Comparison of Independent, Online Pesticide-Label Services

What's the best source of information when trying to decide which pesticides may be used in a particular situation? The answer: "On the label that came with the pesticide you purchased." It's just that simple.

However, there are many valid reasons why we turn to additional resources such as traditional pest management ("spray") guides and online pesticide-label services. Whether it's agricultural, horticultural, or yard-and-garden-use products, most pesticide registrants now have their product labels available online in some way. Some registrants utilize independent, online label services, others have developed their own proprietary label service, and many use a combination of the two.

The purpose of this article is to examine and compare the features of three independent, online pesticide-label services:

- Greenbook (www.greenbook.net), by Vance Publishing Corporation, Lenexa, KS
- CDMS (www.cdms.net), by Crop Data Management Systems, Inc., Marysville, CA
- KRS Network (www.kellysolutions.com/IL/pesticideindex.asp or search within states other than Illinois at www.kellysolutions.com/nasdamap.htm), by Kelly Registration Systems, Covington, GA

Details

I have used these three services for a number of years now and have discovered that some pesticide registrants don't include all of their registered and available products and formulations within Greenbook and CDMS. It may be necessary to visit the registrant’s own Web site to see their full product line; this is especially true for specialty and niche-market pesticides.

When searching by pest or by site, realize that it is easy to overlook products because the pest names are not always standardized, and the wide variety of site names can be overwhelming. For example, when searching the KRS Network database for a fungicide labeled to control cedar-apple rust, you would need to search each of the following variations to find all of the labeled fungicides: rust [gymnosporangium], hawthorn rust [gymnosporangium], cedar-apple rust [gymnosporangium], and cedar gall rust [gymnosporangium]. Similarly, when searching for a foliar pesticide to use on field corn, you would need to search each of the following sites and perhaps more to find all of the
labeled pesticides in the database: corn, corn [foliar treatment], corn [field], and corn [field] [foliar treatment].

The Greenbook database uses a fairly standardized list of pest names, and the sites are logically lumped together, making the search process perhaps less precise but certainly less difficult.

Summary

- If you simply want to visit one site to view or print labels, either Greenbook or CDMS will meet your needs. Supplemental labels (for example, Section 18, 24c, and 2ee) can generally be found on these Web sites as well, but you may need to visit the registrant’s own Web site to find very recent additions.
- If you need access to labels, as well as robust and relatively intuitive search features, Greenbook will meet your needs.
- If you need to search by EPA registration number, or if you need to verify precise registration details, KRS Network will meet your needs.
- If you are searching for homeowner/yard-and-garden-use products, they will be listed on KRS Network; but you will need to visit the registrant’s own Web site or a garden center to view labels.
- If you need localized information regarding product efficacy; application timing; and pest identification, importance, and biology, there is no substitute for the information you’ll

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Table 1. Features of three independent, online pesticide label services

<table>
<thead>
<tr>
<th>Feature</th>
<th>Greenbook</th>
<th>CDMS</th>
<th>KRS Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Free (advanced searches require subscription, which is free)</td>
<td>Free ($595 for one year of access to the CHEMSEARCH Web Service)</td>
<td>Free</td>
</tr>
<tr>
<td>Labels available to view and print</td>
<td>Yes (in standardized format)</td>
<td>Yes (in &quot;native&quot; format)</td>
<td>Yes, but difficult to retrieve and not useful to the end-user (an external link to EPA-stamped Master label)</td>
</tr>
<tr>
<td>Supplemental labeling provided (for example, Section 18, 24c, 2ee)</td>
<td>Yes</td>
<td>Yes</td>
<td>Inconsistent</td>
</tr>
<tr>
<td>Adjuvant labels available</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>MSDS available</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>State registration information</td>
<td>Yes</td>
<td>No</td>
<td>Yes (must choose state before starting a search)</td>
</tr>
<tr>
<td>Mode-of-action information</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Worker Protection Standard summary</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Label update notices available by email</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Search by</strong></td>
<td><strong>Greenbook</strong></td>
<td><strong>CDMS</strong></td>
<td><strong>KRS Network</strong></td>
</tr>
<tr>
<td>Company name</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Product category</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Product name</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Product EPA registration number</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Active ingredient</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Pest</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Site</td>
<td>Yes (Note also the Search All, Search Ag, Search T&amp;O, etc., boxes at the top of the Advance Search screen.)</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Use allowed in residential/year</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Organic-approved</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Restricted-use products</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Formulation type</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Multiple criteria</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Heat Stress

