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EPA Public Comment Portal:
<https://www.regulations.gov/commenton/EPA-HQ-OPP-2023-0562-0001>

Subject: White Paper Describing Benefits of Structured and Digital Content Labels for Pesticide Products; (EPA-HQ-OPP-2023-0562)

Dear Christian Bongard:

On behalf of the Bay Area Clean Water Agencies (BACWA), we thank you for the opportunity to provide comments on the White Paper Describing Benefits of Structured and Digital Content Labels for Pesticide Products ("White Paper"). BACWA is a joint powers agency whose members own and operate publicly-owned treatment works and sanitary sewer systems that collectively provide sanitary services to over seven million people in the nine-county San Francisco Bay Area (Bay Area). Every day, BACWA members provide wastewater treatment for millions of gallons of pesticide-containing wastewater that is discharged to fresh or saltwater bodies, including local creeks and rivers, bays, and the Pacific Ocean. We take our responsibilities for safeguarding receiving waters seriously.

BACWA supports EPA's effort to standardize pesticide labels and provide digital content to pesticide users. EPA requested comments in six specific topics. BACWA has comments for EPA in the following two topics:

- **EPA Topic 2.** Are there additional **challenges** associated with the adoption of structured labeling or structured digital labeling that have not been captured? If so, please describe.
- **EPA Topic 4.** Are there **additional efforts underway** around development of **structured labels** or structured digital labels that EPA should be aware of? If so, please provide information for EPA's consideration.

Because it appears that the documents referenced in our response to Topic 4 may provide some remedies to the challenges of structured labeling (Topic 2), we have sequenced our responses to first address Topic 4.

EPA Topic 4: BACWA Recommends that EPA Seek to Harmonize Pesticide Labeling with the World Health Organization and United Nations.

While the White Paper describes the importance of international harmonization, the reference presented was limited to digital label fields. Meanwhile there appear to be two key international efforts to improve and standardize labeling practices for pesticides:

- 1) *Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Tenth revised edition*, United Nations 2023¹ (A revised edition is expected in 2025.”²)

The GHS includes harmonized criteria for classifying substances and mixtures as well as harmonized communication elements for labels.

- 2) *International Code of Conduct on Pesticide Management: Guidance on good labeling practice for pesticides, Second revision, (GGLPP)* Food and Agricultural Organization of the United Nations and the World Health Organization, November 2022).³

The GGLPP provides additional guidance including recommendations on label content, font size, use of color and pictograms, and effective use of space. It also states that “reference should be made to the GHS for the criteria for classifying environmental hazards” (page 56 of 83, GGLPP).

EPA Topic 2: BACWA Recommends that EPA Consider the Challenges for Untrained, Unlicensed Users in the Adoption of Structured Labeling.

While the White Paper was largely focused on agricultural pesticide users, BACWA asks that EPA consider urban users of pesticides. Unlike agricultural pesticide users—who are trained professionals—the vast majority of urban pesticide users are untrained and unlicensed. Non-professional users often struggle to read and understand pesticide labels.^{4,5,6,7} The EPA often notes that “the label is the law” but unfortunately many untrained users are not able to follow the label, especially if English is not the reader’s native language. This results in the misuse, overuse, and dumping of pesticides, which can cause harm to humans, pets, and the environment.

¹ <https://unece.org/transport/documents/2023/07/standards/ghs-rev10>

² <https://unece.org/about-ghs>

³ Food and Agricultural Organization of the United Nations and the World Health Organization have published the International Code of Conduct on Pesticide Management Guidance on good labelling practice for pesticides, <https://www.who.int/publications/i/item/9789240053014>

⁴ Dugger-Webster, A, et al. (2018) Following pesticide labels: A continued journey toward user comprehension and safe use, Current Opinion in Environmental Science & Health, Volume 4, Pages 19-26, ISSN 2468-5844, <https://doi.org/10.1016/j.coesh.2018.03.004>

⁵ Edworthy, J., et al., (2004). Linguistic and Location Effects in Compliance with Pesticide Warning Labels for Amateur and Professional Users. Human Factors, 46(1), 11–31. <https://doi.org/10.1518/hfes.46.1.11.30383>

⁶ Lockwood, JA, et al. (1994) Pesticide labels: proven protection or superficial safety? J Am Optom Assoc. 1994 Jan; 65(1):18-26.

