

## Comparative Safety Statements or Logos for Pesticide Labels

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### Abstract

The US Environmental Protection Agency is considering allowing logos or statements on pesticide labels to indicate comparative safety. Their objectives are to facilitate informed purchaser choices and to move the market toward “safer” products. The elements of such a system will need to be carefully chosen to accomplish program objectives without resulting in unwanted consequences such as resistance development, inappropriate consumer choices, or negation of the protections provided by current label precautionary statements and restrictions.

**Keywords:** label, pesticide, EPA, PPDC, safety, product, consumer

### Background

In response to registrants’ requests, the US Environmental Protection Agency (EPA) is considering allowing pesticide product labels to carry a logo, seal of approval, or statement indicating the product is in some way safer than other products (PPDC Workgroup, 2008 a, b). The objectives are to (1) facilitate informed purchaser choices and (2) move the market as a whole toward “safer” or “more desirable” products through peer pressure and market shifts. Institution of such a system could have profound effects on product availability and proper usage.

The federal government has defined “green” as “recycled content products, environmentally preferable products and services, bio-based products, energy- and water-efficient products, alternate fuel vehicles, products using renewable energy, and alternatives to hazardous or toxic chemicals” (Office of the Federal Environmental Executive, 2008 a, b). Although there are no programs for pesticides, programs certifying various other products as “green” do exist and could be used as models (Table 1). They use different criteria, but all programs aim to facilitate consumer

choices through a logo or seal of approval for more environmentally friendly products.

### Considerations

#### Ownership of the Program

Some existing logo programs are directed by federal agencies, some are run by private entities, and still others are a partnership between an agency, which sets criteria and a private entity, which reviews manufacturers’ data and awards the logo. Because some producers are not willing to pay the fees required for review by some of the certification programs, products that do not bear the seal might actually be equally “safe,” leaving consumers with a false impression of which products are preferable. Such a system also leaves itself open to questions of whether the logo-bestowing entity might be influenced by the fees paid. Other logo programs utilize a system whereby every pesticide product undergoes review and has an equal opportunity to meet the criteria.

#### Approaches to Awarding Approval

Implicit in a logo system is the establishment of some set of criteria by which to measure product desirability.

Current examples include programs that award a logo or seal only to a set proportion of the total pool of products, and programs that award it to every product meeting the designated criteria. If consumers do, in fact, prefer logo-bearing products, both systems would presumably result in moving the market toward more preferable products. However, subtle and profound differences exist between the two systems. The hypothetical example below illustrates the differential effects of moving the market toward “safer” products in a percentage-based vs. criteria-based approach to a logo system.

For the sake of simplicity, the following assumptions apply in this example:

- (1) The percentage-based system specifies only the top 25% of the total available products qualify for the logo regardless of how many criteria are met.
- (2) The criteria-based system specifies all products meeting any three (or more) of the five total “preferable” criteria qualify for the logo.
- (3) The total number of products available remains the same over the five-year period of the example.
- (4) Each desirable criterion presents some added cost (e.g., more expensive ingredient(s), reduced efficacy, negative effect on a related criterion, etc.), thus achieving higher numbers of desirable criteria becomes increasingly difficult for registrants.

Under both systems peer and market pressures cause registrants to withdraw less desirable products and substitute products meeting more of the “preferable” criteria (Table 2). However, the actual number of products and the number of criteria met by products qualifying for a logo under the two systems differ (Figure 1).

In the percentage-based system, by definition, only the top 1000 of the total 4000 available products qualify for the logo. In 2010, a total of 800 products meet three or more criteria, leaving 200 available logo slots. Presumably, those slots would be filled from the pool of products meeting two of the five criteria. It is not clear how those 200 products would be selected when there are 2300 products in that pool in year 2010.

