Cal-IPC FACT SHEET and POSITION STATEMENT **2017.10.20**

The Use of Glyphosate for Invasive Plant Management

Background on Issue

In 2015, the World Health Organization's International Agency for Research on Cancer (IARC) classified glyphosate, the active ingredient in RoundUp herbicide, as "probably carcinogenic to humans." IARC classifies many substances, including naturally-occurring substances, as probable carcinogens.

Other agencies have recently reached different conclusions from IARC. For example, the US Environmental Protection Agency (EPA) and the European Food Safety Authority re-examined all pertinent scientific studies and disagreed with the IARC conclusion. In its 2016 Issue Paper on glyphosate, the US EPA concluded that the best descriptor based on the science is that glyphosate is "not likely to be carcinogenic to humans" at doses relevant to human health risk. And the September 2016 issue of the journal *Critical Reviews in Toxicology* published comprehensive reviews by expert panels, concluding that glyphosate is "unlikely to pose a carcinogenic risk to humans."

Further, if one accepts the IARC classification of glyphosate as "probably carcinogenic to humans," this does not mean that glyphosate has been shown to cause cancer in people. The IARC classification designates a substance's carcinogenic potential, but does not consider actual exposures in real-world situations. When they did consider exposure, the World Health Organization itself (through its Panel of Experts on Pesticide Residues in Food and the Environment) and the United Nation's Food and Agriculture Organization, in a joint meeting in 2016, concluded that "glyphosate is unlikely to pose a carcinogenic risk to humans from exposure through the diet."

In December 2016, experts convened by the US EPA as a Scientific Advisory Panel to review EPA's earlier Issue Paper were split in their expert opinion. Some agreed with the Issue Paper's conclusion that glyphosate is not likely to be carcinogenic to humans, especially at reasonably foreseeable dose-rates, while other panel members thought it would be more accurate to say that there is "suggestive evidence of carcinogenic potential." Panelists noted that crucial data were equivocal, and that additional data on cancer morbidity and/or mortality from studies of glyphosate-exposed workers would be desirable.

In California, the IARC classification triggered the California Office of Environmental Health & Hazard Assessment (OEHHA) to mandate that products containing glyphosate receive a Prop. 65 warning label as a "known carcinogen." This went into effect on 7/7/2017. OEHHA has proposed the establishment of a "no significant risk level" (NSRL) for glyphosate. The initial proposed level is 1.1 mg/day. This value is based on lifetime (1-2 years) dietary exposure tests with rodents, with the results scaled for humans. OEHHA has solicited peer review and public comment, and has not specified when a final rule will be available. More information is needed on the relationship between this level and the frequency of exposure, since assessments of carcinogenicity are based on long-term, chronic exposure estimates.

No guidance has been published on how this NSRL relates to the typical exposure scenario for a land manager applying glyphosate. The EPA Science Advisory Panel Report estimates exposures as high as 0.03-7 mg/kg/day for mixer-loaders and 0.02-0.03 mg/kg/day for applicators, but these estimates include applications that are made in agricultural settings using the maximum rate per acre allowed by product labeling. Further, these estimates do not factor in the use of personal protective equipment

(PPE) such as coveralls, eye protection and chemical-resistant gloves. The US Forest Service (USFS) estimates that a glyphosate application rate of 1.2 lbs a.e./acre via backpack sprayer would result in an applicator exposure of 1.1 mg/day. This application rate and its corresponding applicator exposure estimate are likely overestimations in the majority of glyphosate applications for wildland weed control. This is primarily due to the fact that wildland weed control projects generally use spot spraying and not broadcast applications. Further, as with the US EPA estimates, the USFS exposure value does not factor in the use of PPE.

Cal-IPC Position on Issue

Cal-IPC supports the use of glyphosate in invasive plant management as part of an of Integrated Pest Management (IPM) approach. When using glyphosate according to the label, with appropriate personal protective equipment and best practices, glyphosate is low-risk for wildlife, applicators and the public.

Cal-IPC Background

Cal-IPC has a formal policy on Integrated Weed Management which supports the use of herbicides as part of an Integrated Pest Management (IPM) approach. Decisions should be based on the best-available scientific information. As new information becomes available, it should be incorporated, and positions and practices should be adjusted accordingly.

Cal-IPC is dedicated to environmental protection and science-based public policy. We support the work of environmental colleagues to reduce risks from toxics in the environment as well as work of scientists at EPA and OEHHA to objectively assess the level of risk from herbicides such as glyphosate.

References

WHO/FAO 2016 Report on Pesticide Residues: http://www.who.int/foodsafety/jmprsummary2016.pdf

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Cal-IPC Policy on Integrated Weed Management: http://www.cal-ipc.org/wp-content/uploads/2017/10/Cal-IPC-Policy-on-IWM.pdf

Cal-IPC Best Management Practices for Wildland Stewardship: Protecting Wildlife When Using Herbicides for Invasive Plant Management: http://www.cal-ipc.org/resources/library/bmp-wildland-stewardship/

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