

408(b)(2)(C) of the FFDCA requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance and to "ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue...."

EPA performs a number of analyses to determine the risks from aggregate exposure to pesticide residues. For further discussion of the regulatory requirements of section 408 of the FFDCA and a complete description of the risk assessment process, see the final rule on Bifenthrin Pesticide Tolerances (62 FR 62961, November 26, 1997) (FRL-5754-7).

### III. Aggregate Risk Assessment and Determination of Safety

Consistent with section 408(b)(2)(D) of the FFDCA, EPA has reviewed the available scientific data and other relevant information in support of this action. EPA has sufficient data to assess

the hazards of and to make a determination on aggregate exposure, consistent with section 408(b)(2) of the FFDCA, for tolerances for combined residues of flufenacet, (N-(4-fluorophenyl)-N-(1-methylethyl)-2-[[5-(trifluoromethyl)-1,3,4-thiadiazol-2-yl]oxy]acetamide) and its metabolites containing the 4-fluoro-N-methylethyl benzenamine moiety on corn, field, forage at 0.4 ppm; corn, field, grain at 0.05 ppm; corn, field, stover at 0.4 ppm; soybean, seed at 0.1 ppm by establishing permanent tolerances for indirect or inadvertent residues of the herbicide flufenacet, (N-(4-fluorophenyl)-N-(1-methylethyl)-2-[[5-(trifluoromethyl)-1,3,4-thiadiazol-2-yl]oxy]acetamide) and metabolites containing the 4-fluoro-N-methylethyl benzenamine moiety in or on the following raw agricultural commodities from the application of this herbicide to the raw agricultural commodities, listed in 40 CFR 180.527 (a) and (b), alfalfa, forage at 0.1 ppm; alfalfa, hay at 0.1 ppm; alfalfa, seed at 0.1 ppm; clover, forage at 0.1 ppm;

clover, hay at 0.1 ppm; grain, cereal, group 15, except rice at 0.1 ppm; grain, cereal, forage, fodder, and straw, group 16, except rice at 0.1 ppm; and grass, forage, fodder, and hay, group 17 at 0.1 ppm. EPA's assessment of exposures and risks associated with establishing the tolerance follows.

#### A. Toxicological Profile

EPA has evaluated the available toxicity data and considered its validity, completeness, and reliability as well as the relationship of the results of the studies to human risk. EPA has also considered available information concerning the variability of the sensitivities of major identifiable subgroups of consumers, including infants and children. The nature of the toxic effects caused by flufenacet are discussed in Table 2 of this unit as well as the no-observed-adverse-effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL) from the toxicity studies reviewed.

TABLE 2.—SUBCHRONIC, CHRONIC, AND OTHER TOXICITY

Guideline No.	Study Type	Results
870.3100	90-Day oral toxicity rodents - rat	NOAEL = <6.0 (male [m], 7.2 (female [f]) milligram/kilogram/day (mg/kg/day) LOAEL = 6.0(m) mg/kg/day based on decreased T4; 28.8 mg/kg/day (f) and on hematology and clinical chemistry findings
870.3100	90-day feeding - mouse	NOAEL(mg/kg/day)=18.2(m),24.5(f), LOAEL (mg/kg/day)=64.2 (m), 91.3(f) based on systemic toxicity and histopathology of the liver, spleen, and thyroid.
870.3150	90-Day oral toxicity in nonrodents	NOAEL (mg/kg/day)= 1.67 (m);1.70 (f). LOAEL (mg/kg/day)= 7.20 (m); 6.90 (f) based on increases in LDH, globulin, and spleen pigment in females, decreased T4 and ALT values in both sexes, decreased albumin in males, and decreased serum glucose in females
870.3200	21/28-Day dermal toxicity	Dermal irritation NOAEL(mg/kg/day)=1000 (m and f) Systemic toxicity NOAEL mg/kg/day) = 20(m); 150(f) LOAEL(mg/kg/day)= 150(m);1,000(f) based on decreased T4 and FT4 levels in both sexes and histopathological findings in females
870.3700	Prenatal developmental toxicity in rodents (rat)	Maternal NOAEL = 25 mg/kg/day LOAEL = 125 mg/kg/day based on decreased BWG initially Developmental NOAEL = 25 mg/kg/day LOAEL = 125 mg/kg/day based on decreased fetal body weight, delayed ossification in skull, vertebrae, sternebrae, and appendages, and increased extra ribs.
870.3700	Prenatal developmental toxicity in nonrodents (rabbits)	Maternal NOAEL = 5 mg/kg/day LOAEL = 25 mg/kg/day based on histopathological findings in liver. Developmental NOAEL = 25 mg/kg/day LOAEL = 125 mg/kg/day based on increased skeletal variations.
870.3800	Reproduction and fertility effects - rat	Parental/Systemic NOAEL = 1.4 (m), 1.5(f) mg/kg/day LOAEL = 7.4 (m), (8.2 (f) mg/kg/day based on increased liver weight in F1 females and hepatocytomegaly in F1 males Reproductive NOAEL = 1.3 mg/kg/day LOAEL = 6.9 mg/kg/day based on increased pup death in early lactation (including cannibalism) for F1 litters and the same effects in F1 and F2 pups at 36 mg/kg/day.