⁷ Rother H-A, Pesticide Labels: Protecting Liability or Health? – Unpacking “misuse” of pesticides, Current Opinion in Environmental Science & Health(2018), doi: 10.1016/j.coesh.2018.02.004

BACWA is particularly concerned with pesticides used indoors, due to the downstream pathways to municipal wastewater treatment plants and receiving waters. As shown in the figure below, pesticides products have many pathways to indoor drains.⁸

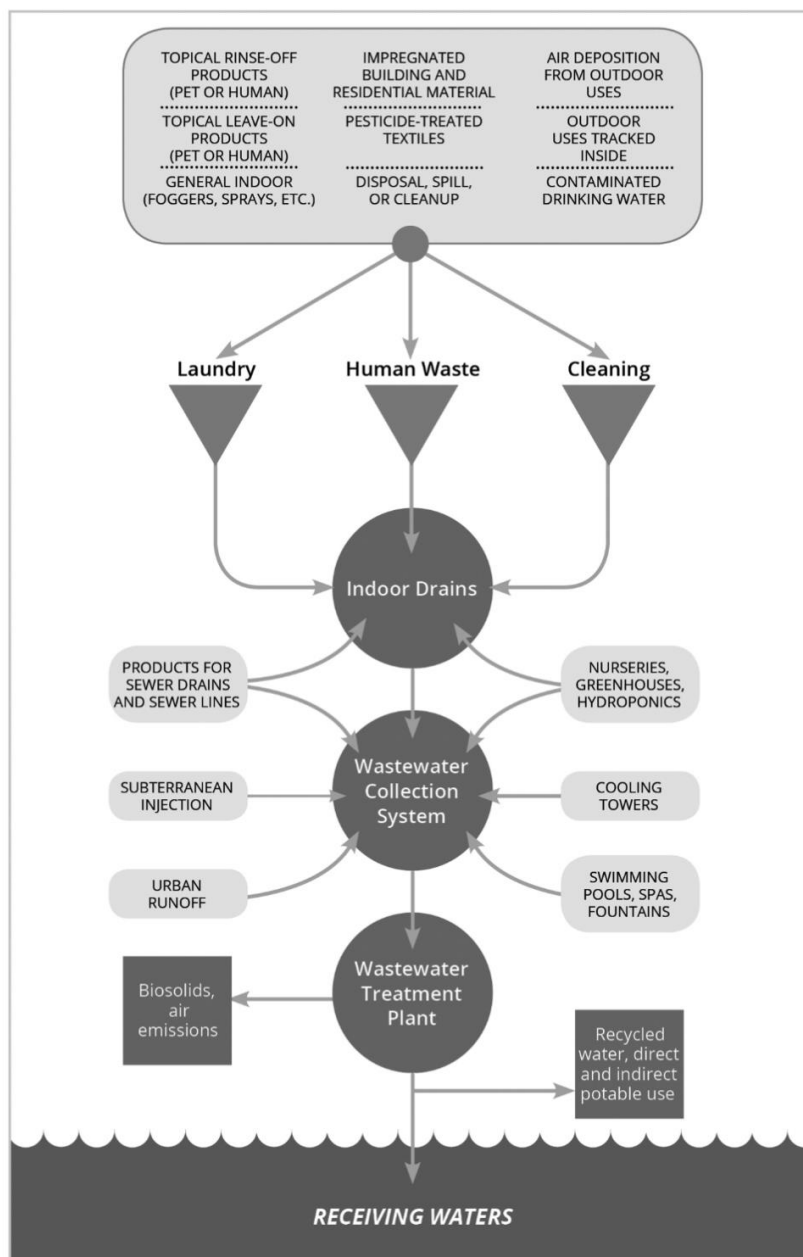


Figure 1: Conceptual model of sources of current-use pesticides to municipal wastewater. Black text is used to describe sources. Source: Sutton, R. et al. (2019)

⁸ Sutton, R. et al. 2019. Occurrence and Sources of Pesticides to Urban Wastewater and the Environment. In Goh et al.; Pesticides in Surface Water: Monitoring, Modeling, Risk Assessment, and Management, ACS Symposium Series 1308; American Chemical Society: Washington, DC, 2019; pp 63-88.
<https://pubs.acs.org/doi/abs/10.1021/bk-2019-1308.ch005>

BACWA has the following recommendations on White Paper Topic 2:

1. Continue to use disposal statements and the associated pictogram as label mitigation to reduce ecological risk from disposal to the sewer.

In the June 2021 Proposed Interim Decision for Pyrethrins (Docket ID No. EPA–HQ–OPP–2011–0885), the EPA included the following disposal statement and pictogram as part of the label mitigation for ecological risks from indoor use:

- *The following statement is proposed on the product label unless labeled for use directly inside pipes/sinks.*
 - *“Do not pour or dispose down the drain or sewer. Call your local solid waste agency for local disposal options.”*
- *The Agency proposes to include a pictogram of an image of a diagonal strikethrough over a drain on all end-use consumer product containers. EPA proposes to place the pictogram in a prominent location. The proposed pictogram should be legible (i.e., no smaller than 1.5 square centimeters or 0.25 square inch unless this size is greater than 10% of the size of the label). Below is an example graphic of an indoor drain image:*



Figure 2: Do Not Dump Down the Drain Pictogram. Source: EPA Pyrethroids PID

BACWA appreciates the EPA’s recommended location and minimum size specification and that the EPA selected the pictogram that we put forward from our member agency, Dublin San Ramon Services District. We ask that EPA consider expanding the use of this language and pictogram to all consumer pesticides that may be used or mixed indoors.