Heat stress occurs when the body is subjected to a level of heat with which it cannot cope. Heat stress can affect both pesticide handlers and workers. With heat stress, the heat, not pesticide exposure, causes certain symptoms. Personal protective equipment (PPE) worn during handling or early-entry activities can increase the risk of heat stress. The protective qualities of the PPE may restrict the evaporation of sweat, thus impeding the body's natural cooling system. If you are under a physician's care, consult your physician before working in hot or humid conditions. Special PPE is available to assist in maintaining a cool body temperature.

Mild forms of heat stress make people feel ill and impair their ability to do a good job. You may feel weak and get tired sooner than usual. In addition, you may be less alert and less able to use good judgment. Severe heat stress, also known as heat stroke, is life-threatening. The normal body temperature is 97.7°F. With heat stroke, body temperature may exceed 105°F. Staggering, unconsciousness, or convulsions may result. Lack of sweating is a common symptom of heat stroke. Brain damage or even death can occur if the heat stroke victim is not cooled down quickly. More than 10 percent of severe heat stress victims die, including young, healthy adults. Sometimes victims remain highly sensitive to heat for months and are unable to return to the same work.

Heat stress symptoms include

- Fatigue (exhaustion, muscle weakness)
- Dizziness and fainting
- Clammy skin or hot, dry skin
- Altered behavior—confusion, slurred speech, quarrelsome, irrational
- Headache, nausea, and chills
- Severe thirst and dry mouth
- Heavy sweating or complete lack of sweating

The preceding material was taken from the 2006 National Pesticide Safety Core Manual.

Following is the U.S. Occupational Safety and Health Administration (OSHA) 10-point list to help combat the heat risks faced by outdoor workers:

1. Encourage workers to drink plenty of water—about one cup every 15 to 20 minutes.
2. Help workers adjust to the heat by assigning a lighter workload and longer rest periods for the first 5 to 7 days of intense heat.
3. Encourage workers to wear lightweight, loose-fitting, light-colored clothing.
4. Use general ventilation and spot cooling at points of high heat production.
5. Learn to spot and know what to do for signs of heat stroke, which can be fatal. The symptoms are severe headache, mental confusion/loss of consciousness, flushed face, and hot, dry skin. If someone has stopped sweating, seek medical attention immediately. Other heat-induced illnesses include heat exhaustion, heat cramps, skin rashes, swelling, and loss of mental and physical work capacity. Learn more about heat exhaustion and heat stroke and what to do in an emergency: http://www.osha.gov/Publications/oshapublications.html.
6. Train first-aid workers, along with all employees, to recognize and treat the signs of heat stress.
7. Consider a worker's physical condition when determining fitness to work in hot environments. Obesity, lack of conditioning, pregnancy, and inadequate rest can increase susceptibility to heat stress.
8. Alternate work and rest periods, with longer rest periods in a cooler area. Shorter, but frequent, work–rest cycles are best.
9. Certain medical conditions such as heart conditions, treatments like low-sodium diets, and some medications increase the risk from heat exposure. Seek medical advice in those cases.
10. Monitor temperatures, humidity, and workers' responses to heat at least hourly.

