



Drifting Around the World

1 Drifting Around the World

Although many of you are aware of local laws and regulations regarding drift, I thought it would be interesting to see how other states and countries handle it.

2 Pesticide Use on Field Crops in Illinois

A recent law passed in California has a significant impact on pesticide applicators in that state. The law requires applicators to assist with paying medical bills for people who become ill from pesticide drift or other types of misapplications. The recently passed bill also requires emergency-response planning for pesticide-drift incidents. This underscores the focus that the public has placed on controlling pesticide drift.

3 Pesticides and E-Commerce

Germany has developed two tables that are used by applicators to determine the risk of drift damage during an application and to then reduce that risk. The tables are based on many field experiments and modeling. The first table contains values for drift deposit at set distances downwind. Because of the differences in application methods associated with various crops, this table is broken down into field crops, fruit crops early and late in the season, grapes early and late in the season, and hops. The second table lists drift-reduction technologies available for applicators. Each item in this table has a percentage value, either 50%, 75%, or 90%, that is used to reduce the drift value from Table 1 if the applicator uses that technology during the application.

5 Pesticide Use by Volunteers

6 Commercial Pesticide Training Information Available

The Australian Pesticides and Veterinary Medicines Authority also uses models to determine no-spray zones used to protect sensitive areas. These models estimate likely quantities of spray deposit downwind from the application. They use the droplet-size spectrum, highest boom height, and highest wind speed on the label to create a worst-case scenario for estimating drift deposit. The models determine the distance at which a certain type of risk might occur. The three main categories of risk are human health, the environment, and international trade. International trade is based on pesticide-residue tolerances of other nations purchasing Australia's commodities and is often the greatest of the three risks. The model uses toxic thresholds for the pesticides based on the active ingredient and compares these levels to the estimated amount of pesticide likely to be deposited at specific distances downwind from the application. The distances at which a risk becomes unacceptable based on toxicity and deposit become the distance of the no-spray zone.

6 Pesticide Safety Education Publications

6 Pesticide Update

In Canada, pesticide use is regulated by the Pest Management Regulatory Agency (PMRA). Currently, Canada utilizes buffers to protect sensitive areas from drift. The buffer zone is calculated using a model developed from information about sensitive areas, weather conditions, and spray equipment. Buffer zone distances are pesticide specific and are based on an individual chemical's toxicity. To determine a pesticide's potential buffer zone, it is evaluated for risks to nontarget organisms. An identified risk to a nontarget organism is based on the toxicity of the pesticide and the potential level of exposure to that organism from drift. Risks are then used to identify sensitive areas that need to be protected from drift, and this information is used in the model.



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Another part of the model determines the amount of deposit from drift likely to occur downwind from the application. This drift-deposition model is based on data from various researchers who have studied drift. The risk level is then combined with the drift-deposition data in the model to calculate the buffer zone distance. The greater the risk, the larger the buffer zone distance is. The buffer zone is defined as the distance between end of the spray swath and the nearest sensitive area where an identified risk occurs. This calculated buffer distance is put on the label and must be used whenever an application is made near an identified sensitive area.

The PMRA is considering a modification to this buffer system that would allow applicators to use drift-reducing technologies and lower the distance required for the buffer zone. This modification is being designed with an emphasis on creating a method applicators can use to calculate a required buffer zone distance that is quick and easy. With this proposed new method, buffer zone distances will still be calculated using the previously described method and placed on the label. In addition, applicators will be provided with a table containing multipliers that can be used to reduce the buffer zone distance on the label. The multipliers are divided into three categories: sensitive areas, meteorology, and application equipment. These categories are combined in various ways and used to create the tables that list the multipliers.

For the sensitive areas, the only multiplier is for water depth of large bodies of water; rivers or streams are not included. Deeper water corresponds to a greater volume of water. A greater volume would dilute any concentration of pesticide deposit more than a lesser volume of water. A diluted pesticide concentration means lower risk. For deeper waters, multipliers are listed that reduce the required buffer zone on the label. While it might seem logical that greater surface area for a body of water would have the same effect, a greater surface area also means a larger site on which drift deposition can occur.

