

TABLE 4.—AGGREGATE RISK ASSESSMENT FOR CHRONIC (NON-CANCER) EXPOSURE TO IMIDACLOPRID

Population Subgroup	cPAD mg/ kg/day	% cPAD (Food)	Surface Water EEC (ppb)	Ground Water EEC (ppb)	Chronic DWLOC (ppb)
U.S. Population	0.057	11	17.24	2.09	1,800
Infants <1 year	0.057	26	17.24	2.09	420
Children 1-2 years	0.057	35	17.24	2.09	370
Females 13-49 years	0.057	8.3	17.24	20.9	1,600

3. *Short-term risk.* Short-term aggregate exposure takes into account residential exposure plus chronic exposure to food and water (considered to be a background exposure level).

Short-term aggregate risk assessments are needed for adults as there is potential for both dermal and inhalation handler exposure, and dermal post-application exposure from the residential uses of imidacloprid on turf and pets. In addition, short-term aggregate risk assessments are needed for children/toddlers because there is a potential for oral and dermal, post-application exposure resulting from the residential uses of imidacloprid on turf and pets. The pet-treatment scenario resulted in the lowest combined MOE

for adults (MOE = 400; handler and post-application) and children (MOE = 260; post-application). The turf-treatment resulted in much lower exposures for both adults (MOE = 15,000; handler and post-application) and children (MOE = 1,500; post-application). Therefore, the pet-treatment exposure estimates were aggregated with the chronic dietary (food) to provide a worst-case estimate of short-term aggregate risk for the U.S. population and children 1-2 years old (the child population subgroup with the highest estimated chronic dietary food exposure).

Using the exposure assumptions described in this unit for short-term exposures, EPA has concluded that food

and residential exposures aggregated result in aggregate MOEs of 320 for the U.S. population, and 170 for children 1-2 years. These aggregate MOEs do not exceed the Agency's level of concern for aggregate exposure to food and residential uses. In addition, short-term DWLOCs were calculated and compared to the EECs for chronic exposure of imidacloprid in ground and surface water. After calculating DWLOCs and comparing them to the EECs for surface and ground water, EPA does not expect short-term aggregate exposure to exceed the Agency's level of concern, as shown in Table 5 of this unit:

TABLE 5.—AGGREGATE RISK ASSESSMENT FOR SHORT-TERM EXPOSURE TO IMIDACLOPRID

Population Subgroup	Aggregate MOE (Food + Residential)	Aggregate Level of Concern (LOC)	Surface Water EEC (ppb)	Ground Water EEC (ppb)	Short-Term DWLOC (ppb)
U.S. Population	320	100	17.24	2.09	2,400
Children 1-2 years old	170	100	17.24	2.09	410

4. *Aggregate cancer risk for U.S. population.* There is no evidence of carcinogenicity to humans based on carcinogenicity studies in male and female rats and mice. The Agency concludes that pesticidal uses of imidacloprid are not likely to pose a cancer risk to humans.

5. *Determination of safety.* Based on these risk assessments, EPA concludes that there is a reasonable certainty that no harm will result to the general population, and to infants and children from aggregate exposure to imidacloprid residues.

IV. Other Considerations

A. Analytical Enforcement Methodology

Adequate enforcement methods are available for determination of imidacloprid residues of concern in plant (Bayer Gas Chromatography/Mass Spectrometry (GC/MS) Method 00200)

and livestock commodities (Bayer GC/MS Method 00191). These methods have undergone successful EPA petition method validations (PMVs), and the registrant has fulfilled the remaining requirements for additional raw data, method validation, independent laboratory validation (ILV), and an acceptable confirmatory method (high performance liquid chromatography/ultraviolet (HPLC/UV) Method 00357). The methods may be requested from: Chief, Analytical Chemistry Branch, Environmental Science Center, 701 Mapes Rd., Ft. Meade, MD 20755-5350; telephone number: (410) 305-2905; e-mail address: residuemethods@epa.gov.

B. International Residue Limits

There are no established Codex maximum residue limits (MRLs) for imidacloprid in/on the commodities in the subject petitions. There are currently Canadian and Mexican MRLs for

imidacloprid and metabolites containing the 6-chloropicolyl moiety in potatoes at 0.3 ppm. The Mexican and Canadian MRLs are not equivalent to the US-recommended tolerance level. Therefore, harmonization is not possible at this time.

V. Conclusion

Therefore, the tolerances are established for combined residues of imidacloprid, its metabolites containing the 6-chloropyridinyl moiety, all expressed as the parent, in or on banana (import) at 0.02 ppm; cranberry; mustard, seed; corn, pop, grain at 0.05 ppm; corn, pop, stover at 0.20 ppm; vegetable, root and tuber, group 1, except sugar beet at 0.40 ppm; strawberry at 0.50 ppm; acerola; avocado; canistel; feijoa; guava; jaboticaba; mango; okra; papaya; passionfruit; sapodilla; sapote, black; sapote, mamey; star apple; starfruit; wax