Outdoor workers must also be aware of UV radiation. The main source of UV radiation is sunlight. Skin and eyes are the organs most susceptible to UV radiation. UV radiation causes premature aging of the skin, wrinkles, cataracts, and melanoma, the most serious type of skin cancer. However, the outdoor worker can protect himself or herself by taking five easy precautions:

1. Cover up. Wear clothing that does not transmit visible light, to protect as much of your skin as possible.
2. Use a sunscreen with an SPF of 15 or higher. Sunscreen should be applied liberally at least 15 minutes before going outside. Reapply every 2 hours, or more frequently if you sweat a lot.
3. Wear a hat. A wide-brim hat is ideal because it protects the neck, ears, eyes, forehead, nose, and scalp.
4. Wear sunglasses that block UV rays. UV-absorbent sunglasses can help protect your eyes from sun damage.
5. Limit direct sun exposure. UV rays are most intense when the sun is high in the sky, between 10 a.m. and 4 p.m.

OSHA general standards section 1910.132(a) requires employers to provide protective equipment to employees who are overexposed to the sun's radiation (CCH 13,445). (Phil Nixon)
Searching for a Pesticide Applicator?

In most cases, it's not too difficult to find a commercial (for-hire) pesticide applicator; you either talk to a neighbor or colleague, or check the Yellow Pages. However, when it comes to specialized situations such as controlling pond weeds or killing tree roots in a sewer line, finding a licensed commercial applicator may seem a bit more challenging.

However, there is a resource available to the public where you can easily find the right person for the job. Since the late 1990s, Kelly Registration Systems has been working with individual state departments of agriculture to provide pesticide applicator license information and pesticide registration specifics via the Internet. Illinois-specific information can be found on the Illinois Department of Agriculture's (IDOA) Web site at www.kellysolutions.com/IL/Applicators;index.asp.

For example, in three easy steps, you can find all nearby applicators that are licensed to apply pesticides to a specific site (category):

1. Click on “Search for an Applicator in your City, County, Zip.”
2. Enter the city, zip code, or county of interest.
3. Then chose the license category and applicator type (see discussion below).

The results page lists all individuals who meet your search criteria. Simply click on a person's name to see the detailed license information and to learn how to contact him or her by mail.

License types

**Private Applicator License:** Required for people applying restricted-use pesticides to produce an agricultural commodity on property they own or control. Private Applicators must pass the Grain Fumigation exam to fumigate their own grain bins. The Private Applicator license does not allow applications “for hire.” License and exam(s) are valid for 3 years.

**Pesticide Dealer License:** An individual must be licensed to sell (1) restricted-use pesticides (RUP); or (2) nonrestricted-use pesticides for use in the production of an agricultural commodity in containers with a capacity of 2.5 gallons or greater, or 10 pounds or greater. In addition, records of RUP sales must be kept for 2 years. Commercial Applicators and Structural Pest Control Operators are exempt from the test and fee but must register as Dealers. The exam is valid for 3 years if no lapse occurs in annual licensure.

**Public Applicator and Operator Licenses:** Required for individuals who purchase, use, or supervise the use of pesticides classified for general or restricted use for hire. Exam(s) are valid for 3 years if no lapse occurs in annual licensure.

**Commercial Applicator and Operator Licenses:** Required for individuals who use or supervise the use of pesticides classified for general or restricted use for any purpose on property of an employer when such activity is a requirement of the terms of employment and the application is limited to property under the control of the employer only. This type of license does not allow applications “for hire.” Exam(s) are valid for 3 years if no lapse occurs in annual licensure.

**Commercial Not-for-Hire Applicator and Operator Licenses:** Required for individuals who use or supervise the use of pesticides classified for general or restricted use for any purpose on property of a state agency, municipality, or other duly constituted governmental agency or unit. This type of license does not allow applications “for hire.” Exam(s) are valid for 3 years if no lapse occurs in annual licensure.

**Applicator vs. Operator?**

An Applicator is the person(s) in an organization who has the responsibility for pesticide purchasing, storage, handling, and use. An Applicator is usually an owner, a supervisor, or a foreman. Each organization must have at least one person licensed as an Applicator at each facility location. The Applicator's license categories dictate the areas in which a company and his/her operators may legally apply pesticides.

An operator is a person who uses pesticides at the job site; he/she is tied directly to the applicator's license. The Operator can apply pesticides only under the direct supervision of the Applicator and can apply pesticides only to areas covered by the applicator’s license. Supervision and direction of operators by an Applicator is interpreted to mean that the Applicator must be in daily contact with the operators. If the Applicator is out of town or not available, the operator may not legally apply pesticides.