Due to the relationship between droplet size and wind speed, the meteorological and equipment categories are combined to create several tables based on the type of application equipment being used: field (ground) sprayers, air-blast sprayers, chemigation, and aerial sprayers. Within each table, wind speeds are grouped into categories appropriate for the application method. A lower wind-speed category yields a multiplier that reduces the buffer zone.

Droplet size is critical for determining the likelihood of drift, and these tables use ASAE droplet-size categories. A larger droplet category results in a multiplier reducing the buffer zone. For ground sprayers, boom height is divided into two separate tables, with the lower height class having multipliers that decrease the buffer zone more so than the higher boom height class. Drift-reducing boom shrouds and cones are also used to create separate tables with multipliers that result in a greater reduction of the buffer distance. For air-blast sprayers, using a cross-flow or tunnel-type sprayer allows for a reduction in the buffer zone distance.

Here is an example (using the metric system because these tables come from Canada) of how this system would work. Let's say you are using a pesticide that requires a 50-meter buffer zone when making the application near streams, which you plan to do. You are using a boom sprayer with the boom height set at 50 cm and nozzles that produce a coarse droplet spectrum. At the application site, you measure the wind speed and determine it is 11 km per hour (at least the metric system doesn't change how we measure time). Using the multiplier table for ground sprayers, you determine that the boom height, coarse droplet size, and wind speed give you a multiplier of 0.3. To determine the buffer zone required for your application, you take 50 meters and multiply it by 0.3, equaling 15 meters. This is the buffer zone distance you need to use for the application, rather than the original buffer of 50 meters.

This system is currently a proposal under consideration. As it now stands, the

standard buffer zone distance would still be on the label. The multiplier tables would be posted in a separate publication available to applicators. It would also contain educational material on drift-reducing technologies and methods. (Scott Bretthauer)

Pesticide Use on Field Crops in Illinois

The percentage of corn and soybean acres treated with pesticides in Illinois remains very high. Use of herbicides and insecticides accounts for the largest share of pesticide applications made each season. Certain producers of field crops rely on fungicides at times. Their use likely will increase as a result of the recent soybean rust discovery in the United States

Use of soil insecticides applied during planting is common throughout much of Illinois. The majority of soil insecticide applications are aimed at controlling the corn rootworm complex. The practice of controlling corn rootworm larvae is no longer limited to continuous corn (non-rotated corn); control may now also be needed in areas where crop rotation has failed to prevent larval injury to first-year corn. Soil insecticides applied for control of soil-dwelling insects such as white grubs, wireworms, seedcorn mag-gots, and grape colaspis are being applied to more acres each year. Many entomologists believe the trend toward earlier planting dates has led to an increase in grub-related problems.

Use of seed treatments to control soil insects has created a great deal of interest, and these products are being used on an increasing number of acres. All of the most recently registered insecticidal seed treatments are systemic and are members of the nicotinoid chemical class. Additionally, current *Bacillus thuringiensis* products for corn rootworm control do not protect against other soil insects. *Bt* proteins in transgenic corn rootworm hybrids are specifically targeted for corn rootworm larvae. Some so-called

“stacked” hybrids may contain a *Bt* protein specific to corn rootworm larvae and another *Bt* protein effective against European corn borer larvae. Some stacked corn hybrids (triple stacks) may produce two *Bt* proteins and also confer specific herbicide tolerance. Transgenic corn rootworm hybrids are given a nicotinoid insecticidal seed treatment. Many cornfields are not infested with economic levels of secondary pests. Consequently, the use of insecticidal seed treatments is primarily prophylactic (no scouting input) and, in many instances, may not be needed.

Companies also are currently pursuing labels for insecticidal seed treatments in soybeans. The number of field crop acres that potentially could be treated with insecticides from the same chemical class is extremely high. However, this is not only true with insecticidal seed treatments. Many corn acres are treated on an annual basis for insects, with little or no idea of the pest populations present in the field. This prophylactic approach results in an overuse of insecticides, causing concern regarding the potential development of insecticide resistance.

