Methodological Advancements for Drinking Water Assessments Update
May 20-21, 2020 Pesticide Program Dialogue Committee Meeting

EPA employs a robust, tiered process designed to efficiently screen out pesticides that do not pose a potential risk to human health from those requiring more highly refined analyses to better understand potential risks. This process is described in the August 2019 Drinking Water Assessment Framework (see https://www.regulations.gov/document?D=EPA-HQ-OPP-2019-0417-0006). For more highly refined analyses, EPA recently developed three new methods to improve drinking water assessments for conventional pesticides. The methods focus on drinking water exposure via surface water sources. EPA plans to implement them in new drinking water assessments later this year.

Project 1: New Surface Water Modeling Scenarios for the Pesticide in Water Calculator (PWC)
- EPA developed a method to build new scenarios (a combination of crop, soil type, and weather data) for the Pesticide in Water Calculator (PWC), the standard water exposure model for both drinking water and aquatic wildlife.
- Using advances in best available spatial data, the new scenarios improve the accuracy, consistency, and transparency of drinking water and aquatic exposure modeling.
- Scenarios are defined at the 90th percentile exposure value for each crop or group of crops for each of the 18 HUC-02 regions in the contiguous United States.
- The scenario development process has been externally peer reviewed and through a public comment period from January to March 2020[1] (see https://www.epa.gov/pesticides/epa-requests-comments-new-methodologies-estimate-pesticide-concentrations-surface-waters) . EPA worked with USDA to refine model parameters such as crop planting and harvesting dates, crop groupings, and agricultural practices.

Project 2: Percent Cropped Area (PCA) and Percent Crop Treated (PCT) for Higher Tier Drinking Water Assessment Refinements
- EPA developed methods to better account for variability in the agricultural area within a watershed that may contribute to a drinking water intake (PCA) and to incorporate data on the amount of a pesticide that is applied within a watershed for each use (PCT).
- EPA plans to use the new PCA and PCT methodologies to refine estimated drinking water concentrations using more realistic inputs only when initial model results based on conservative assumptions at lower tiers of refinement indicate that concentrations may exceed drinking water levels of concern (DWLOCs).
- Currently EPA uses maximum PCA values for national and regional assessments. The new method will utilize the full distribution of PCA values across all Community Water System (CWS) watersheds.
- PCT has not previously been used in drinking water assessments. The new methods are similar to the use of PCT in endangered species assessments.
- The new PCA and PCT methods have been externally peer reviewed and through a public comment period from January to March 2020[2] (see https://www.epa.gov/pesticides/epa-requests-comments-new-methodologies-estimate-pesticide-concentrations-surface-waters).

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[1] EPA is establishing a docket that will contain the public comments, peer review report and associated materials.

[2] EPA is establishing a docket that will contain the public comments, peer review report and associated materials.

Project 3: Quantitative Use of Surface Water Monitoring Data in Drinking Water Assessments

- EPA developed and validated a method for using the USGS SEAsonalWAVEQ with EXtended capabilities model (SEAWAVE-QEX) to confidently use surface water monitoring data to estimate pesticide concentrations in higher tiered drinking water assessments.
- To address temporal challenges with available monitoring data, EPA developed methods to derive and integrate pesticide-specific sampling bias factors.
- To address spatial limitations with available monitoring data, EPA will use a weight-of-evidence approach to evaluate the relevance of monitoring sites to drinking water watersheds.
- The methods for quantitative use of surface water monitoring data were peer reviewed by the FIFRA Scientific Advisory Panel in November 2019 (see https://www.regulations.gov/docket?D=EPA-HQ-OPP-2019-0417).