

of total aggregate exposure to that pesticide. Potential drinking water concentrations of fluroxypyr were estimated in ground water and surface water using the screening concentration in ground water (SCI-GROW) and the generic expected environmental concentration (GENEEC) models, respectively. Both SCI-GROW are Tier I screening level models that use conservative assumptions.

The estimated concentration of fluroxypyr in ground water according to SCI-GROW is 0.16 mg/L. EPA has indicated that peak concentrations of a pesticide in surface water should be used in an acute assessment for comparison with DWLOC values. The estimated peak concentration of fluroxypyr in surface water using GENEEC is 20.88 mg/L. The upperbound estimated fluroxypyr concentrations in ground water (0.16 mg/L) and surface water (20.88 mg/L) are substantially below the acute DWLOC of 37,303 mg/L for pregnant females. Therefore, even with the numerous conservative assumptions included in this assessment, aggregated acute fluroxypyr exposure for pregnant females resulting from dietary exposure and upper-bound drinking water exposure is well within acceptable limits of exposure and risk.

As indicated above, the estimated concentration of fluroxypyr in ground water according to SCI-GROW is 0.16 mg/L. EPA has indicated that the 56-day value from GENEEC should be divided by 3 for comparison to short-term, intermediate-term and chronic DWLOC values. The estimated 56-day concentration of fluroxypyr in surface water using GENEEC is 7.08 mg/L. Therefore, the surface water concentration used in this assessment is 2.36 mg/L (7.08 mg/L / 3). Potential residential exposure resulting from fluroxypyr use on turf was included along with potential dietary exposure when calculating the short-term DWLOC for adults and toddlers. The short-term DWLOC for toddlers and the general population of adults was calculated to be 7,843 mg/L and 27,450 mg/L, respectively. The DWLOCs are substantially greater than high-end estimated exposure from surface water or ground water, indicating risk from potential drinking water exposure is well within acceptable levels.

As indicated above with short-term exposure, Tier I screening level estimates of potential fluroxypyr concentrations in ground water and surface water are 0.16 mg/L and 2.36 mg/L, respectively. Chronic DWLOCs for children 1–6 years old and for the general population of adults are 7,896

mg/L and 27,889 mg/L, respectively. Since the chronic DWLOCs are substantially greater than potential exposure through ground water or surface water, risk from potential chronic exposure through drinking water is well within acceptable levels.

2. *Non-dietary exposure.* The proposed use of fluroxypyr on residential turf presents the potential for short-term residential exposure. Homeowners may have dermal and inhalation exposure to fluroxypyr during application to turf and also may have dermal exposure due to post-application activity on the treated turf. Toddlers may have dermal and oral exposure to fluroxypyr due to post-application activity on treated turf. Transferable residue of fluroxypyr from turf was found to range from 0.03 to 0.74% (used as a high end estimate) of the fluroxypyr applied and to dissipate with a half-life ranging from 1.4 to 2.5 days. Exposure was estimated based on equations and default values given in the Standard Operating Procedures (SOPs) for Residential Exposure Assessment. Risk from short-term dermal exposure was assessed using a NOAEL of 1,000 mg/kg/day from a 21-day rabbit dermal study. Short-term oral and inhalation exposure was assessed using a NOAEL of 80 mg/kg/day from a 90-day rat feeding study.

A high-end estimate of exposure for adults was developed by combining dermal exposure from application of fluroxypyr to turf with post-application dermal exposure also on the day of treatment (day 0). Homeowner exposure during the application of fluroxypyr to turf includes both dermal and inhalation exposure. Surrogate dermal and inhalation exposure data from Pesticide Handlers Exposure Data base (PHED V1.1) was used in estimating applicator exposure. The PHED surrogate data used to estimate exposure assumes residential applicator attire to include short pants, short-sleeved shirt, and no gloves. The applicator exposure estimate was based on a broadcast application using a garden hose end sprayer. Margin of exposure (MOE) values for dermal and inhalation exposures were calculated using the toxicity endpoints previously described. Based on these Tier I screening-level estimates, the general population of adults was estimated to have potential dermal and inhalation exposures resulting in MOE values of 8,635 and 2,666,667, respectively. These MOEs are substantially greater than 100, indicating that risk from these potential exposures is well within acceptable levels.

Toddlers may have exposure to fluroxypyr due to post-application activity on treated turf. When a pesticide in liquid formulation is applied to turfgrass toddlers may experience post-application exposure through dermal exposure and also, through oral exposure due to hand-to-mouth transfer of pesticide residue and ingestion of treated turfgrass from treated areas. Based on Tier I screening-level estimates, the MOE values for dermal exposure and oral exposures are 34,722 and 26,667, respectively. Even with conservative Tier I estimates the MOEs are well above 100, indicating that risk from these potential exposures is well within acceptable levels.

D. Cumulative Effects

The potential for cumulative effects of fluroxypyr MHE and fluroxypyr and other substances that have a common mechanism of toxicity is also considered. There is no reliable information to indicate that toxic effects produced by fluroxypyr MHE and fluroxypyr would be cumulative with those of any other pesticide chemical. Thus, it is appropriate to consider only the potential risks of fluroxypyr MHE and fluroxypyr in an aggregate exposure assessment.

E. Safety Determination

1. *U.S. population.* Acute dietary exposure for pregnant females to residues of fluroxypyr from current and proposed uses was estimated to occupy only 0.53% of the acute RfD, which is well below levels expected to pose any appreciable risk to human health. Additionally, the acute DWLOC was calculated to be over 1,700-fold greater than potential fluroxypyr residue in drinking water predicted by conservative screening level models. Thus, aggregated acute exposure to fluroxypyr resulting from current and proposed uses is well within acceptable levels of risk.

Use of fluroxypyr on turf results in potential short-term residential exposure for adults. Potential short-term dietary and residential exposures were combined into an aggregate MOE. Potential exposure through drinking water was not included in the aggregate MOE, but was evaluated in aggregate through use of a DWLOC calculated for short-term exposure. The short-term aggregate MOE for the general population of adults was calculated to be 6,423. Additionally, the short-term DWLOC for the general population of adults was over 10,000-fold greater than potential fluroxypyr residues in drinking water predicted by conservative screening level models.