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At Your Fingertips: Rapid Retrieval of Product Information from the National Pesticide Information Center

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ABSTRACT: The National Pesticide Information Center (NPIC), a cooperative agreement between the Environmental Protection Agency and Oregon State University, serves as an objective source of pesticide information for the public and professionals. In 2013, NPIC launched an innovative tool to retrieve pesticide product information called Mobile Access to Pesticides and Labels (MAPL; accessible at www.npic.orst.edu/mapl). MAPL allows users to query pesticide products by multiple parameters, including EPA registration number, active ingredient, product name, and registrant. Important to professionals, MAPL allows users to search for products by pest type and application site. The results can be further stratified by product registration status, transfers, and cancellations. For example, a search of products registered to control “Norway rats” in “food processing areas” yields 61 active products and 983 cancelled products. Once a product is selected, users are able to download the federal label in PDF format. Additional information includes contact information for the manufacturer, synonyms for the chemical active ingredient, signal word, restricted use status, and formulation. When available, NPIC links their active ingredient fact sheets to the selected products to provide users with important health, safety, and environmental information. MAPL was designed to perform optimally on mobile devices such as smartphones and tablets, as well as displaying consistently on a variety of desktop browsers.

KEY WORDS: mobile devices, National Pesticide Information Center, pesticide information, product labels, rapid access, vertebrate pests

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INTRODUCTION

The National Pesticide Information Center (NPIC) is a cooperative agreement between the United States Environmental Protection Agency (EPA) and Oregon State University (OSU). NPIC's core mission is to provide science-based information about pesticides and pesticide-related issues. Professional audiences and the general public contact NPIC through a variety of mechanisms, including real-time communication via a toll-free number, voice-mail, e-mail, incident reporting portals, and social media channels.

When communicating with the public in real-time, NPIC historically relied on a subscription based tool known as WinSPIRS. WinSPIRS provided access to pesticide products and labels registered by the EPA on a quarterly basis. This allowed pesticide specialists at NPIC to assist callers with label comprehension, discussion of the active ingredient, and other important topics. In 2007, WinSPIRS was discontinued and NPIC was left without a key resource to address questions in real time. In response, NPIC developed an in-house replacement for WinSPIRS that retained all of the original functionality of WinSPIRS and added new features. The initial tool was known as the Pesticide and Active Ingredient Retrieval System (PAIRS). It was developed as a local desktop application and maintained on an intranet site accessible to NPIC staff only.

MOBILE ACCESS TO PESTICIDE INFORMATION

In 2011, NPIC and the EPA's Office of Pesticide Programs began a dialogue about extending PAIRS into the public domain. This concept acknowledged the rise in smartphones and other emerging mobile technologies as a growing source of information for the public and

professional audiences (Brossard and Scheufele 2013). The new platform was designed to offer greater accessibility to pesticide information and to be complementary with existing tools and new initiatives at EPA. To reflect the change in scope and technology, PAIRS was renamed Mobile Access to Pesticides and Labels (MAPL).

Given the importance of broad accessibility to MAPL, it was decided to use HTML5 as the programming language to configure and display MAPL. HTML5 has become standard mark-up technology for presenting and structuring content on the Internet. MAPL was developed using HTML5 to function on multiple browsers and different mobile device platforms.

The underlying data used in MAPL are extracted from the Pesticide Product Information System (PPIS) and Pesticide Product Label System (PPLS) maintained by EPA. PPIS contains information concerning all pesticide products registered in the United States (EPA 2014a). Data fields include registrant name and address, active ingredient(s), toxicity category, product names, distributor brand names, site and pest uses, formulation code, and registration status. The PPIS files are in ASCII fixed-length format and can be accessed through common database and spreadsheet software, although it can be cumbersome for non-technical people. PPLS hosts image files of pesticide labels that have been approved by EPA (EPA 2014b). The label images are indexed by date of registration or label amendment, as well as EPA registration number. The original labels and amendments are displayed in PDF format. NPIC does not clean data or perform quality assurance on PPIS or PPLS.

MAPL is a web-based application that does not need to be downloaded by the user. The main advantage of web-based apps versus native apps is the ability to update content frequently without users needing to transfer the

latest app version onto their device. NPIC updates MAPL content weekly in parallel with the EPA's addition of new content or revisions to PPIS and PPLS. MAPL was designed with minimal graphics and without unnecessary content, in order to assist with faster loading speeds on mobile platforms.

TARGETING PESTS AND PRODUCT INFORMATION

MAPL provides near instantaneous results, depending on the wireless connection and location of the user. The initial search screen in MAPL (www.npic.orst.edu/MAPL) prompts the user to enter the EPA Registration number that is unique to each product. MAPL reminds users that the registration number is the best way to accurately identify a specific product. Other possible search fields include product and registrant name, in the event that the EPA Registration number is not available or the label is damaged.

