the more likely that any pesticide prone to leaching will be lost to groundwater. When practicing chemigation, the risk of pesticide leaching can be minimized by using the lowest amount of water needed to activate the pesticide. Protecting Groundwater Many factors determine whether a pesticide will reach groundwater, including its chemical properties, the soil type, the depth to groundwater, and the pesticide management practices. By combining all these factors, the areas most vulnerable and the practices most conducive to pesticide contamination of groundwater can be determined table 3. Greatest care needs to be taken with pesticides that are highly soluble, do not adsorb strongly to soil particles, and persist for a long time in soil. The Environmental Protection Agency has established a list of such pesticides, called suspected leachers, for which extra precautions should be used to prevent contamination of groundwater. Some of these are listed in table 4. Factors indicating the greatest likelihood of groundwater contamination by pesticides Pesticide properties high solubility low adsorption persistence Soil characteristics sand and gravel low organic matter content Site conditions shallow depth to groundwater wet climate or extensive irrigation depressions or flat areas where water collects Management practices poor timing with respect to climate overapplication rate too high or application too frequent Recommended Applicator Practices Pesticide applicators can minimize leaching by following these guidelines: Use pesticides only when necessary and in the minimum dose consistent with effective pest management. Determine the soil type and its susceptibility to leaching before using pesticides. Apply pesticides specifically to the target site,avoiding wells and surface water such as ponds and streams. Choose pesticides with low susceptibility to leaching. Follow the storage, use, and disposal directions on the pesticicle label. If regionally specific recommendations such as the l Cornell Recommends for Field Crops are available, use these instead. Measure carefully, and stay within the recommended application rates. Properly calibrate and maintain application equipment. Avoid pesticide spills, and prevent back-siphoning of pesticide-contaminated water into the water source. Properly dispose of any leftover pesticides, tank mixes, and rinse water according to label instructions or Cornell Cooperative Extension recommendations. Store pesticides safely, in the original labeled container and in a cool, well-ventilated location away from wells, pumps, or other water sources. Maintain records of pesticide use to avoid overuse and to help plan future applications. Delay irrigation at least one or two days after pesticide applications. Avoid irrigation runoff, especially in clay soils, to decrease erosion and pesticide contamination of water supplies. Periodically inspect wells to ensure that their location is distant from pesticide application sites and that the well seals are properly constructed and maintained to prevent the entry of surface contaminants. Spray-apply pesticides only under calm, no-wind conditions. Wherever possible, use Integrated Pest Management. Integrated Pest Management IPM seeks to reduce pesticide use to the minimum level necessary to produce high-quality food and agricultural products while protecting human health and environmental quality The New York State IPM program operates under five objectives: To minimize crop losses caused by insects, weeds, and plant diseases. To optimize the use of cultural management techniques, biological pest controls, and resistant varieties. To maximize the effectiveness of pesticide use. To reduce pest management costs. To minimize the development of pesticide resistance. IPM encourages natural control with beneficial organisms such as predators, parasites, and pathogens. Monitoring, or "scouting," is used to detect pest infestations so that pesticide applications can be targeted to times of need. Such field monitoring can significantly reduce pesticide use while protecting crop yields. Thrips populations were 42 percent lower than those on farms that did not participate in the field scouting program, and the quality of the harvested onions was unaffected. Most groundwater contamination problems are associated with pesticides applied to control

soil-dwelling pests such as nematodes, weeds, pathogens, and insects. IPM programs of greatest importance in reducing groundwater contamination are those that minimize the use of soil pesticides. Such methods include crop rotation, fallowing, solarization, the use of resistant cultivars, and the use of less persistent pesticides. Studies have shown that nematode damage of cotton yields in California can be fought just as effectively by rotating crops with resistant tomato cultivars as by fumigating the soil before planting. Nematode-resistant potato varieties likewise have reduced the need for pesticides on potato crops. To control the golden nematode, growers formerly had to both fumigate the soil prior to planting and apply other pesticides during the growing season. Using eleven newly developed resistant varieties, New York State potato growers have reduced pesticide use by 56, gallons over the past four years. Various estimates suggest that the adoption of currently available IPM practices would permit a 40 to 50 percent reduction in the use of insecticides within a five-year period and a 70 to 80 percent reduction in the next ten years, without sacrificing crop yield or grower profit. Lower pesticide use would accordingly reduce the potential for groundwater contamination. When pesticides do get into groundwater, cleanup of the contamination usually is impossible. The contamination can last many years and spread over a large area before dilution and chemical decay eventually reduce the pesticide concentrations to levels acceptable for drinking water. A major question facing modern agriculture, therefore, is how to control pests and protect crop yields without allowing pesticides to contaminate underlying groundwater. Many factors determine whether a pesticide will leach to groundwater, including pesticide properties, soil characteristics, site conditions, and management practices. The pesticides most susceptible to leaching are those with high solubility in water, low adsorption to soil, and long-term persistence. When these pesticides are applied to sites with sandy soils, shallow depth to groundwater, and either a wet climate or extensive use of irrigation, the risk of groundwater contamination is high. Pesticide applicators can take measures to help protect groundwater quality. These include assessing the susceptibility of the site before using pesticides, then tailoring pesticide applications to the particular site conditions. IPM programs can help protect groundwater by promoting the use of a variety of economically and ecologically sound pest control techniques rather than sole reliance on chemical pesticides. For Further Reading Cohen, S. Potential pesticide contamination of groundwater from agricultural uses.