Illinois producers treat the vast majority of corn and soybean acres with herbicides. The total pounds of herbicide active ingredients applied in the state is much lower than in the past, primarily due to the use of herbicides that provide weed control at lower rates of active ingredient. Although the use of glyphosate-resistant soybean varieties has provided many economic and environmental benefits, the over-reliance on this technology has prompted concerns related to the development of resistant weed biotypes. Biotypes are populations within a species that possess characteristics not common to the species as a whole (herbicide resistance in this case). At least 10 weed biotypes in Illinois are resistant to one or more families of herbicides. With the increasing threat of herbicide resistance, sound weed-management strategies should be used, and the following exploitive practices should be avoided: failure to rotate crops; over-reliance upon and fre-

quent use of a single, highly effective herbicide; overuse of tank mixtures of herbicides with similar modes of action; and lack of integration of chemical and non-chemical weed-management strategies.

The decision to use a pesticide should be based on (1) information obtained from scouting; (2) knowledge of economic thresholds; and (3) an awareness of the potential benefits and risks associated with a treatment. If used improperly, pesticides can cause detrimental effects to the applicator, the crop, or the environment. Pesticides can provide effective control, but they should be used judiciously and in combination with nonchemical methods that can be incorporated into the cropping system. Once a decision to use a pesticide has been made, several questions should be thought through carefully.

- Is the pest you want to control listed on the pesticide label?
- Does the label state that the pesticide will control the pest, or does the word *suppression* appear on the label?
- Are you familiar with relevant university research and recommendations?
- Is the recommended rate of application economical for your operation?
- How toxic is the pesticide? dermally? orally?
- Is the pesticide a restricted-use product?
- Does this pesticide have the potential to contaminate groundwater, even when label recommendations are followed?
- Will the use of this pesticide expose humans to health or safety risks?
- Will the use of this pesticide threaten wildlife populations?
- If a herbicide is scheduled to be applied to a transgenic crop, is the pesticide labeled for use with that transgenic variety? Are they compatible?
- If you intend to apply an insecticide to a transgenic corn hybrid, are you aware of the insect resistance management protocols that need to be followed?

Although pesticides can greatly enhance the production of food and fiber during outbreaks of pests, their misuse may create adverse environmental effects. The general public will increasingly demand accountability from those within the agricultural community who have the daunting challenge of providing an abundant, safe, and nutritious food supply while sustaining environmental quality.

Clearly, the emphasis for the future lies in optimizing environmental quality while minimizing crop losses. (*Kelly Cook, Michael Gray, George Czapar, Suzanne Bissonette. Slightly edited by Phil Nixon and Michelle Wiesbrook*)

Pesticides and E-Commerce

The Internet remains a relatively new and evolving medium for marketing a wide range of goods and services. As such, electronic commerce (e-commerce) continues to receive considerable attention from lawmakers and regulatory agencies, particularly with respect to collecting taxes and a host of legal-compliance issues. Although the dust hasn't completely settled, it is clearing in some areas. The purpose of this article is to help the reader understand the range of laws and regulations that come into play when buying, selling, or otherwise facilitating pesticide transactions over the Internet.

All types of pesticides are sold throughout the Internet, including agricultural-use pesticides and antimicrobial products. The sheer number of Internet sites offering pesticide products—including some questionable or unknowing vendors who may put consumers at risk—and the multijurisdictional nature of Internet sales raise significant questions about the applicable law and regulations. The United States Environmental Protection Agency (U.S. EPA) is working extensively with the states through the Association of American Pesticide Control Officials (AAPCO) to develop an informed and

nationally consistent approach to pesticide e-commerce activities. The U.S. EPA believes the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) does not differ as a legal matter to the sale and use of pesticides for agricultural, or any other, use when such sales or uses occur through e-commerce rather than traditional channels of trade. In addition, states that have begun to actively regulate pesticide-related e-commerce apply their state pesticide laws and regulations to sellers and sales on the Internet in the same manner as they do with more traditional methods of sale and distribution.