A key feature of MAPL is that it allows users to search by pest type and by sites in which that product obtained registrations. As of February 2014, PPIS listed 8,249 unique pests. As key words are entered for pest or site, MAPL autofills entries as the user types, listing them alphabetically in a drop-down menu. How the pest type is entered is relevant to the search results. For instance, a simple search of "rodents" yields 28 active products and 38 cancelled products. If the search is refined to "mice" or "rats," MAPL retrieves 173 and 159 active products, respectively. However, further refinement in the type of pest does not necessarily narrow the results. Selecting "Norway rat" yields 612 active products and over 1,500 canceled products. These disparate results highlight the importance of specificity in pest type, when possible. MAPL also allows users to search for pests with two search options: "starts" or "contains." For instance, if "starts" is selected in combination with "voles," no matching pests are found. However, if "contains" is selected, several different types of voles appear with their full name, such as "Oregon vole."

Another field that is useful to filter results is site registration. As of February 2014, there were over 24,000 sites and crops registered in PPIS, ranging from highly specific site uses to broad use patterns. For rodents, several products are registered for both indoor and outdoor use. Using Norway rats as an example, different site uses yield products that may have different chemistries and use directions. Selecting "food processing areas" and "Norway rats" yields 61 active products and 983 cancelled products. This represents a 10-fold reduction in active products registered for "Norway rats" when no site is selected. An additional search field in this tab is active ingredient. As of February 2014, there were 1,125 active ingredients within a registered product within PPIS. Combination of searches by active ingredient with site and/or pest can provide highly specific product information.

Once the user selects a product, a new screen appears that contains several sources of information. These include active ingredient; signal word; contact information for the manufacturer; formulation type; drop-down menus for registered pests and site uses; and a link

to download the federal product label. Within the active ingredient button, MAPL provides a list of the different chemical name synonyms for the active ingredient, PC Code, CAS number, and concentration. When available, MAPL hyperlinks to general fact sheets developed by NPIC. These fact sheets were written for diverse audiences, targeting commonly asked questions from the general public (Stone et al. 2011).

Given the connection of MAPL with the PPIS and PPLS databases, it can function as the backbone for complementary tools and applications. NPIC has integrated MAPL into a recent integrated pest management (IPM) app intended for the public called the Pesticide Education and Search Tool (PEST). PEST prompts users to select their type of pest first. Common residential pests such as fleas, bed bugs, or mosquitoes are listed. When selecting a pest of concern, several IPM approaches are presented. If the user has a particular product that they wish to learn more about, they can enter the EPA registration number. The results are extracted from MAPL and can be used to access the product label and supporting information.

To assist user with navigating through MAPL, a short video was produced on the main webpage for NPIC mobile apps (www.npic.orst.edu/webapps.html). The video was uploaded through YouTube and linked on the webpage. It offers users with tips on searching, retrieving, and book-marking results from MAPL.

A limitation to MAPL is that the data in PPLS are for federal product labels. Market labels for specific states may differ, and these labels supersede the information contained in MAPL. To alert users of this limitation, a link is provided below the prompt to download federal labels to determine if this product is registered in a particular state. Once selected, this link guides users to NPIC's Pesticides and Local Services (PALS) tool to connect people with several pesticide-related resources within their state, including the state's lead agency responsible for registering pesticides.

SUMMARY

There are thousands of pesticide products registered for multiple pests and sites. As the public relies more on mobile devices to search and retrieve information, it is imperative that tools are available to rapidly access relevant information. The National Pesticide Information Center developed MAPL to reflect these trends through a simplified design and broad accessibility. Search parameters such as EPA Registration Number, product name, pest type, and site location will allow users to access important pesticide information for pest management.

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LITERATURE CITED

Brossard, D., and D. A. Scheufele. 2013. Science, new media, and the public. *Science* 339(6115):40-41.

- EPA (U.S. Environmental Protection Agency). 2014a. Pesticide Product Information System. Office of Pesticide Programs, U.S. Environmental Protection Agency, Washington, D.C. Accessible at: <http://www.epa.gov/pesticides/PPISdata/>.
- EPA (U.S. Environmental Protection Agency). 2014b. Pesticide Product Label System. Office of Pesticide Programs, U.S. Environmental Protection Agency, Washington, D.C. Accessible at: <http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1>.
- Stone D., B. Luukinen, J. Gervais, and K. Buhl. 2011. Developing fact sheets for diverse audiences. *J. Pesticide Safety Educ.* 13:6-13.