**What's a category?**

In Illinois, there are 17 different categories of licensure. Each category is designed for pesticide use requiring specific professional knowledge. An Applicator who needs to apply pesticides to a range of sites needs multiple categories on his/her license.

- Aquatic pest control: Pesticide use for weed control in standing or running water.
- Demonstration and Research: Pesticide use during research or the teaching of pesticide and equipment use.
- Field Crop pest control: Pesticide use in corn, soybeans, small grains, forages, grasslands, etc.
- Forest pest control: Pesticide use in forests, forests nurseries, and forest seed-producing areas.
- Fruit Crop pest control: Pesticide use in fruit and nut crops.
- Grain Facility pest control: Pesticide use in and around grain elevators.
or similar grain-holding facilities, conveyances, and transportation facilities. NOTE: Individuals who wish to control grain-storage pests commercially (for hire) are licensed under the Structural Pest Control Act, which is administered by the Illinois Department of Public Health (IDPH). Thus to find a commercial grain-fumigation applicator, call IDPH at (217)782-5830.

- Livestock pest control: Pesticides applied to livestock or livestock barns.
- Mosquito control: Insecticides applied to control mosquitoes.
- Ornamental pest control: Pesticide use on trees, shrubs, and ornamental plantings.
- Plant Management pest control: Pesticide use on portable plants used for interior landscaping and environmental enhancement.
- Regulatory pest control: For government employees involved in the control of regulated pests with pesticides.
- Rights-of-Way pest control: Chemical weed control on noncrop sites such as parking lots, along roads, in access rights-of-way, and in fence lines.
- Sewer Line Root Control: Chemical control of roots in sewer lines.
- Seed Treatment: Pesticide use on seeds.
- Soil Fumigation: Pesticide use for soil fumigation.
- Turf pest control: Pesticide use on turf areas and sod farms.
- Vegetable Crop pest control: Pesticide use in vegetable crops.

Regarding expiration dates

In Illinois, remember that each exam is good for 3 years and that all but Private Applicator licenses expire at the end of each calendar year. So, if you're a Private Applicator, the listed expiration date indicates when your license expires and when you'll need to retake the exam. For everyone else, realize that the listed expiration dates indicate license renewal, not necessarily reexamination. Applicators and Operators should pay close attention to the notification letter you receive from the IDOA each November; it indicates the need for license renewal or reexamination. (Bruce E. Paulsrud)

Manuals and Workbooks and CDs, Oh My!

There is often confusion at our pesticide safety education training clinics about the differences between training manuals, workbook, and CDs, and what a person needs to attend a training session and pass the exam(s). As these study materials are all intended to assist with learning, it is important to clear up any confusion surrounding them.

Questions for each exam are drawn only from the appropriate training manual and a representative pesticide label. Thus, the answers to all licensing exam questions can be found in the appropriate manual and the pesticide label (which is provided with the exam). If you have thoroughly read and understand the material in a manual and can navigate a pesticide label, then you should have little problem passing a licensing exam.

Manuals are updated about every 9 years. Members of the University of Illinois Pesticide Safety Education Program (PSEP) coordinate the revisions. Most manual chapters are written by the PSEP specialists themselves. They also seek the knowledge of other University of Illinois Extension specialists and experts from other institutions throughout the nation to make sure the manuals contain the most relevant and up-to-date information regarding the safe and effective use of pesticides. The extent of the revisions every 9 years varies from manual to manual. For some categories, there might be little change in the information, so there would be little change in the manual as well. For some categories, though, major changes in serious pests or application methods require a more thorough rewriting of the manual. Using out-of-date manuals to prepare for an examination is not recommended. General Standard and Private Applicator manuals each cost $10, and all other category manuals cost $15.