What laws apply if you purchase pesticides over the Internet? The label is the law. The pesticide must be used in accordance with the instructions on the label. It is a violation of federal law to use a pesticide in a manner inconsistent with its labeling. If you purchase a restricted-use pesticide (RUP), federal law requires that you must be a certified applicator in the state where the pesticide will be used. Applicator certification, although required by both state and federal law, is administered by the individual states.

What laws apply if you are simply "handling" a pesticide? Handling of pesticides may include, but is not limited to, the listing, sale, purchase, shipping, transport, delivery, receiving, preparation, and use of the product. Some of these actions are covered by FIFRA and state laws relating to the use of pesticides. Shipping, transport, delivery, and acceptance of pesticides are covered by laws and regulations administered by the states, the U.S. Postal Service, and the U.S. Department of Transportation. If you are handling a pesticide in any of these contexts, you should contact the carrier you want to use for shipping and your state pesticide officials before transporting the product.

What laws apply if you sell pesticides over the Internet? If you are selling a pesticide over the Internet, be aware that there are federal and state laws affecting the shipment, proper transportation, and delivery of the pesticide. Federal laws administered by the U.S. EPA, the U.S. Department of Transportation, U.S.

Postal Service, and the U.S. Department of Homeland Security regulate the shipping and transportation of pesticides. Each state has its own laws regulating the sale, distribution, and use of pesticides within that state. You should check the laws of all states involved.

The EPA regulates the sale, distribution, and release of pesticides, pesticide products, and pesticide devices under FIFRA. In general, under FIFRA, it is against the law to sell unregistered, misbranded, suspended, or canceled pesticides in the United States. This means that if someone tries to sell via the Internet a pesticide product or device that is mislabeled, not registered, or no longer registered, that person could be breaking the law and would be subject to civil or criminal penalties, including fines. This is an important point, especially since the Internet has made it easy to find, purchase, and resell items from almost anywhere in the world. For a detailed discussion regarding importation and the Internet, see the U.S. Department of Homeland Security's Customs and Border Protection (http://www.cbp.gov/xp/cgov/import/inrequent_importer_info/internet_purchases.xml).

Before a company or individual can sell or distribute any pesticide in the United States, the U.S. EPA must review data on the pesticide to determine that it poses no unreasonable risks to human health or the environment. Once the U.S. EPA has made that determination, it will license or register that pesticide for sale, distribution, or use in accordance with label directions. All label language must be approved by the U.S. EPA before a pesticide can be lawfully sold or distributed in the United States. The overall intent of the label is to provide directions for product use, while managing risks to human health and the environment. It is a violation of federal law to use a pesticide in a manner inconsistent with its labeling.

Any material, whether naturally derived or not, that is sold or distributed with the intent to control or eliminate any pest (weeds, insects, microorganisms, etc.) is classified as a pesticide. By their

very nature, pesticides create some risk of harm to humans, animals, or the environment because they are designed to kill or otherwise adversely affect living organisms. Many household products are pesticides. While there are a few exemptions, most pesticides require registration with the U.S. EPA and any state in which they are sold or distributed. Even advertising products or materials that may be classified as pesticides can be construed as offering the pesticide for sale.

It is the seller's responsibility to ensure that the pesticide is registered and labeled according to federal standards before offering it for sale over the Internet. The seller must comply with applicable state laws as well. The following important points should be considered:

- **Federal and state law:** The U.S. EPA administers the federal pesticide law, and each state has a pesticide law that further restricts and/or clarifies local administration of pesticide commerce. BOTH levels of law must be followed.

- **Distribution:** Actual distribution of pesticides is regulated by both the U.S. EPA and the states.

- **Dealer licensing:** Some higher-risk pesticides are classified as restricted-use pesticides (RUP) and are more stringently regulated by the states and the U.S. EPA than general-use pesticides. RUPs may be sold only by licensed dealers and purchased only by certified applicators. In many states, sellers must be licensed if they advertise or offer for sale a pesticide or pesticidal product within the state, whether or not the site is physically located in the state. In addition, most states require sellers to comply with the various state laws regulating the offer and sale of pesticides even if they do not take actual, physical possession of the products offered for sale (such as through auction sites or electronic brokerage).

