

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

Population Subgroup	Aggregate MOE (Food + Residential)	Aggregate Level of Concern (LOC)	Surface Water EEC (ppb)	Ground Water EEC (ppb)	Short-Term DWLOC (ppb)
Adult Female: Structural Wood Treatment	544	300	0.1	0.006	100
Adult Male: Structural Wood Treatment	546	300	0.1	0.006	120
Adult Female: Indoor Crack and Crevice Treatment	855	300	0.1	0.006	140
Adult Male: Indoor Crack and Crevice Treatment	858	300	0.1	0.006	170
Children (Toddler): Outdoor Post-application Exposure	354	300	0.1	0.006	11
Children (Toddler): Indoor Post-application Exposure	694	300	0.1	0.006	42

4. Intermediate-term risk.

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

Bifenthrin is currently registered for use(s) that could result in intermediate-term residential exposure and the Agency has determined that it is appropriate to aggregate chronic food and water and intermediate-term exposures for bifenthrin. However, since short-term risk estimates for residential handler and post-application exposures to bifenthrin represent worst-case risk estimates for intermediate-term scenarios, separate intermediate-term aggregate risks were not estimated. Short-term risk estimates are considered to represent worst-case risk estimates for intermediate-term scenarios for the following reasons.

The toxic endpoints used to estimate risks for intermediate-term dermal, incidental oral, and inhalation exposures for bifenthrin are the same as those used to estimate risks from short-term exposures. In addition, EPA used the same residue data from outdoor (turf) and indoor (hard-surface) studies to estimate short and intermediate-term exposures. Any differences in the exposure estimates are a result of the assumptions used for activity patterns, which may differ for short versus intermediate-term exposure depending on the scenario assessed. As a result of these differences, exposure estimates for intermediate-term exposure scenarios are either equal to or lower than exposure estimates for short-term scenarios. Consequently, risk estimates (MOEs) for intermediate-term exposures are equal to or greater than MOEs for short-term exposures. Since short-term risk estimates are below levels of concern, intermediate-term risk estimates are also below levels of concern.

5. Aggregate cancer risk for U.S.

population. Bifenthrin has been classified as a Category C (possible human) carcinogen. The Agency has determined that the reference dose (RfD) approach should be used for quantification of human risk. Therefore, the chronic aggregate risk assessment described above in Unit III.E.2. also encompasses chronic aggregate cancer risk from bifenthrin.

6. *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 bifenthrin residues.

IV. Other Considerations

A. Analytical Enforcement Methodology

Adequate enforcement methods are available for determination of the regulated bifenthrin residue in plants. Crop field trial samples were analyzed for residues of bifenthrin using FMC Methods P-1073, P-1089, P-1645M, P-2132M, P-3133, or P-3346. These methods are variations of two other methods which have been submitted for inclusion in PAM II (FMC's Methods P-1031 and RAN-0140). These methods have been adequately validated and are adequate for data collection.

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

The Codex Alimentarius Commission has established several maximum residue limits (MRLs) for residues of bifenthrin in/on various commodities. The Codex MRLs are expressed in terms of bifenthrin per se. The Codex MRL and the U.S. tolerance expressions are compatible.

Of the new commodities for which tolerances are being established, Codex MRLs exist only for pear, grapefruit, lemon and orange. The Codex MRLs of 0.5 ppm for pear and 0.05 ppm for grapefruit, lemon and orange are compatible with the new U.S. tolerances for pear (0.5 ppm) and citrus fruit (0.05 ppm). Codex MRLs have not been established for bananas, herbs, tomatoes, spinach or tree nuts.

The following conclusions can be made regarding efforts to harmonize existing (i.e., previously established) U.S. tolerances with Codex MRLs: (i) Compatibility between the U.S. tolerances and Codex MRLs exists for maize and chicken commodities except eggs; (ii) incompatibility of the U.S. tolerances and Codex MRLs remains for maize forage and fodder, strawberry, eggs, and cattle commodities because of differences in agricultural practices and/or method limits of quantitation. No questions of compatibility exist with respect to commodities where Codex MRLs have been established but U.S. tolerances do not exist.

There are no Canadian MRLs established for bifenthrin. Mexican MRLs have been established for bifenthrin at 0.5 ppm for cottonseed, 0.05 ppm for maize, and 3 ppm for strawberry. These levels are compatible with the U.S. tolerance levels.

V. Conclusion

Therefore, tolerances are established for residues of bifenthrin, (2-methyl[1,1'-biphenyl]-3-yl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropane-carboxylate, in or on almond, hulls at 2.0 ppm; banana at 0.1 ppm; fruit, citrus, group 10 at 0.05 ppm; herb subgroup 19A at 0.05 ppm; pear at 0.5 ppm; nut, tree, group 14 at 0.05 ppm; spinach at 0.2 ppm; tomato at 0.15 ppm; and food/feed products in food/feed handling establishments at 0.05 ppm.