Chapter 2 : The New Pesticide User's Guide - Bert L. Bohmont - Google Books

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Multiple Applicators or Sales Permits If your organization employs multiple applicators , just choose one of them to enter in this form. If your business has more than one business registration number , enter the one for the main business office. You may â€" but are not required to â€" submit the other business registration numbers using a Form 26A. See this FAQ for more information. If your business has more than one commercial permit number , you may enter one number here and provide separate Form 25 s or Form 27 s for each commercial permit number. The header areas of both forms have a commercial permit number field, which is editable. You may also send us separate reports for each commercial permit number. The pesticide applications they made should be entered on a Form If any of the applicators that you are reporting for made any applications during the report year, you should submit a Form You may enter all your applications in one file even if they were made by multiple applicators; we do not need a separate report for each applicator. If you are reporting for a pesticide sales business and you sell restricted use pesticides, use Form If you sell pesticides to private applicators, we will need a Form If you have a commercial permit number , you must submit either a Form 25 or a Form 27 or both. Be sure to include applicators who did not make applications on your report and applicators who left your organization during the report year. If your organization is a pesticide sales business, you must file a report even if you did not make any sales during the report year. You can report two different types of sales on Form 25 ; report either sales to another commercial permit holder who will resell the products or sales to commercial applicators for their end use. Options D and O have drop down lists for specifying the sales type. If you have both types of sales to report, please send us a separate form for each type. Opening up a Form When you have decided which form s to use, click the corresponding radio button in the Report Forms area. Do you want to start a new file or add to an existing one? To start a new file, click on the Blank Form button. For an existing file, click the Existing Form button. This will open up a dialog in which you can choose the file you want. For step-by-step instructions on using Option A to validate your files, see text file validation steps. As of version 6. Each form is used to report a particular type of pesticide-related activity.

Chapter 3 : Option A User Guide - Option A - PRL Service Bureau

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How to use This manual Introduction This manual is intended as a resource for companies and individuals who wish to have their pesticide products registered by the U. OPP comprises nine divisions of scientists, regulatory specialists, and other staff. A pesticide product is defined as a pesticide in the particular form including composition, packaging, and labeling in which the pesticide is, or is intended to be, distributed or sold and includes any physical apparatus used to deliver or apply the pesticide if distributed or sold with the pesticide. Before any pesticide product that EPA has not exempted from registration requirements can be lawfully sold or distributed, EPA performs a rigorous, comprehensive scientific assessment of the product, resulting in a registration decision. Under this review, the Agency evaluates other constituent substances including inert ingredients , and the proposed use pattern s to ensure that, when the product is used according to labeled directions, no unreasonable adverse effects on human health or the environment will occur. Once an EPA registration has been granted, applicants will then need to comply with the individual registration requirements imposed by the States in which they wish to market their product. Refer to Chapter 17 for information on State regulatory authorities. The establishment in which a pesticide product is produced must also be registered. Refer to Chapter 14 for information on pesticide producing establishments. Top of Page The Label is the Law! Once EPA has granted a registration, EPA not only notifies the requesting company of the decision but also will approve a submitted label for the product. All registered products must include an approved label on every package. The label is the law! Once EPA approves a label during the registration evaluation, it generally may not be altered or changed by the company unless specifically authorized by EPA during a subsequent label review. Thus, as part of any registration application submitted to EPA, applicants must provide a proposed label containing detailed information. During its review, EPA can approve the label as submitted, approve the label with comments, or disapprove the submitted label. For more information on labels, see Chapter 2 in this manual. While both the manufacturing-use and end-use products must be registered, the focus of this manual is applications for the registration of end-use products. This manual is organized into 21 chapters see Table of Contents at right that comprehensively discuss issues related to the registration of pesticide products. Each chapter includes a list of references that can be used to further understand the issues presented. Chapter 1 also provides an overview of how to have a pesticide evaluated by EPA - the types of data required, how it is submitted, and other supporting documentation. Chapters 2 , 3 , and 4 provide specific information to help applicants determine data and other registration requirements depending on whether their product is classified as an antimicrobial, biopesticide, or conventional chemical pesticide. PRIA established pesticide registration fees for some registration actions, requiring applicants to pay a fee, in exchange for which, EPA is obligated to reach registration decisions within defined timeframes. Chapters 6 and 7 discuss amendments to currently registered pesticides and instances that do not require EPA review but that can be accomplished by notification to EPA. Chapter 8 explains how EPA considers inert ingredients in the evaluation of pesticide products and what type of documentation is required for review. Inert ingredients are pesticide product ingredients that are not active against target pests. Chapter 9 explains what requirements must be adhered to when companies that are not the original registrant distribute a registered pesticide product. Chapter 11 discusses tolerance petitions, i. Devices are subject to other types of regulatory oversight, as listed in 40 CFR Chapters 14 , 15 , and 16 provide specific information on obtaining an EPA Establishment Number, how to submit data and Confidential Business Information to EPA, and how to transfer product registrations and data rights to different companies. Chapters 17 and 18 present useful information on the role played by state regulatory agencies and other federal agencies in pesticide oversight in the United States. Registrants may also have certain obligations under state and other federal agencies. Chapters 19 and 20 provide detail on obtaining publications and forms related to pesticides. Chapter 21 gives specific directions for submitting applications to EPA, and how to contact appropriate offices within the Office of Pesticide