- **Certified applicators:** RUP labels require sellers and/or buyers to be licensed or certified by the state agencies where either party may reside. Some states require that sellers and/or buyers not physically located in the state, but

conducting business there, must be licensed or certified as well.

- **Records:** Many states require that transaction records be kept and regular reports of transactions be submitted. Under federal and state law, these records must be available for review by duly authorized inspectors at all times.

What enforcement actions has U.S. EPA taken to date? Through its early enforcement activities pertaining to Internet pesticides, the agency has gained valuable experience in enforcement against e-commerce violators. U.S. EPA worked cooperatively with the Federal Trade Commission (FTC) on regulating Web sites that sold pesticides targeting Anthrax. As a result, U.S. EPA and the FTC are sharing information on pesticide-related e-commerce and furthering their partnership in the regulation of this aspect of e-commerce. Future areas of focus include Web sites selling restricted-use pesticides to persons who are neither trained nor certified in the application of these toxic chemicals as FIFRA requires.

Resources

State-based search engine for certified applicators and registered pesticides: <http://www.kellysolutions.com/nasdamap.htm>

Illinois Department of Agriculture
Bureau of Environmental Programs
P.O. Box 19281, State Fairgrounds
Springfield, Illinois 62794-9281
Phone: (217)785-2427

Web site: <http://www.agr.state.il.us/Environment/index.html>

Illinois Department of Transportation
2300 S. Dirksen Parkway
Rm. 009
Springfield, IL 62764
Phone: (217)782-2984

This article was adapted from the following sources:

“E-Commerce Pesticides.” U.S. Environmental Protection Agency’s National Agricultural Compliance Assistance Center. March 30, 2004. <<http://www.epa.gov/agriculture/tecom.html>>. Accessed November 22, 2004.

“The Sale of Pesticides over the Internet.” U.S. Environmental Protection Agency’s National Agricultural Compliance Assis-

tance Center. April 1, 2004. <<http://www.epa.gov/Compliance/assistance/pesticides/pestecom.html>>. Accessed November 22, 2004.

“Facts on Pesticides Sales in E-Commerce.” U.S. Environmental Protection Agency’s National Agricultural Compliance Assistance Center. April 1, 2004. <<http://www.epa.gov/Compliance/assistance/pesticides/pestecomfact.html>>. Accessed November 22, 2004.

(Bruce Paulsrud)

Pesticide Use by Volunteers

Many hands make light work. Many organizations depend greatly on volunteers to assist with combating invasive species in parks and other natural areas. Cultural and preventative tactics such as hand removal of invasive plants are often used first. However, sometimes chemical controls play an important part of an invasive-species management plan. Volunteers are often relied upon to apply pesticides. There are several good general-use products that are easily obtainable, relatively inexpensive, and available for use by home gardeners. Many of these products can be applied on a larger scale, and they often are. However, applying pesticides in the home garden is a completely different situation than applying in a natural area.

You’re ready to spray, aren’t you? It’s Saturday morning and you’re donating your time and pest-control abilities to your local natural area. You are armed with your spray bottle of herbicide you bought at your local garden center. But are you armed with your pesticide applicator license? Did you know that you needed one?

You must be licensed. If you don’t apply pesticides for a living, you might not be aware of this. The Illinois Pesticide Act states that if you apply pesticides in the course of your employment or on property you do not own, you must be licensed. And all types of applications count. Whether you spray the product or

dab it on the leaves with a sponge, you are still making a pesticide application. Also, this means all pesticides, even the ones you use at your home without a license. There are some exceptions; certain minimum-risk pesticides do not require federal registration. EPA’s “25b list,” which includes garlic and garlic oil, can be found at http://www.epa.gov/pesticides/biopesticides/regtools/25b_list.htm. Illinois has the right to require registration of these products anyway. If it does, you still need a license to apply. You can search for active ingredient registration at <http://www.kellysolutions.com/IL/searchbychem.asp> or call the Illinois Department of Agriculture (numbers given below).

