January 10, 2020

Environmental Working Group Comments to the Environmental Protection Agency
Docket ID: EPA-HQ-OPP-2014-0772
Subject: Metolachlor/S-Metolachlor: Draft Human Health Risk Assessment for Registration Review

The Environmental Working Group, a nonprofit research and policy organization with offices in Washington, D.C., Minneapolis, Minn., San Francisco and Sacramento, Calif., is submitting comments on the Environmental Protection Agency's draft human health risk assessment for the herbicide metolachlor.

EWG has researched pesticide toxicity since 1993, especially the risks of pesticides to children's health. EWG strongly disagrees with two EPA decisions in the 2019 draft assessment for metolachlor: first, the dismissal of an additional FQPA children's health safety factor; and second, the development of a chronic reference dose for metolachlor that is based on an older rather than a newer toxicology study.

EWG reviewed two recent EPA assessments for metolachlor, from 2018[1] and 2019.[2] In the 2019 assessment, the chronic exposure limit for metolachlor was increased 2.7-fold due to the baffling decision to base the reference dose on an older rather than a newer study. In risk assessments published in 1995[3] and 2014[4] as well as in 2018, the chronic reference dose for metolachlor was based on a one-year toxicity study in dogs completed in 1989. The study was conducted by the Ciba-Geigy Corporation and reported a No Observed Adverse Effect Level (NOAEL) of 9.7 mg/kg/day, as the EPA reviewed in 1993.[5] At the next higher dose examined in the study, 33 mg/kg/day, exposed animals experienced decreased body weight gain. The same study and the same NOAEL have been used in the European Union assessment of metolachlor and the development of the European "Acceptable Daily Intake" dose for chronic exposures to this pesticide.[6]

Rather than requiring a new, in depth toxicology study, in the 2019 assessment for metolachlor, the EPA proposed a different chronic exposure level for this pesticide, one that is based on a two-generation reproduction study on rats, which was completed in 1981.[7] In that study, groups of F_0 generation animals were exposed to three metolachlor doses of 2.4/2.5, 23.5/26, and 75.8/85.7 mg/kg/day for males and females, respectively. The EPA pointed to the dose of 23.5/26 mg/kg/day as the offspring NOAEL and used that dose for establishing a chronic reference dose. At the next dose tested, decreased body weights were observed in both F_1 and F_2 litters. Toxicology data clearly demonstrate that adverse effects are observed in dogs following a year of exposure with internal doses of metolachlor lower than internal doses of this pesticide in the rat study.

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In the "Metolachlor and S-Metolachlor: Draft Human Health Risk Assessment for Registration Review" document from Sept. 12, 2019, the EPA did not present a rationale for using a different animal bioassay to identify a point of departure for chronic dietary exposure in the general population. The EPA also did not explain or discuss the fact that, with this proposed approach, the chronic population adjusted dose for metolachlor would increase nearly threefold, from 0.097 mg/kg/day to 0.26 mg/kg/day. This decision diverges from the EPA's official policy on the FQPA implementation, which emphasized identifying the most sensitive toxicity effects for the reference dose development.[8]

Moreover, concern for the potential developmental toxicity of metolachlor cannot be addressed by a study conducted nearly 4 decades ago, which did not examine potential changes in the endocrine function or other physiologic pathways that may be relevant to developmental toxicity. Research published in the peer-reviewed literature suggests that exposure to metolachlor can affect hormonally related physiologic processes in laboratory animals.[9] Additionally, the EPA has not required metolachlor manufacturers to conduct neurotoxicity studies of these pesticides, and therefore concerns about potential neurotoxicity of metolachlor remain. These considerations, taken together, support the use of full tenfold FQPA children's health safety factor.

In summary, the EPA's proposal to use an older toxicology study and to increase the allowable level of metolachlor exposure leaves public health and children's health at risk. To remedy the shortcomings in the draft human health assessment document for metolachlor, EWG urges the EPA to apply the full tenfold children's health safety factor for this pesticide and to lower the chronic reference dose for metolachlor exposure. At a minimum, the chronic reference dose should not be higher than the reference dose established in earlier assessments of this pesticide.

Submitted on behalf of the Environmental Working Group,

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[2] Environmental Protection Agency. Metolachlor/S-Metolachlor: Draft Human Health Risk Assessment for Registration Review. 2019. https://www.regulations.gov/document?D=EPA-HQ-OPP-2014-0772-0030
[3] U.S. Environmental Protection Agency. Reregistration Eligibility Decision (RED). Metolachlor. 1995. https://archive.epa.gov/pesticides/reregistration/web/html/index-176.html

[4] Environmental Protection Agency. Metolachlor and S-Metolachlor. Human Health Scoping Document in Support of Registration Review. 2014. https://www.regulations.gov/document?D=EPA-HQ-OPP-2014-0772-0003

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[8] Environmental Protection Agency. Determination of the Appropriate FQPA Safety Factor(s) in Tolerance Assessment. 2002. https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/determination-appropriate-fqpa-safety-factors

[9] Mathias FT, Romano RM, Sleiman HK, de Oliveira CA, Romano MA. Herbicide metolachlor causes changes in reproductive endocrinology of male Wistar rats. ISRN Toxicol. 2012:130846. doi: 10.5402/2012/130846.
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