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OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

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MEMORANDUM

SUBJECT: Tier 1 Drinking Water Assessment for Sulfosate with GENEEC and SCI-GROW.
PC Code: 128501. DP Barcodes D243384, D243314

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CONCLUSIONS

The estimated surface water concentrations are 125.43, 114.08, 70.55, and 34.65 ppb for peak, 4-day average, 21-day average, and 56-day average, respectively. The estimated groundwater concentration is 0.00224 ppb. The GENEEC and SCI-GROW outputs are presented in Tables 1 and 2, respectively. The input parameters used with GENEEC and SCI-GROW appear in Tables 3 and 4, respectively.

BACKGROUND

The Environmental Fate and Effects Division (EFED) has been asked to generate a Tier 1 drinking water assessment for use of Sulfosate (aka glyphosate trimesium) on wheat, corn, and soybeans. Sulfosate is a systemic herbicide used as a broadcast spray and a spot treatment for emergent grass and broadleaf weed control in a variety of row and orchard crops. This memo presents results from the current EFED Tier 1 screening models GENEEC (surface water) and SCI-GROW (ground water). The following tables present the environmental fate inputs used with each model. The application rates of sulfosate are dependent on specific weeds. The application rate used in the modeling is the maximum rate found for any of the target weeds.

Table 3. GENEEC model inputs for Sulfosate

Parameter	Input	Rationale for Selection
Aerobic soil metabolism $t_{1/2}$ (days)	5.6	90% upper confidence limit on mean
K_{oc} (mL/g)	184	lowest K_{oc}
Application rate (lb a.i./Acre)	4.75	maximum rate of all uses
Solubility in water (ppm)	10,000	data unavailable, but reported as "high" in EFGWB one-liner database
Aerobic aquatic metabolism $t_{1/2}$ (days)	11.2	data unavailable, therefore 2 times the aerobic soil $t_{1/2}$ was used
Hydrolysis $t_{1/2}$ (days)	0	reported as "stable" in the EFGWB one-liner database

Table 4. SCI-GROW model inputs for Sulfosate

Parameter	Input	Rationale for Selection
Aerobic soil metabolism $t_{1/2}$ (days)	1.2	median value
K_{oc} (mL/g)	345	median value
Application rate (lb a.i./Acre)	4.75	maximum rate