How to obtain a license. You will need to take the General Standards exam (100 multiple-choice questions) and score at least a 70%. This will make you an “operator.” However, at least one person from your organization will need to go one step further and become an “applicator.” Operators work under the direct supervision of the applicator. An operator can become an applicator by scoring at least a 70% on an appropriate category exam (50 multiple-choice questions). There are various categories, including pest control in rights-of-way, turf, ornamentals, fruit, and vegetables; each is a separate exam. As your entire range of pesticide use must be covered by the categories on the applicator’s license, this could mean several exams. For example, University of Illinois Master Gardeners are volunteers who often have demonstration gardens hosting a variety of plant species. The Demonstration and Research category exam would best compliment their application needs, but taking several other appropriate category exams is fine too. For vegetation control in natural areas, the Rights-of-Way category is usually the best suited. Be sure to put some consideration into choosing your applicator(s). If the applicator is out of town or not available, the operator may not legally apply pesticides. You must be in daily contact with each other. In essence, the applicator must be able to ar-

rive at the scene in a timely fashion should an accident occur.

The costs involved. There is no license fee for volunteers of a state agency, municipality, or other duly constituted governmental agency or unit because the license is classified as "public." However, if you later decide you enjoy killing weeds and would like to venture out on your own and make weekend applications for hire, then you must obtain a "commercial" license by paying a fee of \$45 and providing a certificate of insurance. There is no charge to take any test. Really the only costs to you as a volunteer will be study materials (see below), time studying, and transportation costs to a University of Illinois Training and Certification Clinic, <http://www.pesticidesafety.uiuc.edu/training/training.html>, or the Illinois Department of Agriculture in Springfield, (800)641-3934, or Des Plaines (847)294-4343, where testing is held. Call ahead to schedule an appointment. The costs of applying without a license are much greater: expensive fines, a tarnished reputation for you and your organization, and the potential risks to your health and the environment. Get licensed and demonstrate that you know how to handle and apply pesticides safely.

For further information. Contact the Illinois Department of Agriculture for questions concerning testing and licensing or check out their Web site at <http://www.agr.state.il.us/Environment/Pesticide/training/commappl.html>.

Study materials are recommended and can be purchased at your local U of I Extension office or ordered by calling the University of Illinois Pesticide Safety Education Program office at (800)644-2123 or (217)244-2123. To learn more about study options, license categories, and requirements, go to <http://www.pesticidesafety.uiuc.edu/> and click on "training schedule." (Michelle Wiesbrook)

Commercial Pesticide Training Information Available

Where did the warm weather go? It's about time for Illinois pesticide applicators to head indoors, ponder the successes of this year's pesticide application season, and begin planning for the next. It's also time either to renew your license or re-test. By now, you should have received a letter from Illinois Department of Agriculture indicating your license status. However, if you are new to this industry, you may need information on license requirements and testing and training options. The Pesticide Safety Education Program at the University of Illinois has released its clinic dates for the 04/05 season. You can view the schedule and find related information at <http://www.pesticidesafety.uiuc.edu/training/training.html>. Schedule booklets can also be picked up at your local U of I Extension office or ordered by calling (800)644-2123 or (217)244-3469. The booklets contain order information for study materials, but an up-to-date list of materials can also be found online at <http://www.pesticidesafety.uiuc.edu/publications/publications.htm>.

How current are the study materials on your bookshelf? Keep in mind that the General Standards workbook, Rights-of-Way workbook and manual, and Field Crops workbook and manual are new this year. Materials are revised from time to time, so checking this list is recommended. (Michelle Wiesbrook)

Pesticide Safety Education Publications

On the facing page is a current list of study materials offered by the University of Illinois Extension Pesticide Safety Education Program. These materials are intended to help individuals prepare for the certification exam(s) that may be needed to apply pesticides in Illinois. For

manuals, the publication date can be found within the first few pages of the book, near the "Issued in furtherance..." statement. Workbooks are revised somewhat irregularly and sometimes close to the start of the training season. Commercial Applicators and Operators who attend a training clinic receive current editions of the appropriate workbooks as part of their registration fee. Preclinic study of a recently outdated workbook is better than nothing, but it is best to have the current version. To order study materials, contact your local University of Illinois Extension office. Commercial applicators and operators can order study materials while registering for a training clinic by calling (800)644-2123 or (217)244-2123. (Bruce Paulsrud)

Pesticide Update

The following information provides registration status of particular pesticides and should not be considered as pesticide recommendations by University of Illinois Extension.

