



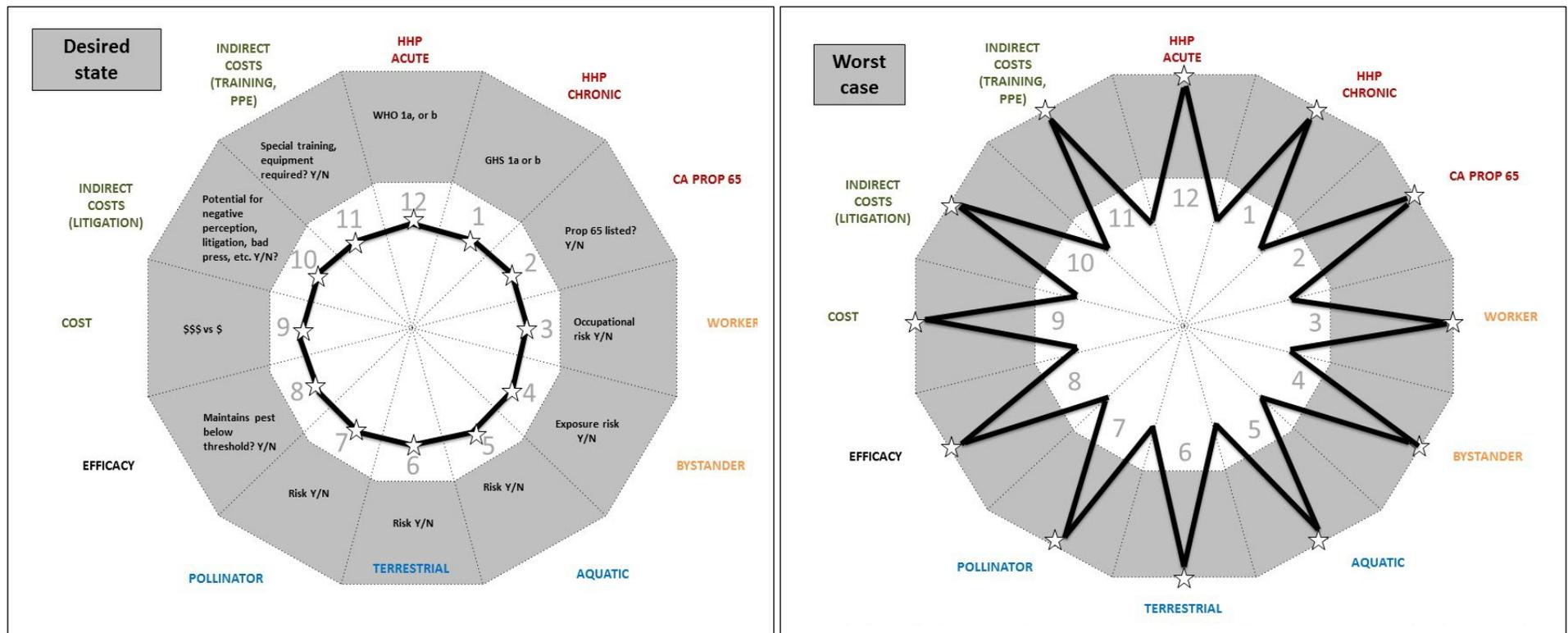
Pesticide Risk Footprint Tool*

Adapted by the Contra Costa County Integrated Pest Management Program

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This tool is intended to assist in the evaluation of risks associated with pesticide products. It is not a comprehensive analysis of all risks. Each of the twelve triangular panels forming a dodecagon represent a certain type of risk. The placement of a star on the inner portion of the panel indicates that the product being reviewed does not meet criteria to be considered high risk as specified on the following page. Star placement on the outside edge constitutes elevated risk as determined by the proposed standards. The stars are then connected to form a footprint. The increased area of the footprint's spiked portions visually depicts heightened risk and helps to prioritize mitigation measures. The use of dashed lines in some footprint spikes represents a risk that can be mitigated. If mitigation measures are not possible or are otherwise unavailable, the associated spike will utilize solid lines.