2. Untrained, unlicensed pesticide users should not be handling concentrates; if the practice continues, they need easy-to-follow dilution directions to minimize pesticide poisonings and discharges to the sewer.

Pesticide labels often include confusing or conflicting information about the dilution (mixing) of concentrated pesticide products. Because unlicensed, untrained users often struggle to understand mixing ratios and dilutions, this can lead to improper handling and result in excess indoor pesticide use, resulting in excess pesticides discharged to the sewer. Indeed, for many years, the EPA has been encouraging ready-to-use pesticide formulas for indoor use:⁹

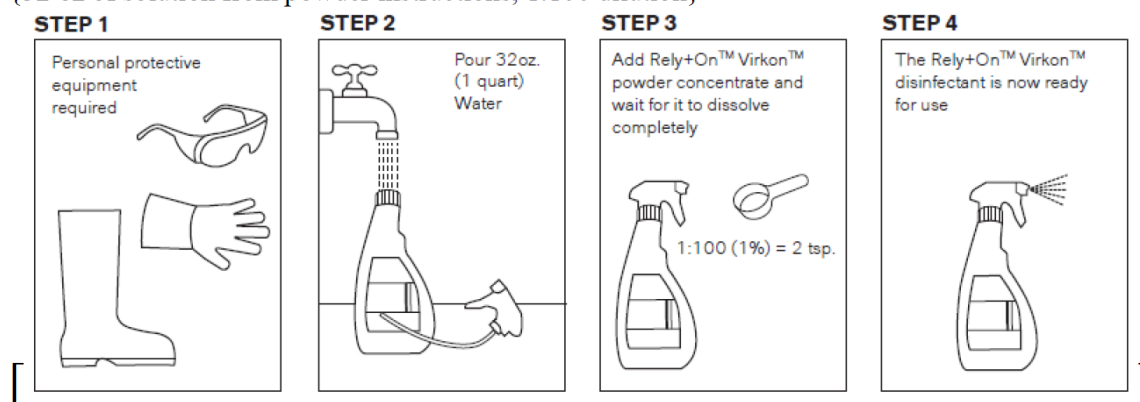
⁹ <https://www.epa.gov/sites/default/files/2014-04/documents/pr2000-lbl-draft.pdf>

The Agency believes products that are designed for use in a “ready-to-use” form (such as pump sprayers or aerosol formulations) pose fewer hazards than those which must be diluted or handled in concentrated form. Ready-To-Use (RTU) packaging reduces potential exposure to children and pets from ingesting/ contacting the pesticide stored or kept in non-labeled containers such as coffee cans or nonpesticide spray bottles which are commonly used by homeowners.

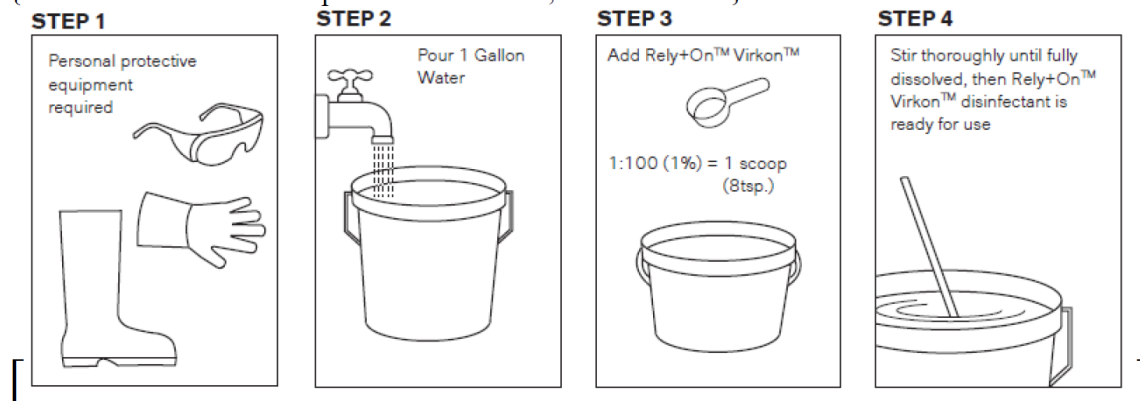
BACWA concurs and recommends a call to remove concentrates from the non-professional user market, i.e., retail stores/over-the-counter sales. Handling concentrates is dangerous and is associated with both harm to humans (poisonings) and to the environment (e.g., spills).