In 2015, a similar problem occurs, but this time within the pool of products meeting three of five criteria. The percentage of products bearing the logo has remained constant (25%) over time, but products that were acceptable in 2010 are now so numerous they overflow the logo-granting pool. It's reasonable to assume registrants feel constant pressure to increase the number of criteria their products meet in order to ensure their place within the top 25%, and thus qualify for the logo. As products meet more and more of the criteria, there should be fewer significant differences between products at the upper end of the measurement scale. This system provides little incentive for registrants at the lowest end of the scale from trying to improve their products incrementally since the likelihood of achieving the logo designation would remain small. Pressures under the percentage-based system would seem to favor products already toward (but not at) the top of the desirability criteria

regardless of whether significant differences between these criteria exist. Determining which products at the lower end of the cut-off should receive the logo would be problematic.

In the criteria-based system, the percentage of products bearing the logo in this example increased over time from 20% to 85%. Under this system, there is less incentive for registrants to improve the number of “preferable” criteria met by their products once the logo qualifying level has been reached, although it does increase the pressure to move into the logo-qualifying level since all such products will be accepted. The criteria-based system also allows more flexibility for registrants to target criteria that are meaningful given the use patterns of their products.

Consider this example: five “preferable” criteria are designated as (1) low acute toxicity to humans, (2) non-carcinogenicity, (3) low toxicity to wildlife, (4) low volatility, and (5) low potential for contamination of groundwater. A product might meet criteria 1, 2, and 4 and would qualify under the criteria-based system in 2015, but might not be chosen as a logo-bearing product under the percentage-based system since half of the products meeting three criteria would somehow have to be distinguished. If this product were labeled for indoor use only, in reality it would be no less desirable than a product that meets all of the criteria since there would be very little likelihood of contact with wildlife or groundwater.

### **Comprehensiveness**

Because so little is known about public comprehension of logos or safety statements and about subsequent product choices, pilot-testing a program with antimicrobials and/or consumer

pesticide products seems prudent. Research should be conducted to determine whether the pilot system elements are actually facilitating good choices or persuading consumers to make inappropriate choices (*e.g.*, preferentially choosing products that bear the logo but are not registered for the site or pest). Lessons learned could then be applied to other markets, although regulators would be wise to first weigh any additional implications and outcomes not yet tested in the consumer-oriented market.

### **Flexibility**

When choosing a pesticide, many factors must be considered, including crop or site, efficacy against target pest(s), soil type, local weather conditions, etc. It will be difficult to design a logo program that can convey a succinct, accurate indication of product safety and still allow for these nuances.

### **Web-based Sales**

Retail sources and purchasing agents may choose to feature only logo-bearing products. Wal-Mart, which has a representative on the Work Group, plans to move in some way toward products that are “safer” or demonstrate a smaller carbon footprint. If extended to agricultural pesticides, grocery stores and processors might also feel pressure to carry only foods produced with logo-bearing products. As users search for non-logo products (still registered by EPA and presumably safe when used according to label directions), more people might be driven to find and purchase products available on the Web.

### **Bans against Use of Non-logo-bearing Products**

Schools, day care centers, nursing homes, and towns will face pressure to use only products with the logo, effectively banning use of non-logo products within their facility or boundaries. In some cases, non-logo-bearing products might be a better choice for a particular pest or site, but they would not be available under these conditions.

### **Resistance Development**

On its face, moving the market away from pesticides that do not meet criteria seems beneficial. One possible negative outcome can be postulated: What would happen if an entire class of pesticides (e.g., organophosphates) does not meet the criteria? As non-logo-bearing products become scarce, resistance could develop when users are unable to rotate between pesticide classes.

### **Current Label Precautions and Restrictions**

Not all label elements easily lend themselves to classification in a logo system, e.g. personal protective equipment, restricted entry intervals, barrier strips, setbacks, rate reductions, restrictions on timing and method of application, etc. In addition to cancellation of uses, these are the primary methods to ensure pesticides are used in a manner safest for human health and the environment. The active and inert ingredients alone are not the sole determiners of product safety; how one uses the product is key.

