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**OFFICE OF PREVENTION, PESTICIDES
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Subject: Clarification of the Trifluralin Drinking Water Assessment for the Health Effects Division (HED) Tolerance Reassessment (PC Code: 036101) and characterization on relative differences of USGS NAWQA ground water monitoring data and its comparison to SCI-GROW model predictions as presented in the NRDC objection (Imidacloprid FR) and the trifluralin TRED (D308490)

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This memorandum provides clarification and characterization on the relative difference in USGS NAWQA ground water monitoring data for trifluralin and its comparison to SCI-GROW model predictions as presented in the NRDC objection (Imidacloprid Order Denying Objections to Issuance of Tolerance, Federal Register Notice OPP-2004-152; FRL 7355-7; hereafter referred to as the Imidacloprid FR) and the trifluralin TRED. In the TRED, SCI-GROW model predictions are lower than the maximum reported trifluralin concentration in the USGS NAWQA groundwater monitoring data. In contrast, the SCI-GROW model performance assessment in the Imidacloprid FR indicates the trifluralin concentration in groundwater, as predicted by SCI-GROW, is greater than the 99.8 percentile concentration from the NAWQA groundwater monitoring data. The relative difference of the SCI-GROW estimates and its comparison to monitoring data can be explained by the use of different percentile concentrations as well as use of different trifluralin application rates.

SCI-GROW modeling in the TRED was conducted using an application rate of 4 lbs ai/A (maximum application rate for sugarcane on the CORNBELT LABEL, EPA Reg. No. 11773-17), median Koc of 7384 L kg oc⁻¹ (MRID 40673501), average aerobic soil half-life of 168.7 days (MRID 41240501), and application interval of 180 days. In contrast, the model performance assessment of SCI-GROW was conducted using similar environmental fate parameters and an application rate of only 2 lbs ai/A. Predicted groundwater concentrations of trifluralin were 0.0346 ug/L and ~0.015 ug/L for the TRED and model performance assessment, respectively. These differences are not unexpected because the SCI-GROW model predictions are linearly dependent on application rate when all other fate data are similar.

The USGS NAWQA ground water monitoring in the TRED were obtained from the NAWQA data warehouse on August 12, 2003 (<http://water.usgs.gov/nawqa/data>). These data represent NAWQA groundwater monitoring data as of September 30, 2002. In contrast, the SCI-GROW model performance assessment was conducted using June 11, 2001 data (covering samples collected up to about one to two years to the date the analytical results were compiled). It is important to note the NAWQA data warehouse is not a static data set because it is being updated at regular intervals. Therefore, the data set available for any compound is dependent on the time of data retrieval.

Additional characterization of the USGS NAWQA ground water monitoring data in the TRED is required for equal comparison with the SCI-GROW model performance assessment. In the TRED, the SCI-GROW estimate is compared to the maximum value (100 percentile) in the monitoring data. Since no risk concerns were identified even with exposure to the maximum observed concentration of trifluralin, no additional comparisons to the monitoring data was conducted, including the examination of the frequency distribution of trifluralin residues in ground water.

Unlike the trifluralin TRED drinking water assessment, the SCI-GROW model performance assessment for the Imidacloprid FR was conducted using the 99.8 percentile concentration. This percentile was selected because:

1. Due to sample size limitations of some studies, it is the highest percentile concentration used to develop the SCI-GROW regression model.
2. Some individual observation wells may be positioned in a way that leaching from normal field application of pesticides may result in higher levels of contamination than occur in the ground water actually used for drinking water in the study area.

Further characterization of the USGS NAWQA groundwater monitoring data used in the TRED indicates the 99.8 percentile concentration is 0.012 ug/L. The distribution is highly skewed because 99.5% of the data (10,034 samples from 10,083 samples) were non-detections. These data show the SCI-GROW estimate is greater than the 99.8 percentile concentration in the USGS NAWQA groundwater monitoring data. A similar observation was made with the earlier NAWQA data set used in the SCI-GROW model performance assessment supporting the imidacloprid FR.