Programs.

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Chapter 4 : NJDEP-Compliance and Enforcement - Commercial Pesticide Applicator

Get this from a library! Pesticide product information on microfiche: a user's guide. [United States. Environmental Protection Agency. Office of Pesticide Programs.

Recertification of Private Applicators Part 1. General Information Pesticide Applicator Certification is designed to demonstrate a certain level of competency by pesticide users on the safe use of pesticides. Users of pesticides are classified as either private applicators or commercial applicators. Examples of private applicators are dairy farmers, vegetable or fruit growers, greenhouse growers, ranchers, nurserymen, and home gardeners. Request a private exam application if your occupation requires private certification. Any person who uses, or supervises the use, of pesticides on a "for hire" basis. Examples of commercial applicators are those who work for exterminators; landscapers; tree services; aerial applicators; weed control firms; pet groomers; apartments, motels, nursing homes, restaurants, etc. The definition of a Pesticide Applicator Business is a business or person who, either wholly or in part, holds himself out for hire to apply pesticides. Commercial Applicator Certification Certification is accomplished by passing pesticide applicator certification exams. Everyone must pass the basic "Core" certification exam. To be eligible to take the Core exam, the applicant shall submit proof of completion of a Department approved Basic Pesticide Training Course see Notice. The course shall provide a working knowledge of the following: Proof of course completion must be submitted with the Core Certification Exam application form. In addition to the Core exam, one or more "Category" certification exams must be passed. The Category exams needed depend on the type of pest control that will be done. To be eligible to take a Category exam, the applicant must complete a minimum of 40 hours of "on-the-job training" OJT for each category applied for. By definition, 40 hours of on-the-job training shall consist of a minimum number of separate applications, as specified in the following table. Certification in Category 10 and 13 is exempt from the category training requirements. Certification in Category 11 requires training in aerial only. Proof of the required training in Category 11 shall be submitted with the exam application form. Check the yes block and fill in the category training received; 2. Submit the "Category Training Verification Form" with the exam application form. Forty hours of OJT is required if it is available to you. For other categories, an exemption is available. Some of the situations that would qualify for this exemption include a person who is starting their own business, or someone working for an apartment complex, school or government agency and where there is no Certified Pesticide Applicator currently employed to give the training. To apply for the exemption, indicate on the Category Training Verification Form why the 40 hours of OJT is not available to you and submit along with the exam application form. You may also sign an affidavit stating that you have at least one year of work experience in the categories you are applying for. Submit the signed affidavit along with the exam application.

Chapter 5 : Pesticide Registration Manual: Introduction | Pesticide Registration | US EPA

The UK Pesticide Guide is the authoritative reference for all pesticide products and adjuvants approved for use in agriculture, amenity, forestry and horticulture. NEW for Buffer Zones, DRTs & 15 New Active Ingredient Profiles.

Chapter 6 : New EPA Guide Will Help Users of Agricultural Pesticides Comply with Revised Standard

Users may also upload and submit packages created in the e- Submission XML format or the EPA e-Dossier Builder format. In addition to preparing packages, users may also respond to Data Call-Ins (DCIs).

Chapter 7 : Bohmont, Standard Pesticide User's Guide, The, 7th Edition | Pearson

For courses in Plant Protection, Pesticide Application, Entomology, Weed Science, Plant Pathology, Horticulture, Golf Course Management, Agronomy, Range Management and Wildlife Management. The Standard Pesticide User's Guide,

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Seventh Edition, covers all aspects of pesticide principles and use.

Chapter 8 : Welcome to PSEP!

Pesticide Use Compliance Guide for Employers and Businesses informs users, pest control businesses, and employers of their responsibilities when working with handlers and field workers. Compliance assistance for employers discusses laws and regulations, pesticides, licensing and certification, forms, and other related information.

Chapter 9 : PSEP :: Fact sheets :: Pesticides and Groundwater: A Guide for the Pesticide User

Guidance on authorisation for pesticides used in Agriculture, Horticulture or the Home Garden (Plant Protection Products). Guidance on how to use these products safely and information about controls over pesticide residues in food.