The mission of the County IPM Policy is to *effectively manage pests with minimal risk to humans and the environment*. County applicators and personnel responsible for the procurement and application of pesticides should consider the tool when determining whether a certain product is compatible with the broader IPM program. Since site characteristics and application methods vary widely across County operations, the footprint for a given product should be analyzed specifically in the context for which it is used. One application may use a backpack sprayer for a spot treatment of herbicide at a childcare facility. Another situation could involve the same product being applied near an airport runway with a boom sprayer. These and other scenarios present important circumstantial factors that merit separate considerations.



*Jepson, P.C., Murray, M.K.Y. (unpublished) Pesticide cost—benefit trade-off tool. For further information contact Paul.c.jepson@gmail.com

Risk Category	Source Justification or Rationale for Designation
1. Highly Hazardous Pesticides (HHP)—Chronic	Globally Harmonized System of Classification and Labeling of Chemicals (GHS) category 1A or 1B for carcinogenicity, mutagenicity/genotoxicity, or reproductive toxicity. Indicated on Table 1 (pages 7-10) of the supplementary index of Jepson PC, Murray K, Bach O, Bonilla MA, Neumeister L. Selection of pesticides to reduce human and environmental health risks: a global guideline and minimum pesticides list. <i>Lancet Planet Health</i> 2019; 3: e56–63.
2. CA Prop 65 Listed	The Proposition 65 List is maintained by the California Office of Environmental Health Hazard Assessment.
3. Occupational Risk (Worker)	The U.S. Environmental Protection Agency (EPA) acute toxicity category 1 (danger), category 2 (warning), or World Health Organization (WHO) class II (moderately hazardous). WHO class II pesticides are available on Table 3 (pages 27-40) of the document available for download at https://www.who.int/publications/i/item/9789240005662
4. Exposure Risk (bystander, site patron, etc.)	Panel is marked on the outer edge if the restricted entry interval (REI) is greater than four hours as specified on the product label in the applicable use requirements section. Application methods & site characteristics may justify star placement on the outer edge in many circumstances as determined by the IPM Coordinator or staff supervisors.
5. Risk to Aquatic Species	Panel is marked on the outer edge if active ingredient deemed as an intermediate (I), high (H), or extra high (X) potential pesticide hazard to fish in queries made to the University of California Statewide IPM Program’s WaterTox database OR if the product safety data sheet (SDS) references the EPA designation as moderately toxic or highly toxic to freshwater fish, freshwater invertebrates, estuarine/marine fish, or estuarine/marine invertebrates.
6. Risk to Terrestrial Species	Panel is marked on the outer edge if the product safety data sheet (SDS) references the EPA designation as moderately toxic or highly toxic to mammalian and avian wildlife.
7. Risk to Pollinators	Panel is marked on the outer edge if active ingredient is rated I (toxic to honey bees and other bee species) or II (toxic to honey bee brood) in the Bee Precaution Pesticide Ratings tool as maintained by the University of California Statewide IPM Program.
8. Efficacy	Subjectively determined by the IPM Coordinator after consulting with departmental staff members, outside agency personnel who work in similar microclimatic conditions, academic product trials, etc.
9. Cost	Subjectively determined by the IPM Coordinator after reviewing baseline cost data, historic and projected quantities of product purchased, relative scale and frequency of application(s), actual staff/contractor labor costs, etc.
10. Indirect Costs (Litigation, public perception)	Subjectively determined by the IPM Coordinator after considering public scrutiny of pesticide-related trends and other applicable current events.
11. Indirect Costs (Training, PPE, Equipment, etc.)	Subjectively determined by the IPM Coordinator after evaluating fiscal elements that may include site/program-specific training costs, supplemental personal protective equipment in addition to what the State’s minimal requirements, specialized equipment acquisition/maintenance/transporting, and other cost considerations.
12. Highly Hazardous Pesticide (HHP)—Acute	World Health Organization (WHO) class 1A (extremely hazardous) or 1B (highly hazardous). Indicated on Table 1 (pages 7-10) of the supplementary index of Jepson PC, Murray K, Bach O, Bonilla MA, Neumeister L. Selection of pesticides to reduce human and environmental health risks: a global guideline and minimum pesticides list. <i>Lancet Planet Health</i> 2019; 3: e56–63.