### **Conclusions**

Few, if any, pesticide safety educators would disagree with the premise of facilitating informed decision-making. Some, even many, would approve of providing an opportunity to move the market toward “safer” or more “environmentally friendly” products. However, it is prudent to carefully consider how such terms would be defined and how they would be expected to work under all circumstances. The problems are in the details.

### **References**

- Office of the Federal Environmental Executive. (a) 1998. Executive Order 13101: Greening the government through waste prevention, recycling, and federal acquisition. <http://www.ofee.gov/eo/13101.asp>. Accessed 10/24/2008.
- Office of the Federal Environmental Executive. (b) Green Purchasing. <http://ofee.gov/gp/gp.asp>. Accessed 10/24/2008.
- PPDC (Pesticide Program Dialogue Committee) Comparative Safety Statements or Logos for Pesticide Product Labeling Workgroup. (a) 2008. PPDC Workgroup Meeting, 10 September 2008, Arlington, VA.
- PPDC (Pesticide Program Dialogue Committee) Comparative Safety Statements or Logos for Pesticide Product Labeling Workgroup. (b) 2008. PPDC Workgroup Meeting, 6 October 2008, Arlington, VA.

**Table 1.** Logo-type Programs Presented as Examples at the 09/10/2008 Meeting of the PPDC Comparative Safety Statements or Logos for Pesticide Labels Work Group.

Program	Affiliation	Description	Organization Website
Design for Environment (DfE)	US EPA	Identifies safer chemistries for product manufacturers and formulators of electronics, flame retardants, cleaners and detergents.	<a href="http://www.epa.gov/dfe/">http://www.epa.gov/dfe/</a>
EcoLogo	Canadian federal government program managed by TerraChoice Environmental Marketing, Inc.	Identifies “environmentally preferable” automotive, janitorial, & consumer products; containers & packaging; office furniture & business products; and a variety of other goods and services.	<a href="http://www.ecologo.org/en/">http://www.ecologo.org/en/</a>
Energy Star	US EPA and US Department of Energy	Identifies energy-efficient products including appliances, home electronics, lighting, etc.	<a href="http://www.energystar.gov/">http://www.energystar.gov/</a>
Green Seal	Independent, non-profit organization	Identifies “more environmentally desirable” industrial cleaners, paints, and paper products.	<a href="http://www.greenseal.org/">http://www.greenseal.org/</a>
National Organic Program	US Department of Agriculture	Identifies foods produced using acceptable pesticides only: “100% organic,” “organic” and “made with organic.” The first two categories may also carry the USDA organic seal.	<a href="http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateA&amp;navID=NationalOrganicProgram&amp;leftNav=NationalOrganicProgram&amp;page=NOPNationalOrganicProgramHome&amp;acct=nop">http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateA&amp;navID=NationalOrganicProgram&amp;leftNav=NationalOrganicProgram&amp;page=NOPNationalOrganicProgramHome&amp;acct=nop</a>

**Table 2.** Effect of Moving the Market toward “Safer” Products in Percentage-based vs. Criteria-based Approaches: Number of Products Meeting Criteria.

	Number of Products, Year 2010		Number of Products, Year 2015	
	Percentage-Based System	Criteria-Based System	Percentage-Based System	Criteria-Based System
Number of products meeting 0 or 1 of 5 criteria	900	900	200	50
Number of products meeting 2 of 5 criteria	2300	2400	390	500
Number of products meeting 3 of 5 criteria	500	500	2000	3100
Number of products meeting 4 of 5 criteria	200	200	600	200
Number of products meeting 5 of 5 criteria	100	100	110	100
<b>Total number of products</b>	<b>4000</b>	<b>4000</b>	<b>4000</b>	<b>4000</b>

**Figure 1.** Effect of moving the market toward “safer” products in percentage-based vs. criteria-based approaches: Number and characteristics of products receiving the logo.

