

from these potential exposures is well within an acceptable level.

Consistent with the scenario described above for the general adult population, female adult homeowners may experience exposure to fluroxypyr during application to turf as well as from post-application exposure. Female applicator dermal and inhalation exposure was estimated to be 0.115 mg/kg/day and 0.00004 mg/kg/day, respectively. Additionally, female adults may also experience post-application dermal exposure from treated turf on the day of application. Post-application dermal exposure for females was estimated to be 0.0201 mg/kg/day. Since dermal absorption is assumed to be 100% and since both dermal and inhalation exposure are being evaluated against the same toxicity endpoint, total potential exposure from fluroxypyr use on turf can be estimated by simply adding the dermal and inhalation exposure. The combined exposure is 0.13514 mg/kg/day (0.115 mg/kg/day + 0.00004 mg/kg/day + 0.0201 mg/kg/day). Using a NOAEL of 125 mg/kg/day, the MOE is calculated to be 925 (125 mg/kg/day / 0.13514 mg/kg/day). The MOE for female adults as a result of potential dermal and inhalation exposure from residential use of fluroxypyr on turf is well above 100, indicating that risk is within acceptable levels.

Golfers may have dermal exposure to fluroxypyr due to post-application activity on the treated turf. Dermal exposure for adult golfers was estimated on the day of treatment (day 0) to provide a high-end estimate of exposure. Exposure was estimated based on a transfer coefficient of 500 cm²/hr⁽¹⁾ and an exposure time of 4 hours. Exposure was estimated to be 0.001186 mg/kg/day. A MOE of 843,170 was calculated based on an assumption of 100% dermal absorption and a NOAEL of 1,000 mg/kg/day. Given a MOE of three orders of magnitude greater than 100, risk is well within acceptable levels.

Potential exposure for female golfers was estimated to be 0.001383 mg/kg/day. A MOE of 90,383 was calculated based on an assumption of 100% dermal absorption and a NOAEL of 125 mg/kg/day. The MOE is substantially greater than 100, indicating that risk is well within acceptable levels.

Toddlers may have exposure 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,

ingestion of treated turfgrass and incidental ingestion of soil from treated areas.

Toddler post-application dermal exposure from treated turf on the day of application was estimated to be 0.0288 mg/kg/day. Oral exposure due to hand-to-mouth transfer of residues was estimated to be 0.0011 mg/kg/day. Oral exposure due to ingestion of treated grass was estimated to be 0.0019 mg/kg/day. Combined oral exposure from hand-to-mouth transfer of residues and ingestion of treated grass is 0.0030 mg/kg/day (0.0011 mg/kg/day + 0.0019 mg/kg/day). The MOE for dermal exposure is 34,722 and oral exposure is 26,667, both of them well above 100, indicating that risk is well within acceptable levels.

Use of fluroxypyr on turf results in potential short-term residential exposure for adults and children. Potential short-term dietary and residential exposures were combined into aggregate MOE values. Potential exposure through drinking water was not included in the aggregate MOEs, but was evaluated in aggregate through use of a DWLOC calculated for short-term exposure. The aggregate MOEs for adults and toddlers ranged from 906 to 29,335, but all were well above 100, indicating an adequate margin of safety. Additionally, the short-term DWLOCs for toddlers and adults were over 3,000-fold greater than potential fluroxypyr residues in drinking water predicted by conservative screening level models. Therefore, aggregate short-term exposure and risk for children and adults is expected to be 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 0.53% of the acute RfD, indicating very little risk. 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.

Potential dietary and residential exposures were combined into an aggregate MOE value. Those MOEs range from 906 to 29,335. The aggregate MOEs are well above 100, indicating risk is well within acceptable levels. Additionally, the DWLOCs were over 11,000-fold greater than potential fluroxypyr residue in drinking water. Chronic dietary exposure to residues of fluroxypyr from current and proposed uses was estimated to occupy 0.4% of the RfD. The DWLOC was calculated to be over 11,000 fold greater than potential fluroxypyr residue in drinking water.

It is concluded that there is a reasonable certainty that no harm will result to the general U.S. population, pregnant females or developing young from acute aggregate, short-term or chronic aggregate exposures to fluroxypyr residues from current and proposed uses.

2. *Infants and children.* FFDCA section 408 provides that EPA may apply an additional safety factor for infants and children in the case of threshold effects to account for prenatal and postnatal toxicity and the completeness of the data base. Based on the current toxicological data requirements, the data base for fluroxypyr MHE relative to prenatal and postnatal effects for children is complete. There were no indications of neurotoxicity and developmental toxicity was not observed in the absence of maternal toxicity. It is concluded that there is no indication of increased sensitivity of infants and children relative to adults and that an additional FQPA safety factor is not required.

The acute and short-term exposures were assessed for pregnant females to evaluate the risk for developmental toxicity and it was concluded that there was reasonable certainty of no harm from aggregate acute or short-term exposures resulting from current and proposed uses of fluroxypyr.

Toddlers may experience short-term dermal and oral exposure to fluroxypyr as a result of post-application activities on treated residential turf. Additionally, there is the potential for exposure to fluroxypyr through residue in food and drinking water. Tier I assessments were conducted to develop very conservative estimates of potential exposure through residential, dietary and drinking water pathways.

Potential dietary and residential exposures were combined into an aggregate MOE value. The aggregate MOE was 5,120, well above 100, indicating risk is well within acceptable