Workbooks are much shorter than manuals, and are not intended to be used as a stand-alone source of information, but rather as a supplement to help the user focus on the most critical information. The workbooks have various blanks, and it is intended that the user fill these blanks in either by going through the training manual or attending a PSEP training clinic. The training modules at the clinic follow the workbook, and participants can learn the answers to put in the blank spaces in the workbook. Similarly, the category manual can be used to fill in these blanks by consulting the manual page number referenced at the end of each numbered workbook item. It is important to note that simply ordering a workbook without also purchasing a manual or attending a training clinic is unlikely to adequately prepare you for a licensing exam.

Workbooks are revised more frequently than manuals, sometimes as often as every year. These revisions occur to keep the workbook up-to-date with the PSEP training clinic presentations and are often less substantial than training manual revisions. When a workbook is revised due to the revision of its corresponding training manual, the changes are much more substantial. All workbooks cost $2 each but are included in the Commercial PSEP clinic fee; so if you register for a training
clinic, you receive a workbook for each session you attend, as part of your clinic registration fee.

We strive to complete workbook revisions as early as possible, but sometimes we are unable complete the revision, printing, and distribution until just before training starts. If you arrive at a training clinic and find you have been studying an old workbook you just ordered a few weeks earlier, don’t despair. The new workbook was probably just recently released, and you will receive a free copy as part of your training registration. Also, as mentioned earlier, most workbook revisions are not very extreme, so using a recently outdated workbook to prepare for the exam was not a waste of time. You should quickly pick up any important differences during the training.

The PSEP team currently offers two training CDs, which are intended for use in a personal computer. The Private Applicator Self-Study CD is intended to prepare users for the exam required to become a Private Applicator, and the Stored Grain Pest Management Self-Study CD is intended to prepare Private Applicators for the Grain Fumigation exam. While neither of these training CDs are intended for Commercial Applicators, the material on the Private Applicator Self-Study CD is somewhat similar to the material covered in General Standards training, and the CD may help some better understand some of this material. The Private Applicator Self-Study CD, however, should not be used as a substitute for General Standards training materials. Although similar, there are some differences.

It is important to keep up-to-date with PSEP training materials. Studying outdated manuals is not likely to be sufficient in preparing for an exam. The material can change, with new material added and out-of-date material deleted. There are two good ways to determine if your study materials are current and, if not, to order new ones. One approach is to visit http://www.pesticidesafety.uiuc.edu/publications/publications.htm for an up-to-date list, which includes the publication number, title, color of the cover, price, and date the item was last revised. By comparing this date with the one on your manual or workbook, you can determine whether or not you have the most current version. Another option is to call the main University of Illinois PSEP office at (800)644-2123 or (217)244-2123 and ask about current study materials. Remember, the study materials are intended to help you learn the appropriate things for each category, and it is important to use the current manual and workbook to properly prepare for an exam. (Scott Bretthauer)

**Label Changes for Headline SBR**

The label for the soybean rust Section 18 product, Headline SBR, has recently changed. BASF suggested the following changes and U.S. EPA approved them:

- the rate was changed from 7.8 ounces/acre to 5.9-7.8 ounces/acre
- the corresponding area to be treated with a single container was changed from 35 acres to 35 to 46 acres
- the re-treatment interval was changed from 21 days to 14 to 21 days
- if an adjuvant is needed, only a non-ionic surfactant is recommended
- explanatory text was expanded

(Source: Michelle Wiesbrook; email from IDA, June 6, 2006)

**National Pesticide Use Database Released**

The Crop Protection Research Institute, the research arm of CropLife Foundation, has released a complete and final version of its National Pesticide Use Database (NPUD) at http://www.croplifefoundation.org/cpri_npud2002. NPUD is the only comprehensive and publicly available source of pesticide-use data in the United States. The database now contains 16,409 new records of insecticide, fungicide, herbicide, and other pesticide use listed by crop, state, and active ingredient. NPUD is sponsored by USDA's Office of Pest Management Policy, EPA's Office of Pesticide Programs, USGS's National Water Quality Assessment Program, and CropLife America member companies.


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Michelle L. Wiesbrook, Extension Specialist, Pesticide Application Training and Horticulture

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