Recognizing that EPA cannot easily and immediately remove all concentrates from the consumer marketplace, BACWA recommends simplifying the language and providing information in units that are understandable to consumers. EPA has already developed pictograms demonstrating the dilution of antimicrobial pesticides that could be adapted and standardized for conventional pesticides for non-professional users (see Figure 3).

{32 oz of solution from powder instructions, 1:100 dilution}



{1 Gallon of solution from powder instructions, 1:100 dilution }



[Measuring cup provided.] [1 Scoop = [1.3 ounces][8tsp]] [[1 measuring cup = 1 scoop =][1.3oz][=][8 tsp]]

Figure 3: Examples of antimicrobial pictograms showing mixing instructions. Source: EPA Pesticide Product Label, Rely + On Multipurpose Disinfectant Cleaner, https://www3.epa.gov/pesticides/chem_search/ppls/039967-00138-20210610.pdf

3. Many untrained, unlicensed pesticide users cannot read pesticide labels due to small font size or challenges with literacy.

A visual acuity of 20/30 and 20/40 is required to read the average general use and restricted use pesticide label, respectively. In addition, the mean and mode cognitive reading level required is the 11th grade.¹⁰ According to the US Department of Education National Center for Education Statistics, Organization for Economic Cooperation and Development (OECD), more than half of Americans read below an 8th grade reading level, which means there is a significant gap between the reading level in pesticide labels and those who read them.¹¹ Additionally, most pesticide labels are only provided in English, which prevents many pesticide users from being able to read the label.

BACWA asks that EPA consider the particular challenges of untrained, unlicensed users, by including the following changes on the updated label structure:

- Simplify pesticide label language to better accommodate the reading level of most adults in the United States.
- Use pictograms, where appropriate, to flag users about warnings.
 - The GHS includes a series of pictograms (such as the environmental hazard pictogram at right). The GHS also includes decision logic trees for when to use pictograms.
 - The GGLPP provides additional examples of pictograms such as one specific to aquatic toxicity (GGLPP, p. 41 of 83) and an example pictogram from South Africa to indicate harms to wildlife and birds (GGLPP, p 74 of 83).
- Place the most important information at the top of the list of directions, given that it is not uncommon for people to just scan information.
- Requirements for pictograms must include a minimum graphic size. The GGLPP states that while sizes will vary due to container sizes, *hazard* pictograms “must not be less than 10 x 10 mm” (GGLPP, p. 37 of 83), while for *precautionary* pictograms the “preferred size ... is 15 x 15 mm; the minimum 7 x 7 mm” (p. 39 of 83).
- For pesticide labels for non-agricultural use, provide warning information inside the ‘directions for use’ section of the label. Studies have shown that consumers are much more likely to comply with warning/hazard information, when it is placed in the same section as the ‘directions for use’.¹²



Figure 4: Examples of environmental hazard and aquatic toxicity pictograms. Sources: GHS and GGLPP.

¹⁰ Lockwood, JA, et al. (1994) Pesticide labels: proven protection or superficial safety? J Am Optom Assoc. 1994 Jan; 65(1):18-26.

¹¹ US Department of Education National Center for Education Statistics, Organization for Economic Cooperation and Development (OECD), <https://nces.ed.gov/surveys/piaac/state-county-estimates.asp#functions>

¹² Edworthy, J., et al., (2004). Linguistic and Location Effects in Compliance with Pesticide Warning Labels for Amateur and Professional Users. Human Factors, 46(1), 11–31. <https://doi.org/10.1518/hfes.46.1.11.30383>

- Select a readable font size for the most important sections of the label. As noted in the White Paper, the FDA completed extensive work regarding font size, readability, etc. for its updated food labels (White Paper, p. 5). BACWA supports EPA gleaned insights from the recent improvements to food labels. In addition, the GGLPP recommends specific fonts and color schemes (GGLPP, p. 63, 76 and 77 of 83).
- Use font size, border weight, and color to emphasize warnings on labels. The use of larger font, thicker borders around text, and colored text have been shown to successfully capture users' attention and retention of information on pesticide labels, with font size being the most impactful.¹³ The GGLPP recommends an 11-point font and notes that bold is more effective than capital letters for highlighting (GGLPP, p. 34 of 83).
- Provide labels in multiple languages.
- Recognize that many unlicensed, untrained users are unlikely to have access to digital labels. Critical information should be included in both the product label and the digital label.

Thank you for your consideration of our comments. If you have any questions, please contact BACWA's Project Managers:

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Respectfully Submitted,



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¹³ Adams, Austin S. & Edworthy, Judy (1995) Quantifying and predicting the effects of basic text display variables on the perceived urgency of warning labels: tradeoffs involving font size, border weight and colour, Ergonomics, 38:11, 2221-2237, DOI: 10.1080/00140139508925264

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