Agronomic

ACCURE (spiroxamine)—Bayer Crop Science—Recently received registration for use on hops to control powdery mildew.

LEXAR (mexostriolone-metolachlor/atrazine)—Syngenta—A new formulation being introduced next year for use on corn. It has a higher concentration of atrazine than the similar product Lumax. [herbicide]

Z-CYPE (s-cypermethrin)—FMC—A new formulation used to control various insects in cotton, corn, and grains.

Fruit/Vegetable

ACROBAT (dimethomorph)—BASF—Added to their label the suppression of downy mildew in leafy brassica vegetables.

ADMIRE (imidacloprid)—Bayer Crop Science—Added to their label the use on watercress. [insecticide]

ALCO CITRUS FIX (2,4-D)—Amvac—Added to the label of this growth regulator, the use in the prevention of leaf and fruit drop on tangerines, mandarins, and limes.

AVAUNT (indoxacarb)—DuPont—The preharvest interval on apples has been changed from 28 to 14 days. [insecticide]

ELEVATE (fenhexamid)—Arvesta—Added to their label the prevention of

botrytis fruit rot on kiwi fruit.

HOELON (diclofop-methyl)—Bayer Crop Science—EPA has proposed to revoke residue tolerances on lentils and dry peas. The comment period expired 10-4-04. (FR, vol. 69, 8-4-04) [herbicide]

MIDAS (iodomethane)—Arvesta Corp—Registration on this new soil fumigant is expected early next year on strawberries, tomatoes, and peppers.

QUINTEC (quinoxifen)—Dow AgroSciences—Added to their label the control of powdery mildew in cherries.

Turf/Ornamental

ARIA (flonicamid)—FMC—A new insecticide for use on greenhouse ornamentals to control thrips, whiteflies, leafhoppers, and other insects.

CERTAINTY (sulfosulfuron)—Monsanto—A new turf herbicide to control broadleaf weeds.

CYGNUS (kresoxim-methyl)—BASF—Added to their label the use on Norway maple. [fungicide]

ETHO SC (ethofumesate)—Ag Value—A new formulation for use on grass seed crops and commercial sod products. [herbicide]

FORE (mancozeb)—Dow AgroSciences—Added to their label the control of rapid blight.

FORBID 4F (spiromesifen)—Bayer Environmental Science—Proposed to EPA to register this new active ingredient for use on outdoor ornamental plants. The comment period expired 8-20-04. (FR, vol. 69, 7-21-04)

KANEMITE 15SC (acequinocyl)—Arvesta Corp—A new product for control of mites in greenhouses, shadehouses, ornamentals, and nursery containers.

POA CONSTRUCTOR (ethofumesate)—Ag Value—A new formulation for use on turf to control *Poa annua* and other weeds.

SNAPSHOT 2.5TG (isoxaben/trifluralin)—Dow AgroSciences—Added to their label more weeds controlled and the use on more ornamentals.

Structural

PHANTOM (chlorfenapyr)—BASF—Added to their label the control of general indoor pests. [insecticide]

SERENE (cyromazine)—Triad Specialty Products—A new formulation to control flies in horse operations.

Pub. #	Description	Cover color	Price	Pub. date
SP39	General Standards Manual	Light brown	\$5	2003
SP39-W	General Standards Workbook	Canary yellow	\$2	Oct. 04
SP39-SW	Bilingual General Standards Workbook (English/Spanish)*	Violet	\$2	Oct. 04
SP39-S	General Pesticide Safety Manual (Spanish) **	Violet	\$5	1999
SP39-1	Turfgrass Manua	Lime green	\$8	1996
SP39-1/3W	Turf & Ornamentals Workbook	Green	\$2	Jan. 02
SP39-2	Field Crops Manual	Blue	\$8	2004
SP39-2W	Field Crops Workbook	Light blue	\$2	Nov. 04
SP39-3	Ornamentals Manual	Purple	\$8	2002
SP39-4	Seed Treatment Manual	Pink	\$8	2001
SP39-4/8W	Grain Facility & Seed Treatment Workbook	Gold	\$2	Nov. 02
SP39-5	Rights-of-Way Manual	Orange	\$8	2004
SP39-5W	Rights-of-Way Workbook	Orange	\$2	Sept.
04				
SP39-6	Aquatic Weed Control Manual	Aqua blue	\$8	1996
SP39-6W	Aquatic Weed Workbook	Aqua blue	\$2	Jan. 02
SP39-7	Private Applicator Manual	Red	\$5	1999
SP39-7W	Private Applicator Workbook	Red	\$2	Nov. 99
SP39-7-CD	Private Applicator (Self-Study CD)	—	\$20	2002
SP39-8	Grain Facility Manual (also serves Grain Fumigation clientele)	Gold	\$8	1997
SP39-8-CD	Stored Grain Pest Management (Self-Study CD)	—	\$30	2002
SP39-9	Plant Management Manual	Magenta	\$8	1995
SP39-9W	Plant Management Workbook	Magenta	\$2	Apr. 03
SP39-10	Forest Pest Control	Dark green	\$8	2003
SP39-11	Aerial General Standards	Yellow	\$8	2002
SP39-12	Mosquito Control	Light purple	\$8	2003
SP39-13	Demonstration & Research	Light blue	\$8	2002
SP39-14	Dealer Pest Control	Grey	\$8	2002
SP39-15	Livestock Pest Control	Blue	\$8	2001
SP39-16	Sewer Line Root Control	Brown	\$8	2000
SP39-17	Fruit & Vegetable Crops Pest Control (two categories combined)	Orange	\$8	2002
SP39-18	Soil Fumigation	Charcoal	\$8	2001

** Keep in mind that exams are given in English only.

Many

BANNER MAXX (propiconazole)—*Syngenta*—EPA established time-limited residue tolerances on corn, peanuts, and pineapples. Expires 11-30-08. (*FR*, vol. 69, 8-4-04) [fungicide]

DIAZINON—Retail sale of existing stocks of Diazinon products labeled for indoor uses (except mushroom houses) will not be lawful after 12-31-04. If you have product yourself, it is legal to use it according to existing label directions and precautions. (*FR*, vol. 69, 8-11-04)

FANFARE 2EC (bifenthrin)—*Makhteshim Agan*—A new formulation recently introduced into the U.S. market. [insecticide]

FENVALERATE—*Bayer Environmental Science/Sumitomo*—The companies have requested from EPA the voluntary cancellation for the registration of this product. This request was issued 8-5-04. (*FR*, vol. 69, 8-5-04) [insecticide]

FLORAMITE (bifenazate)—*Crompton*—Added to their label the use on non-bearing fruit trees and the control of Lewis mites.

OBERON 2SC (spiromesifen)—*Bayer Crop Science*—Proposed to EPA to register this new active ingredient to use on strawberries, tuberous and corm vegetables, leafy green vegetables, brassica vegetables, fruiting vegetables, cucurbits, cotton and field corn. The comment period expired 8-20-04. (*FR*, vol. 69, 7-21-04) [insecticide]

PREV-AM (orange oil/borax/surfactants)—*Oro Agri Inc*—A new organic miticide/insecticide/fungicide being developed for use on berries, fruit and nut trees, vegetables, and ornamentals. It controls mites, aphids, thrips, powdery mildew, downy mildew, botrytis, and others.

WISDOM GC (bifenthrin)—*Amvac*—A new granular formulation being introduced for use in landscape areas, golf courses, and parks; around buildings and residences, etc. [insecticide]

Other

MAKHTESHIM AGAN—The company has purchased the Australian agrochemical company Farnoz for \$25 million.

SEPRO—The company has purchased Zeneca's research facility in Whitakers, NC. It consists of about 410 acres plus research buildings and equipment.

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The development and/or publication of this newsletter has been supported with funding from the Illinois Department of Agriculture.

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The *Illinois Pesticide Review* is published six times a year on the Web at <http://www.pesticidesafety.uiuc.edu/>

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